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"U.S. Strategic Nuclear Forces: Background, Developments, and Issues". Written by Amy F. Woolf, published by the Congressional Research Service; August 8 2017

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Even though the United States is in the process of reducing the number of warheads deployed on its long-range missiles and bombers, consistent with the terms of the New START Treaty, it also plans to develop new delivery systems for deployment over the next 20-30 years. The 115th Congress will continue to review these programs, and the funding requested for them, during the annual authorization and appropriations process.

During the Cold War, the U.S. nuclear arsenal contained many types of delivery vehicles for nuclear weapons. The longer-range systems, which included long-range missiles based on U.S. territory, long-range missiles based on submarines, and heavy bombers that could threaten Soviet targets from their bases in the United States, are known as strategic nuclear delivery vehicles. At the end of the Cold War, in 1991, the United States deployed more than 10,000 warheads on these delivery vehicles. That number has declined to less than 1,500 deployed warheads today, and is slated to be 1,550 deployed warheads in 2018, after the New START Treaty completes implementation.

At the present time, the U.S. land-based ballistic missile force (ICBMs) consists of 400 landbased Minuteman III ICBMs, each deployed with one warhead. The fleet has declined to 400 deployed missiles, while retaining 450 launchers, to meet the terms of the New START Treaty. The Air Force is also modernizing the Minuteman missiles, replacing and upgrading their rocket motors, guidance systems, and other components, so that they can remain in the force through 2030. It plans to replace the missiles with a new Ground-based Strategic Deterrent around 2030.

The U.S. ballistic missile submarine fleet currently consists of 14 Trident submarines; each can carry up to 24 Trident II (D-5) missiles, although they will carry only 20 under the New START Treaty. The Navy converted 4 of the original 18 Trident submarines to carry non-nuclear cruise missiles. The remaining carry around 1,000 warheads in total; that number will decline as the United States implements the New START Treaty. Nine of the submarines are deployed in the Pacific Ocean and five are in the Atlantic. The Navy also has undertaken efforts to extend the life of the missiles and warheads so that they and the submarines can remain in the fleet past 2020. It is designing a new Columbia class submarine that will replace the existing fleet beginning in 2031.

The U.S. fleet of heavy bombers includes 20 B-2 bombers and 54 nuclear-capable B-52 bombers. The B-1 bomber is no longer equipped for nuclear missions. The fleet will decline to around 60 aircraft in coming years, as the United States implements New START. The Air Force has also begun to retire the nuclear-armed cruise missiles carried by B-52 bombers, leaving only about half the B-52 fleet equipped to carry nuclear weapons. The Air Force plans to procure both a new long-range bomber and a new cruise missile during the 2020s. DOE is also modifying and extending the life of the B61 bomb carried on B-2 bombers and fighter aircraft and the W80 warhead for cruise missiles.

The Obama Administration completed a review of the size and structure of the U.S. nuclear force, and a review of U.S. nuclear employment policy, in June 2013. This review has advised the force structure that the United States will deploy under the New START Treaty. It is currently implementing the New START Treaty, with the reductions due to be completed by 2018. The Trump Administration has indicated that it will conduct a new review of the U.S. nuclear force posture and

has pledged to continue most, if not all, of the modernization programs. Congress will review the Administration's plans for U.S. strategic nuclear forces during the annual authorization and appropriations process, and as it assesses U.S. plans under New START and the costs of these plans in the current fiscal environment. This report will be updated as needed.

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US NUCLEAR WEAPONS

Scout Warrior (Minnetonka, MN)

Next US ICBM Intercept to Use New Technology

By Kris Osborn

September 4, 2017

Northrop Grumman is working with the Missile Defense Agency to refine new command and control systems able to exchange time-sensitive information with an interceptor kill vehicle.

The Pentagon's next intercept test will incorporate new missile defense technology engineered to improve the likelihood that a Ground-Base Interceptor can succeed in destroying an approaching ICBM nuclear weapons attack.

Northrop Grumman is working with the Missile Defense Agency to refine new command and control systems able to exchange time-sensitive information with an interceptor kill vehicle to improve its ability to guide toward an attacking enemy ICBM.

The technology, which involves the integration of new components into data terminals and communications networks, is designed to increase reliability of the Pentagon's Ground-Based Midcourse Defense (GMD) system and expedite the process through which sensors and data locate ICBM targets, Mark Thornton, Director of Missile Defense Systems Operating Unit, Northrop Grumman, told Scout Warrior in an interview.

While a Ground-Based Interceptor (GBI) travels into space to discern and destroy an ICBM, sensors and communications technology are needed to connect with the interceptor prior to engagement. While many of the details, sensors or RF technologies involved are, not surprisingly, unavailable for public discussion, there are a number of substantial cutting-edge improvements emerging quickly.

"We are replacing the GMD coms network with upgrades and a compressed footprint. We are making changes rapidly to put new devices into the network," Thornton explained.

Command and control upgrades to missile defense technology continue to emerge as a key priority in budget and spending deliberations, according to many senior Pentagon leaders.

Given the North Korea threat, missile defense upgrades are progressing at a crucial time for the Pentagon's Ground-Based midcourse defense. Following the completion of current Pentagon review of nuclear weapons, policy and defenses, there is a distinct possibility that funding for missile defense technology will continue to climb.

In a recent appearance before the House Armed Services Committee, Defense Secretary Jim Mattis said additional decisions about prioritized missile defense spending will be made at the conclusion of the ongoing strategy review.

Also testifying before HASC, Missile Defense Agency Commander Vice. Am. J.D. Syring specified that large portions of the more than a proposed $7.9 billion 2018 MDA budget would be to support "integration of interceptors, sensors and the command, control, battle management and communications system" for missile defense.

As the industry deputy program manager for the GMD effort, Northrop is responsible for fire-control systems, command launch technology, command and control networks and a wide range of computer technology responsible for the launch of an interceptor.

Northrop is teamed with Raytheon, which makes the Exo-atmospheric kill vehicle and Boeing, which engineers the Ground-Based Interceptor.

Reducing the hardware footprint and accelerating processing speeds of GMD command and control systems is a key element of these upgrades. In total, modern computing technology has enabled Northrop engineers to compress nine racks of servers into a single rack.

“You can do a lot more in a single box these days than you could do in a single system. There is more processing power and capability in smaller packages than when we built the system years ago. The machines that run the core of our system were the size of a refrigerator,” Thornton said.

Having fewer hardware components on a GMD system - achieved through compression, smaller computing and data consolidation – is fundamental to improving the reliability of a Ground-Based Interceptor as it ignites and is guided into space.

Northrop engineers are in the process conducting a wide range of simulation exercises and ground tests to prepare the new components for an upcoming MDA intercept test.

The precise timing of the next test is not yet specified, however it is likely to be of great significance given that a Pentagon GBI succeeded in destroying an incoming ICBM target in space for the first time – just within the last few months.

http://scout.com/military/warrior/Article/The-Pentagons-Next-ICBM-Intercept-Test-Will-New-Command-and-Cont-103103049

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Xinhua (Beijing, China)

Interview: Three Trends Observed as U.S. Updates Its Nuclear Arsenal: Expert

Author Not Attributed

September 4, 2017

As the United States is undergoing a cycle to update its nuclear arsenal, flexibility, accuracy and interoperability are the key features that will be enhanced, an nuclear policy expert told Xinhua in an interview.

Military labs and contractors are developing interoperable warheads, missiles with a flexible yield and weapons fine-tuned for accuracy, according to Hans Kristensen, Director of the Nuclear Information Project at the Federation of American Scientists.

The United States is currently under going its fourth or fifth major cycles to update its nuclear arsenal since the 1940s, Kristensen said, as the old weapons would become too expensive to operate after 2030.

Recently U.S. President Donald Trump said his administration is spending "vast amounts" of money on nuclear arsenal and missile defense during a speech about Afghanistan.

The U.S. Air Force on Aug. 23 released two contracts with Lockheed Martin and Raytheon with a total value of 1.8 billion U.S. dollars to commence research on cruise missile technologies, which is essential to the delivery of nuclear weapons.

"There's general interest in U.S. nuclear weapons planning to make weapons in the future more accurate so that they don't need to have as much yield," he said.

A bomb with lower yield would mean less pollution and radioactive fallout, so that ally countries and nearby U.S. troops would be better protected, Kristensen said.

"They might want more selective options at the lower end so that can broaden the flexibility of what types of scenarios they could use it in," he said.

Kristensen said there's another plan to develope "interoperable warheads" that are basically nuclear warheads that would go on ballistic missiles either land based or sea based.

"You would use a small number of warhead designs from land and sea based but sort of cut paste, take components from them, mix with other components and you get these interoperable warheads that could be used with minor modification on both systems," he said.

"That's a way of getting away from having larger number of different warheads," he said.

There is another trend to tweak the electronics of the weapons to make them more effective, according to Kristensen.

Kristensen said the U.S. Navy has already tested the new technology on a sea based missile.

"It is encased in a cone shape reentry vehicle, and the tip of the reentry body is the arming and firing fuse of the system," he said of the missile.

The system is used to detect where the bomb explode, and the modernization program is to add "an enhanced component to that device that makes the warhead more capable of killing of its target," he said.

The missile would be overshot and the radar would sense where it should go off, at an optimum height instead of a pre-set height.

Kristensen said while renovation of nuclear technology is normal ongoing in all nuclear countries, whether the U.S. programs would trigger alarm is whether its core nuclear strategy remain on deterrence or becomes on war-fighting.

Trump's vision for the U.S. nuclear arsenal is yet to be made clear, Kristensen noted, adding more details would surface after a Nuclear Posture Review he has ordered finalizes toward the end of the year.

"I think what we can expect is that the role of nuclear weapons will by and large not change," Kristensen said.

http://news.xinhuanet.com/english/2017-09/04/c_136580429.htm

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Sputnik (Moscow, Russia)

US' Test of Its New Nuclear Bomb 'Not a Confrontational Move'

Author Not Attributed

August 31, 2017

The National Nuclear Security Administration's (NNSA) flight tests of a modified B61-12 gravity nuclear bomb were neither a confrontational move nor a specific "message" to Russia, Michael O'Hanlon, Director of Research for the Foreign Policy program at Brookings Institution, told Radio Sputnik.

Washington's flight test of its B61-12 gravity nuclear bombs in Nevada doesn't appear to be a confrontational move, Michael O'Hanlon, Director of Research for the Foreign Policy program at Brookings Institution, told Radio Sputnik, adding that the creation of a new bomb is more about reliability and safety rather than developing a new class of warhead.

"The test here is essentially everything around the bomb: it's the aerodynamics by which the bomb would be delivered, you know, it's the basic desire to have the weapon be accurate… it's trying to make the weapon, I think, more reliable and that's the essence of what the ongoing US nuclear warhead modernization is all about," O'Hanlon said.

The scholar called attention to the fact that neither the United States, nor Russia nor any other established nuclear power has tested nuclear weapons with an actual nuclear detonation in about 20 years.

In fact all these years the global players have been complying with the UN's Comprehensive Nuclear-Test-Ban Treaty (CTBT) of 1996 although it has never been ratified, the American scholar noted.

According to O'Hanlon, the comprehensive program of replacing old B61 bombs stationed in Europe with the modified B61-12 is "not meaningful in military terms." The scholar stressed that he saw it primarily as "an issue of reliability and safety and maybe some slightly improved performance on accuracy."

"The weapon itself, the warhead and the detonation mechanisms, the basic physics of the nuclear package — these are not changing," O'Hanlon told Sputnik.

The scholar bemoaned the deterioration of US-Russian relations: according to O'Hanlon, "both Russia and the US are still locked in a little bit of legacy of nuclear rivalry in the context of the overall relationship that's been strained for several years."

On the other hand, the scholar noted, the number of nuclear bombs currently deployed in Europe, about a hundred and fifty, is relatively "modest" in comparison with total arsenal of Russia or the United States.

Still, "It's a big number when you think about the explosive power of these weapons, that's why I wish we were talking about how to get rid of all of them rather than how to replace them," the American scholar remarked.

"The good news is that I don't see it as improving military offensive capabilities, I see this primarily in terms of reliability and safety," O'Hanlon reiterated.

He surmised that the test was by no means a signal to US geopolitical competitors or a sort of confrontational or provocative move. Likewise, the scholar rejected the idea that the US' recent B61-12 test was a "message" to North Korea, "except in the sense of a general reminder that [the US] has a powerful nuclear force."

However, it appears that American nuclear expert Dr. Hans Kristensen shares a different stance.

Speaking to Radio Sputnik on Wednesday Kristensen assumed that the B61-12 flight test sent a signal to Moscow.

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

He also called attention to the fact that the modified bombs which are due to be deployed in Europe will be mounted on the Lockheed Martin F-35 Lightning II stealth aircraft, which reportedly has "better penetration capabilities."

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

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

https://sputniknews.com/analysis/201708311056971076-us-tests-new-nuclear-bomb/

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Task & Purpose (Washington, DC)

The Air Force Is Upgrading Its Nuclear-Weapons Systems. Here's What You Need to Know

By Sarah Sicard

September 1, 2017

Since the 1980s, all three legs of the United States' nuclear deterrent force have been kept up and running with regular, pricey maintenance and upgrades. But the Air Force is moving ahead with plans to overhaul the ground and air legs of the atomic triad by buying two new nuclear-capable missile systems — despite the fact that the Congressional Budget Office has estimated that nuclear purchases through 2024 could ultimately cost taxpayers upwards of $384 billion. While the service's top brass are adamant that they need to modernize to keep American deterrence credible, critics say the branch is taking the wrong approach. Here's a quick and dirty primer on what's happening.

Why now?

On Aug. 21, the Air Force took the its tangible step by awarding two contracts for its Ground Based Strategic Deterrent (GBSD) program to Northrop Grumman and Boeing. Just two days later, it awarded Lockheed Martin and Raytheon contracts to design a Long-Range Standoff missile (LRSO). The stated reason: The service's nukes are really old.

The overhaul comes amid increased North Korean saber-rattling and renewed cold war tensions with Russia, but the decisions to upgrade the missile systems were made long ago — for maximum readiness, not tied to any particular political development, according to a spokesman for the Air Force.

The GBSD work, jointly awarded to Boeing for $349 million and Northrop Grumman for $328 million, is meant to ensure that the ground leg of the nuclear triad is up to snuff and ready to handle future threats. The GBSD is the follow-on program to the aging LGM-30 Minuteman III intercontinental ballistic missile (ICBM), which the Air Force says will need to be phased out in the next decade or so as technological advances make it obsolete. Although the components have seen little degradation since their development, the Air Force believes a new missile platform is preferable to maintaining one that has already outlived its shelf life by 30 years.

When it solicited bids for the GBSD in summer 2016, the Air Force also put out a request for bids on the LRSO to cover the air leg of the triad. The LRSO is intended to replace the air-launched nuclear-capable AGM-86B, which was developed in the 1980s and has long outlived its designed lifespan of

just 10 years. According to an Air Force statement, the LRSO is "an absolutely essential element" of the triad.

When fielded in 2030, it's expected to be carried by B-52, B-2, and B-21 bombers. Lockheed and Raytheon were awarded roughly $900 million apiece for the development of the LRSO.

And outside the Air Force, modernization of the triad's third leg — the Navy's nuclear ballistic missile submarines (SSBNs) — is already being taken up by General Dynamics, which will begin building new Columbia Class submarines to replace the Ohio generation in 2021. The Navy is also looking to extend the life of the Trident D-5 missiles that have been in service since the 1970s.

Lack of consensus

While the Air Force's current nuclear arsenal is aging, not everyone is convinced new platforms are needed to modernize the force.

"We haven't seen a reason why we can't sustain the Minuteman III," Kingston Reif, the director for disarmament and threat reduction policy at the Arms Control Association, told Task & Purpose. "Why not seek a more cost-effective way to sustain the ICBM leg of the triad instead of rushing forward with the GBSD plan?"

Reif is not the only GBSD skeptic around. Former Defense Secretary Chuck Hagel, for example, has suggested that ICBMs aren't really meaningful to U.S. strategy anyway, and certainly not worth the expense of massive upgrades, the Daily Beast has reported.

Air Force officials, though, argue that it's less cost-effective to continue maintaining the older system through 2050; by their account, it would actually cost less to overhaul the system now than continue with the piecemeal upgrades for the next few decades.

"The GBSD will address validated capability gaps and lower sustainment costs over the system's lifecycle," Joe Thomas, a public affairs specialist with Air Force Global Strike Command, told Task & Purpose. "It is an affordable, strategic ground-based system that will ensure uninterrupted operational effectiveness, provide more efficient operations, and deliver a modern weapon system that is easier to maintain and secure." (Task & Purpose reached out to Air Force Global Strike Command for exact numbers to confirm that this is the case, but it could not fulfill T&P's request for information before publication time.)

Reif is skeptical. "We question that rationale," he said. "The submarine leg can handle any target we might need to strike, and the ICBMs are merely a backup. It doesn't make sense to move forward with the Lamborghini-level replacement for the ICBM."

The decision to move forward with the LRSO has also garnered negative opinions from some experts, as well. In 2015, former Defense Secretary William Perry and ex-assistant secretary for nuclear Andy Weber wrote in a Washington Post column that the LRSO should be "killed." A missile that could be "launched without warning and come in both nuclear and conventional variants," they wrote, could lead to confusion about whether the U.S. launched a normal cruise missile or dropped a nuclear bomb — putting enemies on edge, rather than deterring them from reacting in kind.

LRSO advocates, though, see much more potential upside in the missile's development — and greater hazards in the status quo. "The additive and unique capability provided by LRSO in conjunction with our long-range penetrating bomber force enhances deterrence to avoid a nuclear exchange," retired Air Force Lt. Gen. David Deptula told the Cipher Brief. "Nuclear deterrence is the most cost-effective investment the U.S. government can make. Failing to deter nuclear conflict would impose existential costs in ways much more horrific than a very small fraction of the federal budget."

Air Force pushes ahead

On June 20, Air Force Gen. John Hyten, commander of U.S. Strategic Command, told reporters that the ICBM ground leg needs updating because it is the "most responsive" leg of the nuclear triad — over the air-launched ballistic missiles (ALBMs) used by the air leg, and submarine-launched ballistic missiles (SLBM) used by the seaborne leg.

"Can you imagine a nuclear capability without the most responsive element?" Hyten asked in a briefing with reporters. He added that a credible ICBM force was a key to deterring U.S. enemies, because it represented "400 separate ICBMs that have to be targeted, with multiple weapons at a time, in the middle of the United States, in order to defeat that side."

Deptula puts forth a similar argument for the LRSO and other air-launched nuclear platforms, saying they offer the most flexibility because of their range and rapid deployability.

"Only a robust stealth long-range sensor-shooter force consisting of B-2s and B-21s will have the ability to fly from the continental United States to any location on the planet in a matter of hours; penetrate into highly defended enemy airspace; and find, fix, and successfully destroy both hardened and mobile targets," Deptula said in his Cyber Brief interview.

But it's the combination of all three legs that is truly meant to deter enemies from threatening the world with nuclear war — the last being the submarine.

The U.S.'s 12 Ohio-class missile submarines, which were first deployed in 1981, will reach the end of their lifespans between 2027 and 2040. But the Pentagon already has plans to begin replacing the Ohio class by 2031 with a ballistic missile submarine that has been dubbed the Columbia class.

It fires off Trident D5 missiles, 1970s-era nuclear weapons that were upgraded in the 1990s to last until 2027. But the Navy is looking for ways to extend their service life for 25 more years, Scout.com reported.

That's a different tack from the Air Force's drive for new gear. "Things just wear out, and it becomes more expensive to maintain them than to replace them," Secretary of the Air Force Heather Wilson said in a press release on Aug. 21. "We need to cost-effectively modernize."

http://taskandpurpose.com/air-force-upgrading-nuclear-weapons-systems-heres-need-know/

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US COUNTER-WMD

Global Biodefense (Seattle, WA)

Distinguishing Virulent from Harmless Bacteria to Improve Biosurveillance

Author Not Attributed

September 4, 2017

Researchers at Los Alamos National Laboratory are working to eliminate false positives in detection of Francisella bacteria, a few species of which include highly virulent human and animal pathogens.

The effort contributes to more efficient and effective biological surveillance, such as that conducted by the US Department of Homeland Security and the Department of Defense, which provides early

warning of infectious disease outbreaks, hazardous environmental exposures, or possible bioterrorist attacks by spotting trends of public health importance.

“Accurate discrimination among the virulent subspecies of F. tularensis and the environmentally abundant F. novicida and its relatives is absolutely critical for the future success of biological surveillance and attribution activities,” said Los Alamos biologist Jean Challacombe, lead author on a paper out this week in the journal PLOS ONE.

The Francisella genus includes several recognized species, additional potential species, and other representatives that inhabit a range of incredibly diverse ecological niches but are not closely related to the named species. Many of them cause no problems for humans or livestock. F. tularensis, however, is a highly virulent zoonotic pathogen that causes tularemia. Because of weaponization efforts in past world wars, it is considered a first tier biothreat agent.

F. tularensis Type A, is found exclusively in North America and is the most virulent, causing the disease tularemia. It can produce skin ulcers, chest pain and difficulty breathing.

The team has identified several apparently cryptic plasmids in the sequenced genomes of three commonly found environmental Francisella species. These plasmids provide additional phylogenetic and genomic features that differentiate pathogenic F. tularensis strains from near-neighbor species that are not biothreat agents.

“Our work shows that of the more than 120 Francisella genomes that have been sequenced, only a few contain plasmids. This becomes a really useful signpost for researchers, adding genomic features that can prevent misidentification of bacterial relatives that happen to share an otherwise similar genetic profile,” she said. Environmental surveys indicate that F. novicida and similar strains are widely distributed and abundant in diverse environments across the United States, and most importantly, this group appears likely to be a source of environmental false positives for F. tularensis that have occurred in surveillance systems.

To accomplish the analysis, the team sequenced genomes from samples of seawater in the area of Galveston Bay, Texas, some human clinical samples, water from a warm spring and a form isolated from an air conditioning system. Several of the plasmid-containing Francisella strains were sequenced by the Genome Sciences group in the Bioscience Division at Los Alamos.

“Only a few members of the Francisella genus carry plasmids; these include several F. novicida strains, and we found that all of the plasmids were apparently cryptic, encoding functions potentially involved in replication, conjugal transfer and partitioning, a few functions that could be important to environmental survival, and some hypothetical proteins to which a function could not be assigned,” Challacombe said.

According to the published conclusion by Challacombe and her coauthors Cheryl Kuske and Segaran Pillai, “While bacterial plasmids can carry traits that enhance the survival of host cells and influence bacterial evolution, cryptic plasmids encode few functions other than those needed to replicate and mobilize. With no obvious benefit to the host cells that carry them, cryptic plasmids are somewhat of an enigma. . . Our results comparing the cryptic plasmids in diverse Francisella genomes show that they are also found in clinical isolates.

These results provide a new understanding of the phenotypic variability and complex taxonomic relationships among the known Francisella species, and also give us new plasmid features to use in characterizing related species groups.”

There are many cultured Francisella isolates for which we still have no genomic sequence, the researchers point out. It will only be through the sequencing and comparison of many more environmental and near neighbor Francisella isolates that researchers will be able to identify

additional genomic features that enable accurately discriminating among the various species groups.

https://globalbiodefense.com/2017/08/29/distinguishing-virulent-from-harmless-bacteria-to-improve-biosurveillance/

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Phys.org (Isle of Man, UK)

Radiation Analysis Software Makes Emergency Responders' Jobs Quicker, Easier

Author Not Attributed

September 5, 2017

When law enforcement officers and first responders arrive at an emergency involving radiation, they need a way to swiftly assess the situation to keep the public and environment safe. Having analysis tools that can quickly and reliably make sense of radiation data is of the essence.

Decision-makers in these emergencies can now turn to a new Sandia National Laboratories-developed tool called InterSpec. A software application available for both mobile and traditional computing devices, InterSpec can rapidly and accurately analyze gamma radiation data collected at the scene.

Comprehensive, easy-to-use radiation analysis tool

Software developer and physicist Will Johnson said InterSpec updates, strengthens and integrates many radiation analysis tools and resources into a single mobile or desktop application that is seamless and intuitive to use.

"InterSpec allows decision-makers to rapidly identify both radioisotopes and shielding materials around the source," Johnson said. "InterSpec is also a valuable tool for laboratories and other academic and industrial settings where an accurate understanding of detected radiological material is crucial."

For the past four years, Sandia researchers have been making InterSpec easy to use in any situation by anyone who works with radioactive material. The Sandia team consists of Johnson and researchers Ethan Chan, Edward Walsh and Noel Nachtigal.

InterSpec was created for people who have some radiation knowledge but aren't experts. In many situations, radiation experts are not immediately available to assist law enforcement personnel and emergency responders. Using InterSpec, even people with limited analysis experience can obtain the detailed radiation information they need to make quick decisions.

"You can take the radiation data from any detector, and InterSpec will identify the radiation source, describe its shielding and calculate the radiation dose," Walsh said. "InterSpec will also tell you if it's dangerous for you to be around this source. The tool is amazing."

Multiplatform tool with more features, larger database

InterSpec provides quick, useful radiation analysis by combining radiation physics, radiation transport calculations and detector response functions with a radioisotope database that is much larger than those found in similar products. These attributes enable InterSpec to rapidly compute radiation quantities, reducing user errors.

Unlike radiation-analysis software packages that are limited to Windows systems, InterSpec runs on multiple platforms, including Windows, Mac OSX, Linux, iOS and Android, and on all web browsers.

The wide range of platforms means users in different settings can quickly exchange data and share a unified view of the data. Furthermore, InterSpec works in isolated or shielded environments with no network connectivity needed.

"We've made InterSpec as easy as possible to use," Chan said. "You don't have to spend two or three years to learn the tool. InterSpec is really simple, both in how it looks and how you use it."

InterSpec features include work tracking, the ability to view and edit metadata and automatic saving of spectrum files. The spectrum files include location-embedded metadata for visualization on a map, so users can select a geographical region of measurements.

First-time users can access InterSpec's help system and tool tips that describe each button's function. In addition, intuitive icons enable users to move around the app quickly.

Using InterSpec in the field

Johnson serves on a Department of Energy team that identifies types of radiation found throughout the country.

"The goal of the team is to figure out if detected radiation is a threat or not," he explained. "InterSpec helps determine if an item is a potential threat, and if so, what kind."

Johnson said InterSpec has helped the team respond to events in the field. "The ability to analyze data before reaching a traditional computer or in situations where only a phone or tablet could be taken has proven extremely useful."

InterSpec can be used to help determine the source nuclide type, strength and shielding inside sealed boxes or cargo containers.

The Sandia team is working to make InterSpec available to people who conduct radiation measurement analysis so they can benefit from the improved workflows, capabilities and time savings of InterSpec.

https://phys.org/news/2017-09-analysis-software-emergency-jobs-quicker.html

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ChemEurope.com (Berlin, Germany)

How to Combat Radiological Weapons

Author Not Attributed

September 4, 2017

Safety assistance system warns of dirty bombs

The threat of terrorism in Europe has been on the rise in recent years, with experts and politicians particularly worried that terrorists might make use of dirty bombs. Fraunhofer researchers have developed a new system that will be able to detect possible carriers of radioactive substances, even in large crowds of people. This solution is one of many defensive measures being realized in the REHSTRAIN project, which is focused on security for TGV and ICE high-speed trains in France and Germany.

For a long time, experts have been warning of attacks using dirty bombs, where terrorists mix radioactive material into conventional explosives such that it is scattered by a subsequent explosion. This is a real danger; ISIS, for instance, claims to have access to radioactive material. Security agencies are aware of the threat: last June, a U.S. port terminal in Charleston was evacuated and closed for several hours following a warning that a dirty bomb was on board a ship moored there. Once the all-clear was given, security personnel stated that they were being deliberately overcautious and had reacted accordingly.

Dirty bombs are not a form of nuclear weapon, since they do not rely on a nuclear chain reaction occurring after they have been set off. The radioisotopes needed to make dirty bombs, such as cesium-137, cobalt-60, americium-241 or iridium-192, are easier to get hold of than fissile material for nuclear weapons; they are used in many nuclear medicine departments at hospitals and in research centers, but also for ma-terials testing in industry. “Five grams of cesium – scattered by a couple of kilograms of explosive – is enough to cause billions of dollars’ worth of damage, to say nothing of the psychosocial effects and the impact on health. People who want to build these bombs are risking death through exposure to radiation – but that is unlikely to deter terrorists,” says Prof. Wolfgang Koch, a mathematician and physicist who heads the sensor data and information fusion department at the Fraunhofer Institute for
Communication, Information Processing and Ergonomics FKIE, based in Wachtberg, Germany. Fraunhofer FKIE has developed an assistance system capable of detecting radiological threats in a stream of people and warning security personnel; this is the institute’s contribution to the Franco-German REHSTRAIN project, which is researching the vulnerability of ICE and TGV high-speed trains (see box: “The REHSTRAIN project at a glance”). Fraunhofer FKIE is developing the system as a subcontractor to Hochschule Bonn-Rhein-Sieg.

Data protection writ large

The assistance system comprises several components: a sensor network, commercially available Kinect cameras, and data fusion software. The sensor network is made up of gamma spectrometers, which detect and classify gamma radiation. “Most of the materials that lend themselves to being used in a radiological bomb emit gamma radiation, which cannot be shielded. That’s why we use this kind of sensor,” Koch explains. The next phase of the system will be able to tell which substance is emitting the radiation, and whether it is being carried on someone’s person or is present inside their body – perhaps because they are on medication such as radioactive iodine. Although individual sensors can provide data on the type of material and the intensity of its radiation, they cannot pinpoint its location. This calls for a network of gamma sensors connected to Kinect cameras as used in the gaming industry. The advantage of these cameras is that they provide not only images but also information about distances. Mounted on the ceiling, they record groups of people like a hilly landscape, which means they can precisely track even the busiest streams of people. “We know at any given point in time where each person is located. But of course, we don’t know their identity – and that is an essential consideration for data protection,” Koch adds. Biometric tracking of potential terrorists should be undertaken only when there is sufficient reason to do so.

System clearly identifies carriers of dangerous substances

Once these devices are connected to each other, they can record people in both time and space, and their data fused. Sophisticated mathematical evaluation algorithms then filter out the desired information from the huge amounts of data. “We use artificial intelligence to do this. The algorithms help us calculate the movements of the only person with whom the gamma sensor readings can be correlated. That identifies the potential attacker,” Koch explains.

If they were applied at critical spots – in entrance areas and approaches to railway stations and airports or other public buildings – assistance systems of this sort could report information about

radiological threats to, say, transportation company surveillance systems. The question of who has access is one for security personnel and the police.

Fraunhofer FKIE has been granted permission to experiment with weak radioactive substances, and has already successfully tested its system in the laboratory under the supervision of a radiation control agent. REHSTRAIN has been officially presented as part of a project workshop at FKIE, which in addition to partners from Germany and France was also attended by potential end-users.

http://www.chemeurope.com/en/news/164692/how-to-combat-radiological-weapons.html

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The Conversation (New York, NY)

What 'Sniffer' Planes Can Tell Us About North Korea's Nuclear Tests

By Kaitlin Cook

September 5, 2017

On Sunday, North Korea claimed it had completed its sixth nuclear test – a hydrogen bomb.

This test was performed underground by the notoriously secretive regime. So, how can the international community know the state news agency was telling the truth?

The 6.3 magnitude tremor tells us there was an explosion Sunday. But to know this was a nuclear test, we have to detect the signature of a nuclear explosion.

Nuclear weapons either produce energy through nuclear fission (fission bombs) or a combination of fission and fusion (thermonuclear or hydrogen bombs). In both cases, nuclear reactions with neutrons cause the uranium or plutonium fuel to fission into two smaller nuclei, called fission fragments. These fragments are radioactive, and can be detected by their characteristic decay radiation.

If we detect these fission fragments, we know that a nuclear explosion occurred. And that's where "sniffer" planes come in.

Enter 'sniffer' planes

Since 1947, the United States Air Force has operated a nuclear explosions detection unit.

The current fleet uses the WC-135 Constant Phoenix. The aircraft fly through clouds of radioactive debris to collect air samples and catch dust. By measuring their decay, fission fragments can be detected in minute quantities.

The crew are kept safe using filters to scrub cabin air. Radiation levels are monitored using personal measuring devices for each crew member.

Sniffer planes like Constant Phoenix can be rapidly deployed soon after a reported nuclear test and have been used to verify nuclear tests in North Korea in the past.

This year, Constant Phoenix has reportedly been deployed in Okinawa, Japan and has had encounters with Chinese jets.

On the ground, the Comprehensive Test Ban Treaty Organisation (CTBTO) operates 80 ground-based monitoring stations across the globe that constantly monitor the air for fission products that have dispersed through the atmosphere.

Japan and South Korea operate their own radiation monitoring networks. These networks will also presumably be looking for signatures of the latest North Korean test.

What can fission fragments tell us?

When a nuclear test occurs underground, the fission fragments are trapped except for noble gasses.

Because noble gasses don't react chemically (except in extreme cases), they diffuse through the rock and eventually escape, ready to be detected.

In particular, some radioactive isotopes of the chemical element xenon are useful due to the fact these isotopes of xenon don't appear in the atmosphere naturally, have decay times that are neither too long nor too short, and are produced in large quantities in a nuclear explosion. If you see these isotopes, you know a nuclear test occurred.

Something happened during this test that has people excited — there was an additional magnitude 4.1 tremor around eight minutes after the initial tremor, according to the United States Geological Survey. Among other things, this may indicate that the tunnel containing the bomb collapsed. If this happened, then other fission products and other radioactive isotopes could escape as dust particles.

This might have been accidental or deliberate (to provide proof to international viewers), but in either case, we may learn a lot, depending on how fast the sniffer planes arrived and how much dust was released.

For example, by looking at the probability of seeing fission fragments with different masses, the composition of the fission fuel could be determined. We could also learn about the composition of the rest of the bomb. These facts are things that nuclear states keep very secret.

Crucially, by looking for isotopes that could only be produced in a high intensity high energy neutron flux, we could suggest whether or not the bomb was indeed a hydrogen bomb.

What can't they tell us?

The amount of information a sniffer plane can determine depends on how much material was released from the test site, how quickly it was released (due to nuclear decay) and how rapidly the sniffer plane got into place.

But fission fragment measurements probably can't tell us whether the bomb tested was small enough to fit on an Intercontinental Ballistic Missile (ICBM). After all, it's easy enough for North Korea to show a casing in a staged photograph and blow up something else.

Whether or not North Korea has a thermonuclear device that is capable of being mounted to an ICBM is a question weighing heavily on the minds of the international community.

Sniffer planes and the CTBTO network will be wringing all of the data they can out of the debris in the atmosphere to help the world understand the nuclear threat from North Korea.

https://theconversation.com/what-sniffer-planes-can-tell-us-about-north-koreas-nuclear-tests-83442

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US ARMS CONTROL

The Guardian (London, UK)

How the Nuclear-Armed Nations Brought the North Korea Crisis on Themselves

By Simon Tisdall

September 5, 2017

Failure to honour terms of the 1970 nuclear non-proliferation treaty has helped create ground for Kim Jong-un's recklessness

North Korea's defiant pursuit of nuclear weapons capabilities, dramatised by last weekend's powerful underground test and a recent long-range ballistic missile launch over Japan, has been almost universally condemned as posing a grave, unilateral threat to international peace and security.

The growing North Korean menace also reflects the chronic failure of multilateral counter-proliferation efforts and, in particular, the longstanding refusal of acknowledged nuclear-armed states such as the US and Britain to honour a legal commitment to reduce and eventually eliminate their arsenals.

In other words, the past and present leaders of the US, Russia, China, France and the UK, whose governments signed but have not fulfilled the terms of the 1970 nuclear non-proliferation treaty (NPT), have to some degree brought the North Korea crisis on themselves. Kim Jong-un's recklessness and bad faith is a product of their own.

The NPT, signed by 191 countries, is probably the most successful arms control treaty ever. When conceived in 1968, at the height of the cold war, the mass proliferation of nuclear weapons was considered a real possibility. Since its inception and prior to North Korea, only India, Pakistan and Israel are known to have joined the nuclear "club" in almost half a century.

To work fully, the NPT relies on keeping a crucial bargain: non-nuclear-armed states agree never to acquire the weapons, while nuclear-armed states agree to share the benefits of peaceful nuclear technology and pursue nuclear disarmament with the ultimate aim of eliminating them. This, in effect, was the guarantee offered to vulnerable, insecure outlier states such as North Korea. The guarantee was a dud, however, and the bargain has never been truly honoured.

Rather than reducing their nuclear arsenals, the US, Russia and China have modernised and expanded them. Britain has eliminated some of its capability, but it is nevertheless renewing and updating Trident. France clings fiercely to its "force de frappe". Altogether, the main nuclear-weapon states have an estimated 22,000 nuclear bombs. A report by the non-governmental British-American Security Information Council in May said nuclear security was getting worse.

"The need for nuclear disarmament through multilateral diplomacy is greater now than it has been at any stage since the end of the cold war. Trust and confidence in the existing nuclear non-proliferation regime is fraying, tensions are high, goals are misaligned and dialogue is irregular," the report said.

"Internationally, relationships between the nuclear-weapon states have deteriorated, in particular between the US and Russia, and to some extent, China … All nuclear-armed states are modernising their nuclear forces, at a worldwide cost of $1tn per decade … Attention tends to be focused on specific cases of proliferation concern, such as North Korea and Iran, at the expense of the bigger picture."

Multilateral forums for advancing nuclear disarmament are in crisis. The next NPT review conference is not due until 2020. Like its 2015 predecessor, it is not expected to achieve much. The UN-backed conference on disarmament, which helped produce conventions banning biological and chemical weapons and initiated the 1996 comprehensive test ban treaty, is politically polarised and struggling to agree key measures such as a fissile material cut-off treaty.

Meanwhile, as South Korea and Japan consider acquiring nuclear weapons, Donald Trump appears irrationally determined to scrap one of the few recent arms control successes – the landmark 2015 nuclear deal with Iran.

There has been one big breakthrough this year, the under-reported adoption by 122 countries at the UN in July of a new treaty on the prohibition of nuclear weapons, which envisages an outright ban on the use of all nukes. It has, however, been potentially fatally undermined by a boycott by the nuclear powers. The US, Britain and France declared, cynically as critics saw it, that they preferred to stick with the never-ending NPT route to disarmament. "This initiative clearly disregards the realities of the international security environment," they said in a joint statement.

The ineffectiveness of current arms control and counter-proliferation efforts has helped to create an environment in which North Korea, allegedly using smuggled, Russian-designed ballistic missile engines, is rapidly advancing its nuclear ambitions with apparent impunity, at great risk to international stability.

Multilateral arms control failures also mean the Korean "solution" Trump talks about with increasing frequency – the use of preventive military action, notwithstanding its illegality under international law – could, if applied, spell the end of deterrence and the beginning of an unchecked global nuclear arms race.

https://www.theguardian.com/world/2017/sep/05/nuclear-armed-nations-brought-the-north-korea-crisis-on-themselves

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Arms Control Wonk (Washington, DC)

A Third War in Sixteen Years?

By Michael Krepon

September 3, 2017

At times like these, Biblical prophecy is called for. Instead, we get op-eds.

Donald Trump spirals downward. He has no other place to go. Due to circumstances comprehensible only in retrospect, he became president. The corners he has cut and the deals he has struck will be his undoing. He is temperamentally unsuited to be president and to have sole authority to launch a nuclear strike. In due course, he will be ushered out, the victimizer posing as ultimate victim. Bipartisan sighs of relief will accompany his departure. He will rally what remains of his base, until they, too, will eventually move on, disinterested in whatever shiny object he tries to sell.

The first order of business for American citizens during the Trump presidency is to do everything in our collective power to limit the damage he can do. Since the most harm could result from a preventive war to disarm North Korea of its nuclear weapons, this aspect of damage limitation must have the highest priority.

Kim Jong Un is doing his part to prompt another preventive war. As provocations go, overflying Japan with a ballistic missile and carrying out another nuclear test are almost, but not yet, chart-toppers. These actions warrant even greater economic penalties, especially from China and Russia, as well as other clarifications of the folly of this young Maximum Leader's current course. Tit-for-tat military rejoinders to his provocations also merit consideration — but only if they do not prompt conventional warfare and the use of nuclear weapons.

Along with nuclear deterrence, the other essential "pre-positioned" elements to deter North Korea are forward deployed military capabilities, theater missile defenses, sanctions and diplomacy backed by international law. The latter may seem quaint to the tough-minded, but it is an inconvenient fact that under international law, the only justification for a preventive war is if an adversary poses an imminent threat of attack.

In the case of North Korea, this construct is reversed: A first strike by North Korea's untested leader seems within the realm of possibility only if he feels threatened by imminent U.S. attack. Thus, Trump will not have international law on his side if he decides to authorize a preventive war, and when Washington acts as the world's most powerful rule breaker, U.S. leadership and alliances are badly eroded. When the two strongest nuclear-armed states engage in wars of choice and the blatant disregard for international borders, they reduce to rubble the two mainstays that have helped to keep the peace since World War II.

A second reason for restraint relates to the track record of the tough guys advocating another war: After the extended traumas of Afghanistan and Iraq, another U.S. military campaign must be nearly immaculate in its execution and almost immediate in North Korea's capitulation. Let those who predict this result after predicting a cakewalk and cheerleading the war in Iraq come forward and forthrightly say so. Yes, there is one significant difference between a preventive war against Kim Jong Un than against Saddam Hussein: the former most assuredly possesses nuclear weapons. Does this make another war more compelling or more devastating?

A third reason for restraint relates to the track record of a badly wounded great power that has lost its moorings after 9/11. A war with North Korea would be the third fought by the United States in just sixteen years. The first two continue without end. U.S. expeditionary forces have been through Hell and back, and yet war hawks, having been temporarily foiled by successful diplomacy to strictly limit Iran's bomb-making capacity, are busy setting the predicates for another war of choice.

Yes, the threat posed by Kim Jong Un and the North Korean nuclear program is very real. And yes, tougher measures against North Korea are needed. But what if sanctions do not succeed in forcing Kim Jong Un to capitulate and give up that which he holds most dear? Then what? Another war with heavy casualties will hand Beijing the keys to Asia and cause far wider ruptures in U.S. alliances in the Pacific and in Europe. America's treasury will go deeper into the red and its standing in the world will decline further and faster – even after victory on the Korean peninsula.

There is no justice or justification in another war of choice that results in the deaths of many thousands of allied and U.S. civilians and soldiers, as well as the deaths of countless innocents in North Korea. Worse, there is no justice or justification in another war of choice that results in even a single mushroom cloud.

The norm of not using nuclear weapons on battlefields has been extended for seven decades since Hiroshima and Nagasaki. This norm is the most important safety factor in a world of growing nuclear dangers. The reappearance of mushroom clouds on battlefields would be devastating enough; they could also prompt renewed nuclear testing by major and regional powers, as well as the shredding of what's left of the nuclear safety net now being cut by Vladimir Putin and Republicans on Capitol Hill. Is a seven decade-old norm to be broken because a country with

thousands of deliverable nuclear weapons has convinced itself that it cannot deter the use of one or more by North Korea?

The methods used by American Presidents to prevent the battlefield use of nuclear weapons by paranoid mass murderers like Josef Stalin and Mao Zedong can also be employed against the likes of Kim Jong Un. These methods included deterrence, but deterrence alone did not prevent wars or reduce nuclear dangers. Deterrence requires diplomacy to prevent mushroom clouds. This has succeeded before, and might succeed again. Direct diplomacy with Kim Jong Un also might fail, but it has to be tried.

Nuclear strategists who seek to "strengthen" deterrence by fine-tuning weapon effects and yields are living in an unreal world. Safety doesn't come from smaller mushroom clouds; it comes from no mushroom clouds. Not one pre-eminent strategic analyst has ever authored a convincing explanation of how two nuclear-armed states – having failed at diplomacy so badly that mushroom clouds have appeared — can succeed at controlling nuclear escalation. The surest way to achieve escalation control is to not use nuclear weapons on battlefields.

For a war of choice against North Korea to succeed, U.S. armed forces would need to prevent a single mushroom cloud on the battlefield. They would also need to prevent significant casualties. If the Pentagon cannot assure these results, then a third war since 9/11 would invite folly.

A wiser course would be to rely upon the instruments that have succeeded in preventing mushroom clouds since 1945: a strong military and alliances, deterrence, a purposeful military presence in the region, and active diplomacy. One of these key elements is now missing – direct U.S. diplomacy to reduce nuclear dangers with North Korea. But here's the rub: direct diplomacy is unlikely to eliminate the threat that Americans fear most. If Donald Trump cannot abide by a mutual deterrence relationship with North Korea, then for as long as he is in the White House and Kim Jong Un remains in power, the prospect of another war on the Korean peninsula lies before us.

http://www.armscontrolwonk.com/archive/1203816/a-third-war-in-sixteen-years/

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The Gulf Today (Sharjah, UAE)

Kazakhstan Embarks on Global Nuclear Non-Proliferation Journey

By Matovu Abdallah Twaha

September 5, 2017

At the end of August 2017, scientists, top government and non-government representatives – including all but the retired former US Secretary of State, John Kerry, those who participated in the P5+1 negotiations of the Iran nuclear deal – descended on Astana, the capital of Kazakhstan to witness a gigantic step in curtailing nuclear proliferation, though it is one of the earliest steps of a long journey.

It was Aug.29, the International Day against Nuclear Tests which was adopted by the UN in 2009, following a proposal mooted by Kazakhstan's President, Nursultan Nazarbayev.
The participants witnessed President Nazarbayev giving the Director General of the International Atomic Energy Agency (IAEA), Yukiya Amano, a symbolic key to the US$150m reserve bank for Low Enriched Uranium (LEU), the main item on the celebration, which is designed to discourage new countries from enriching nuclear fuel.

The facility is hosted by Kazakhstan on behalf of the IAEA.

It is at the site of the Ulba Metallurgical Plant in the Eastern area.
Therefore, the country held a five-day celebration full of a flurry of activity including hosting the 62nd Pugwash Conference on Science and World Affairs – an international movement that brings together world's greatest scientists to jointly address the threat of nuclear weapons on humankind.

The scientists from an array of organisations including the IAEA; the Comprehensive Nuclear-Test-Ban Treaty (CTBT); Pugwash, the Nuclear Threat Initiative (NTI), academicians, Parliamentarians for Nuclear Non-Proliferation and Disarmament (PNND), among others, worked around the clock to generate and discuss ideas – while the Kazkh leader walked the talk, right from the year when his country gained independence from the Union of Soviet Socialist Republics (USSR) in 1991.

"By hosting the IAEA LEU bank, Kazakhstan has made another contribution to strengthening the global non-proliferation regime," said Nazarbaev.

Though by the time it gained independence, Kazakhstan was the world's fourth power in nuclear arsenal, Narzabayev transformed it into the leader of global non-proliferation. He and his people witnessed how the Russians tested nuclear power as many as 450 times on Kazakhstani soil from the late 1940s – negatively affecting over 1.3 million people. "On this day, Aug.29, 1991, my Decree closed the world's largest Semipalatinsk nuclear test site. \
"Today, throughout the world, Aug.29 is celebrated as the International Day against Nuclear Tests. It is the efforts of Kazakhstan that have shown the way to other countries that have faced the problem of nuclear arsenal," said the President of Kazakhstan.

He thanked the "leadership of the IAEA and the donors of the Bank for their great contribution to this important project."

Among the voluntary funders of the $150m bank of 90 tonnes of LEU is the United Arab Emirates (UAE), which gave $10m, and its State Minister, Dr Maitha Salem Al Shamsi spoke on behalf of the donors during the D-day.

Other donors were: the Nuclear Threat Initiative $50m; the US at $49.5m; the European Union €25m, Kuwait $10m, and Norway $5m.

Despite the Kazakhstani leaders urging for the "urgency of developing nuclear power," the realty shows a big gap of commitment from other global nuclear powers to walk the talk.

This is what Nazarbayev calls "low level of trust between the main nuclear powers, which resulted in the lack of unity in the world community on the issue of global nuclear security." While featuring on the panel discussing "Future of Civilian Nuclear Energy and Internalisation of the Nuclear Fuel Cycle," an American Senior Fellow from the Centre for Strategic and International Studies, Prof. Sharon Squassoni, noted that there are traditional challenges which are not abating (referring to the US-Russian and regional political tensions across the world), there is an "addition of terrorism to the list."

The Secretary General of Pugwash Conferences on Science and World Affairs, Paolo Cotta-Ramussino, summarised what ought to be done. "Kazakhstan set an example to the world by categorically rejecting the possession of nuclear weapons and the continuation of their testing at Semipalatinsk. "Kazakhstan was also a leader in the establishment of Central Asia as a zone free of nuclear weapons.

"These are concrete actions that must be supported and other countries should follow their lead."

http://gulftoday.ae/portal/774dad43-8d73-45eb-9bcb-459554fcc232.aspx

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ASIA-PACIFIC

Yonhap News Agency (Seoul, South Korea)

U.S. to Continue Deployment of Defense Assets to Korea: Pacific Fleet Chief

By Lee Chi-dong

September 5, 2017

A top U.S. naval commander said Tuesday his country will keep sending formidable defense assets to the Korean Peninsula in combined deterrence and response to North Korea's "self-destructive" actions.

Adm. Scott Swift, who commands the U.S. Pacific Fleet, stressed that although South Koreans stand closest to the North's threats, they "do not face this aggressor alone."

He cited the North's continued provocations, including "ill-advised" ballistic missile launches and inflammatory warnings of nuclear war, highlighted by its sixth nuclear test Sunday.

Speaking at the International Seapower Symposium here, the admiral described the Kim Jong-un regime's choice as "irrationally self-destructive actions and behaviors that defy logic and explanation."

"We will continue to deploy carrier strike groups, expeditionary strike groups, AEGIS ships, the world's most capable submarine force and advanced aircraft like the F-35, P-8 and MH-60R to be prepared to respond decisively when called," he stressed. "Today, our platforms have longer reach, are more interconnected and possess greater lethality than what has ever been fielded before."

He added that his fleet has also seamlessly integrated operations with South Korean and Japanese navies for overwhelming ballistic missile defense and anti-submarine warfare.

He expressed confidence about the might of his unit in charge of defending the Indo-Asia-Pacific region.

"Let our potential adversaries take pause and note that the only naval force more powerful than the U.S. Pacific Fleet is the entirety of the United States Navy," he said.

Swift is scheduled to meet with South Korean Defense Minister Song Young-moo later in the day.

The minister told lawmakers Monday that South Korea has requested the U.S. dispatch nuclear-powered aircraft carriers, nuclear submarines and strategic bombers to Korea on a regular basis.

http://english.yonhapnews.co.kr/news/2017/09/05/0200000000AEN20170905003500315.html

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Bloomberg (New York, NY)

Trump and Moon Agree to Show Muscle After North Korea Nuke

By Shinhye Kang, Seyoon Kim and Erik Wasson

September 4, 2017

U.S. President Donald Trump agreed to support billions of dollars in new weapons sales to South Korea after North Korea’s largest nuclear test, while his ambassador to the United Nations said the U.S. would seek the strongest possible sanctions against Kim Jong Un’s regime.

Ambassador Nikki Haley said Monday at a meeting of the UN Security Council that Kim was "begging for war" after testing what he claimed was a hydrogen bomb. "Only the strongest sanctions will enable us to resolve this problem through diplomacy," she said.

Hours after Haley spoke, the Seoul-based Asia Business Daily reported that North Korea was preparing to launch an intercontinental ballistic missile before Saturday. In a phone conversation with South Korean President Moon Jae-In on Monday, Trump said he would support "in principle" the U.S. ally fitting its missiles with heavier warheads, boosting its deterrence against North Korea.

Trump and Moon "agreed to maximize pressure on North Korea using all means at their disposal," according to the White House statement. Trump "provided his conceptual approval" for South Korea to buy "many billions of dollars' worth of military weapons and equipment" from the U.S.

Haley said the U.S. would circulate new draft sanctions and wants the Security Council to vote on them Sept. 11. Those sanctions faced resistance from veto-wielding members China and Russia, with Vladimir Putin saying he opposed leveling more "useless and ineffective" sanctions on the North Koreans.

"They'll eat grass, but they won't abandon their program unless they feel secure," Putin told reporters while attending an emerging markets summit in Xiamen, China, which was hosted by Chinese counterpart Xi Jinping.

South Korea has detected "continued activities" related to North Korea missile tests in the aftermath of its sixth and most powerful nuclear detonation, according to a government official who asked not to be named in line with government policy. Meanwhile, the country's defense ministry declined to comment on the Asia Business Daily report saying the isolated state was observed moving an ICBM to a launch site, and there's a high chance of a launch before the Sept. 9 national foundation day.

The standoff between North Korea and the U.S. has become the most dangerous foreign crisis facing Trump, eclipsing continued military operations in the Middle East and Afghanistan.

Chang Kyung-soo, acting chief of the Defense Ministry's policy planning office, told lawmakers in Seoul on Monday that North Korea was readying a missile firing, but didn't give a timeframe. The Yonhap News Agency cited the South Korea's spy agency as saying there is a chance Pyongyang could fire an ICBM into the Pacific Ocean. North Korea has previously threatened to launch missiles toward Guam.

South Korea's Defense Ministry will review "various possible options" to find a "realistic" solution to North Korea's threats, spokesman Moon Sang-gyun told reporters in Seoul on Tuesday. He was clarifying Defense Minister Song Young-moo's comment yesterday that redeployment of U.S. tactical nuclear weapons could be an option.

The nation's navy also began live-fire drills involving 20 vessels -- exercises that will continue through Saturday,

South Korea has removed the final administrative hurdle for the full deployment of a U.S. missile defense system known as Thaad, which China views as a threat to the region's "strategic equilibrium."

South Korea's military also conducted a live-fire drill on Monday, firing a surface-to-surface ballistic missile and air-to-ground rocket into the sea between the Korean peninsula and Japan, with North Korea's nuclear test site the virtual target.

Haley reinforced Trump's threat on Twitter to cut off trade with nations that do business with North Korea, though many observers say that would be an unlikely step. While the U.S. has often threatened a China trade war, Trump is yet to follow through, in part given the risk that would create for his own economy.

China is North Korea's main ally and trading partner. It is also the U.S.'s biggest trading partner. Foreign Ministry spokesman Geng Shuang said Trump's trade comments were "neither objective nor fair."

"What is definitely unacceptable to us is a situation in which on the one hand we work to resolve this issue peacefully but on the other hand our own interests are subject to sanctions and jeopardized," Geng said at a regular briefing in Beijing.

Trump, who reportedly threatened over the weekend to pull out of the U.S.-South Korea trade agreement, had taken aim on Sunday at President Moon's administration. South Korea is finding its "talk of appeasement with North Korea will not work," he said on Twitter.

In response, Moon's office said war shouldn't be repeated and that South Korea and its allies "will pursue the denuclearization of the Korean peninsula through peace."

Moon took power in May pledging to seek talks with Kim's regime. He initially opposed the early deployment of Thaad though has shifted in recent months as North Korea advanced its push for an ICBM that could strike the U.S.

The tensions between the allies comes as Trump's administration looks to convince China and Russia to support stronger sanctions against North Korea. While Trump didn't rule out an attack on the regime when asked by a reporter on Sunday, the focus of his tweets and remarks by Treasury Secretary Steven Mnuchin were on sanctions. China and Russia oppose using military force against Kim.

Moon said in a phone call with Russian President Vladimir Putin that it is time for the UN to "seriously consider to fundamentally block North Korea's foreign currency sources by cutting off crude oil supplies and banning its overseas labor," according to a text message Monday from Moon's office.

Sunday's test, North Korea's first since Trump took office, was a "perfect success" and confirmed the precision and technology of the bomb, the regime said. Energy from the underground explosion was about six times stronger than the last test a year ago, South Korea's weather agency said.

https://www.bloomberg.com/news/articles/2017-09-04/south-korea-paves-way-for-missile-shield-after-nuclear-explosion

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The Japan Times (Tokyo, Japan)

North Korean Nuke Test Put at 160 Kilotons as Ishiba Urges Debate on Deploying U.S. Atomic Bombs

Author Not Attributed

September 6, 2017

The government on Wednesday again upgraded its estimated size of North Korea's latest nuclear test to a yield of around 160 kilotons — more than 10 times the size of the Hiroshima bomb — as a

leading member of the ruling Liberal Democratic Party said the country should debate the deploying of U.S. atomic weapons on Japanese soil.

Defense Minister Itsunori Onodera called Sunday's nuclear test "vastly greater" than previous North Korean nuclear tests.

"(North Korea) is evolving not just their ballistic missiles but also their nuclear technology," he added.

"We cannot rule out the possibility that this was a hydrogen bomb test," Onodera said.

Onodera's remarks came as LDP heavyweight and former Defense Minister Shigeru Ishiba weighed in on the controversial and emotional issue of Japan hosting U.S. atomic weapons later in the day, saying that the possibility should be discussed in light of the North's growing nuclear threat.

Ishiba said doing so could help bolster the deterrent power of the Japan-U.S. alliance.

Japan relies on the U.S. "nuclear umbrella" for protection. In the wake of the atomic bombings of Hiroshima and Nagasaki during World War II, the country has upheld since 1967 its so-called three non-nuclear principles of not producing, possessing or allowing nuclear weapons on Japanese territory.

However, Ishiba, speaking on a television program, expressed his opposition to the idea of Japan possessing its own nuclear arsenal.

"If Japan — the only country to have suffered atomic bombings in war — arms itself with nuclear weapons, I think it means any other country should be allowed to have them," he said.

Ishiba called the issue an "emotional" one, noting that it could spark public outcry but questioned whether any debate should be dismissed out of hand.

"Is it really right for us to say that we will seek the protection of U.S. nuclear weapons, but we don't want them inside our country?" he asked.

"Not possessing, producing and bringing in nuclear weapons, and not even discussing (this matter) — is that really OK?" he added.

The Japanese government is stepping up efforts to beef up its defense capabilities amid North Korea's nuclear and missile advances.

Pyongyang has labeled Sunday's nuclear test a detonation of an advanced hydrogen bomb that can be mounted on an intercontinental ballistic missile. The test prompted an emergency meeting Monday of the United Nations Security Council in New York.

Japan's latest estimate of that test's yield far exceeded the 50-to-100 kilotons indicated by U.N. political affairs chief Jeffrey Feltman at the U.N. Security Council meeting.

Onodera said the new estimate was based on definitive seismic data from the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO). The group had informed Tokyo of its observation of a magnitude-6.1 quake during Sunday's nuclear test, up from earlier provisional estimates of 5.8 and 6.0.

The government had initially put the yield at 70 kilotons, which is still far greater than the estimated yields of North Korea's five previous nuclear tests. Tokyo had later raised the estimate to some 120 kilotons.

The atomic bomb dropped by the U.S. on Hiroshima on Aug. 6, 1945, had a yield of 16 kilotons and the one dropped on Nagasaki three days later had a yield of 21 kilotons. One kiloton has the explosive force of 1,000 tons of TNT.

While bombs like those dropped on Hiroshima and Nagasaki use atomic fission to release energy, hydrogen bombs use an initial fission reaction to force radioactive isotopes of hydrogen to fuse together, creating a far more destructive force.

Earlier Wednesday, Onodera held telephone talks with U.S. Defense Secretary James Mattis, with both agreeing to step up "visible pressure" on North Korea, the Defense Ministry said.

Speaking to reporters, Onodera said he told Mattis that Sunday's test "was far greater (in scale) than previous nuclear tests and presents a new, more grave and pressing threat to our country's security." Mattis, he said, expressed the same view.

Onodera quoted Mattis as saying the United States will defend Japan, citing in particular the deterrence offered by the U.S. "nuclear umbrella."

He also said Mattis had expressed his intention to actively cooperate on the Self-Defense Forces' acquisition of the land-based Aegis Ashore missile-defense system.

In their roughly 20-minute conversation, the two defense chiefs also affirmed they will coordinate with South Korea on the North Korean crisis.

The pair had made similar commitments in their last phone call on Aug. 31, which followed North Korea's launch of an intermediate-range missile over Hokkaido and into the Pacific Ocean.

After his call with Mattis, Onodera met Adm. Scott Swift, the commander of the U.S. Pacific Fleet, at the Defense Ministry to confirm their cooperation in responding to security issues.

Meanwhile, Senior defense officials from Japan, the United States and South Korea held a videoconference later in the day to discuss their response to North Korea.

https://www.japantimes.co.jp/news/2017/09/06/national/north-korean-nuke-test-put-160-kilotons-ishiba-urges-debate-deploying-u-s-atomic-bombs/#.WbC2YGSxRTZ

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The Hill (Washington, DC)

South Korea: US Missile Defense System to Be Fully Installed Thursday

By Rebecca Kheel

September 6, 2017

South Korea's defense ministry says the remaining launchers for a U.S. missile defense system deployed to the country will be installed Thursday, in the wake of North Korea's latest nuclear test.

In addition to the launchers, the ministry said that construction and related equipment will also be installed, according to South Korean news agency Yonhap.

The system, known as THAAD, was first deployed to a former golf course in the rural southern area of Seongju in April.

A THAAD battery has a maximum six truck-mounted launchers that can fire up to 48 interceptor missiles. But it was deployed earlier this year with just two launchers.

South Korean President Moon Jae-in, who during his presidential campaign vowed to review the deployment, halted the installation of the remaining four launchers in June pending an environmental review.

Residents near the deployment site have voiced concerns that the system's powerful radars could have adverse health effects, a claim U.S. and South Korean defense officials have said is baseless.

China, fearing the radars could be used to monitor it, is also vehemently opposed to the deployment and has exerted pressure on Seoul to remove the system, including encouraging boycotts of South Korean businesses and entertainment.

U.S. officials have said the system is purely defensive and meant as a counter only to North Korea, not China.

In its Wednesday statement, the South Korean defense ministry described the deployment of the four remaining launchers as "provisional" pending more environmental review.

"There is no change in the government's position to make the final decision on whether the THAAD system will be deployed (in South Korea) after carrying out the general environmental impact assessment of the entire site thoroughly and fairly," the ministry said in a statement, according to Yonhap.

On Sunday, North Korea carried out its sixth nuclear test — its most powerful to date — claiming it successfully tested a hydrogen bomb that can be mounted onto an intercontinental ballistic missile.

The test drew widespread international condemnation, including from allies of North Korea such as China and Russia.

South Korea's defense ministry had said Monday the remaining THAAD launchers would be installed quickly to respond to "North Korea's advancing nuclear and missile threats."

http://thehill.com/policy/defense/349429-us-missile-defense-system-to-be-fully-installed-thursday-south-korea-says

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EUROPE/RUSSIA

Business Insider (New York, NY)

Mattis Reportedly Threatened Sweden With Retaliation Over Signing a Nuclear-Weapons Ban

By Christopher Woody

September 5, 2017

US Defense Secretary Jim Mattis reportedly warned Sweden of severe consequences if the country followed through on signing a UN treaty banning nuclear weapons.

The Scandinavian country is one of 122 states backing the treaty, and Stockholm also recently signed a statement of intent to increase military cooperation with the US.

But a letter from Mattis reportedly warned Sweden's defense minister, Peter Hultqvist, that signing on to the treaty could affect US-Sweden military cooperation as well as US military support in the event of war.

Mattis' letter also suggested signing the treaty could have an impact on the country's ties to NATO, of which it is a Gold Card program member, meaning it has some privileges within the defense alliance even though it is not a full member.

Sweden's Gold Card program status faces renewal in October, and Mattis warned his Swedish counterpart that signing the treaty would foreclose the option of joining NATO, according to Defense News.

Swedish newspaper Dagens Nyheterin also cited a source as being concerned the threat could apply to US-Sweden defense-industry cooperation, including deals of which Saab is a part. (The Swedish government recently completed a cross-party deal to boost domestic defense spending.)

Swedish Foreign Minister Margot Wallström has said the country intends to sign on to the treaty, though Hultqvist is reportedly against doing so.

The US, which adheres to a policy of nuclear deterrence, has criticized the nuclear-weapons ban, but Mattis' letter is seen as an unusual step in bilateral relations, particularly between the US and Sweden.

A Pentagon spokesman told Defense News that while the US "values its defense relationship with Sweden," it has discouraged countries from signing on to the ban, which has measures that "could potentially affect our ability to cooperate with parties to the treaty on issues of mutual interest."

"The government's attitude towards these weapons is well known since long," Wallström told local news outlet Svenska Dagbladet.

Jim Townsend, who was deputy assistant secretary of defense for European and NATO policy for eight years, told Defense News that pressuring Sweden with threats about defense cooperation is a flawed approach.

"They are a close friend in a dangerous neighborhood, and so threatening that important relationship lacks some credibility," said Townsend, who is now with the Center for New American Security. "Do the Swedes really think we would downgrade our relationship to punish them for signing a nuclear ban treaty?"

Townsend also stressed caution when using these tactics in important bilateral relationships. "The cause had better be worth the risk" to US national security and to relations between the two countries, he told Defense News.

Sweden and its neighbors, Finland and Norway, maintain military neutrality, but they work closely with the US and allies in Europe on military matters. Those relationships have grown in importance amid escalating tensions between Russia and countries in Europe.

Norway, which is looking to boost its own border defenses, has played host to US military equipment for decades and recently welcomed an extended deployment of US Marines.

It's the first time a foreign force had been posted on Norwegian soil since World War II, which has irked Russia.

During an appearance with Finnish President Sauli Niinistro in late August, Trump falsely claimed that Helsinki was planning to buy F/A-18 fighter aircraft from US defense firm Boeing.

While Finland is looking to buy new fighter aircraft, it has not made a deal with Boeing to do so. Trump's comments prompted a denial from Niinistro afterward.

"It seems that on the sale side, past decisions and hopes about future decisions have mixed," he said.

http://www.businessinsider.com/mattis-threatened-sweden-over-a-nuclear-weapons-ban-treaty-2017-9

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TASS (Moscow, Russia)

Russian Diplomat Says NATO Officials' Statements Violate Non-Proliferation Treaty

Author Not Attributed

September 5, 2017

Earlier, NATO's Deputy Secretary-General claimed that Russia was building up its nuclear potential

NATO's speculations on nuclear issues are tantamount to a violation of the Non-Proliferation Treaty, Russian Deputy Foreign Minister Aleksey Meshkov said on Tuesday in the wake of the alliance's charges Russia was building up its nuclear potential.

"Any speculations by NATO officials over nuclear affairs are by and large a violation of the Non-Proliferation Treaty," he said. "The treaty does not regard military alliances as nuclear powers."

"It is nuclear powers that are expected to conduct negotiations and have contacts over the problem of restricting nuclear potentials," Meshkov said.

Earlier, NATO's Deputy Secretary-General Rose Gottemoeller claimed that Russia was building up its nuclear potential. Also, Suddeutsche Zeitung said the alliance was considering the possibility of taking nuclear deterrence measures in retaliation for Moscow's alleged violation of the INF treaty.

http://tass.com/politics/963852

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The National Interest (Washington, DC)

Russia vs. NATO: Who Would Win in a War?

By Kris Osborn

September 5, 2017

One of the limited options cited in the study could include taking huge amounts of time to mobilize and deploy a massive counterattack force which would likely result in a drawn-out, deadly battle. Another possibility would be to threaten a nuclear option, a scenario which seems unlikely if not completely unrealistic in light of the U.S. strategy to decrease nuclear arsenals and discourage the prospect of using nuclear weapons, the study finds.

Current tensions between Russia and NATO are leading many to carefully assess this question and examine the current state of weaponry and technological sophistication of the Russian military -- with a mind to better understanding the extent of the kinds of threats they may pose.

Naturally, Russia's military maneuvers and annexation of the Crimean peninsula have many Pentagon analysts likely wondering about and assessing the pace of Russia's current military modernization and the relative condition of the former Cold War military giant's forces, platforms and weaponry.

Russia has clearly postured itself in response to NATO as though it can counter-balance or deter the alliance, however some examinations of Russia's current military reveals questions about its current ability to pose a real challenge to NATO in a prolonged, all-out military engagement.

Nevertheless, Russia continues to make military advances and many Pentagon experts and analysts have expressed concern about NATO's force posture in Eastern Europe regarding whether it is significant enough to deter Russia from a possible invasion of Eastern Europe.

Also, Russia's economic pressures have not slowed the countries' commitment to rapid military modernization and the increase of defense budgets, despite the fact that the country's military is a fraction of what it was during the height of the Cold War in the 1980s.

While the former Cold War giant's territories and outer most borders are sizeably less than they were in the 1980s, Russia's conventional land, air and sea forces are trying to expand quickly, transition into the higher-tech information age and steadily pursue next generation platforms.

Russia's conventional and nuclear arsenal is a small piece of what it was during the Cold War, yet the country is pursuing a new class of air-independent submarines, a T-50 stealth fighter jet, next-generation missiles and high-tech gear for individual ground soldiers.

The National Interest [3] has recently published a number of reports about the technological progress now being made by Russian military developers. The various write-ups include reporting on new Russian anti-satellite weapons, T-14 Armata tanks, air defenses and early plans for a hypersonic, 6th-generation fighter jet, among other things. Russia is unambiguously emphasizing military modernization and making substantial progress, the reports from The National Interest and other outlets indicate.

For instance, Russia has apparently conducted a successful test launch of its Nudol [4] direct ascent anti-satellite missile, according to The National Interest.

"This is the second test of the new weapon, which is capable of destroying satellites in space. The weapon was apparently launched from the Plesetsk test launch facility north of Moscow," the report from The National Interest writes.

In addition, The National Interests' Dave Majumdar reported that Russian Airborne Forces plan six armored companies equipped with newly modified T-72B3M [5] tanks. Over the next two years, those six companies will be expanded to battalion strength, the report states.

Russia is also reportedly developing a so-called "Terminator 3" tank support fighting vehicle.

During the Cold War, the Russian defense budget amounted to nearly half of the country's overall expenditures.

Now, the countries' military spending draws upon a smaller percentage of its national expenditure. However, despite these huge percentage differences compared to the 1980s, the Russian defense budget is climbing again. From 2006 to 2009, the Russian defense budget jumped from $25 billion up to $50 billion according to Business Insider – and the 2013 defense budget is listed elsewhere at $90 billion.

Overall, the Russian conventional military during the Cold War – in terms of sheer size – was likely five times what it is today.

The Russian military had roughly 766,000 active front line personnel in 2013 and as many as 2.4 million reserve forces, according to globalfirepower.com [6]. During the Cold War, the Russian Army had as many as three to four million members.

By the same 2013 assessment, the Russian military is listed as having more than 3,000 aircraft and 973 helicopters. On the ground, Globalfirepower.com says Russia has 15-thousand tanks, 27,000 armored fighting vehicles and nearly 6,000 self-propelled guns for artillery. While the Russian military may not have a conventional force the sheer size of its Cold War force, they have made efforts to both modernized and maintain portions of their mechanized weaponry and platforms.

The Russian T-72 tank, for example, has been upgraded numerous times since its initial construction in the 1970s.

On the overall Naval front, Globalfirepower.com assesses the Russian Navy as having 352 ships, including one aircraft carrier, 13 destroyers and 63 submarines. The Black Sea is a strategically significant area for Russia in terms of economic and geopolitical considerations as it helps ensure access to the Mediterranean.

Analysts have also said that the Russian military made huge amounts of conventional and nuclear weapons in the 80s, ranging from rockets and cruise missiles to very effective air defenses.

In fact, the Russian built S-300 and S-400 anti-aircraft air defenses, if maintained and modernized, are said to be particularly effective, experts have said.

Citing Russian news reports, the National Interest reported that the Russians are now testing a new, S-500 air defense systems able to reportedly reach targets up to 125 miles.

In the air, the Russian have maintained their 1980s built Su-27 fighter jets, which have been postured throughout strategic areas by the Russian military.

Often compared to the U.S. Air Force's F-15 Eagle fighter, the Su-27 is a maneuverable twin engine fighter built in the 1980s and primarily configured for air superiority missions.

Rand Wargame

While many experts maintain that NATO's size, fire-power, air supremacy and technology would ultimately prevail in a substantial engagement with Russia, that does not necessarily negate findings from a Rand study released more than a year ago explaining that NATO would be put in a terrible predicament should Russia invade the Baltic states.

NATO force structure in Eastern Europe in recent years would be unable to withstand a Russian invasion into neighboring Latvia, Lithuania and Estonia, the Rand study has concluded.

After conducting an exhaustive series of wargames wherein "red" (Russian) and "blue" (NATO) forces engaged in a wide range of war scenarios over the Baltic states, a Rand Corporation study called "Reinforcing Deterrence on NATO's Eastern Flank" determined that a successful NATO defense of the region would require a much larger air-ground force than what is currently deployed.

In particular, the study calls for a NATO strategy similar to the Cold War era's "AirLand Battle" doctrine from the 1980s. During this time, the U.S. Army stationed at least several hundred thousand troops in Europe as a strategy to deter a potential Russian invasion. Officials with U.S. Army Europe tell Scout Warrior that there are currenty 30,000 U.S. Army soldiers in Europe.

The Rand study maintains that, without a deterrent the size of at least seven brigades, fires and air support protecting Eastern Europe, that Russia cold overrun the Baltic states as quickly as in 60 hours.

"As currently postured, NATO cannot successfully defend the territory of its most exposed members. Across multiple games using a wide range of expert participants in and out of uniform playing both sides, the longest it has taken Russian forces to reach the outskirts of the Estonian and/or Latvian capitals of Tallinn and Riga, respectively, is 60 hours. Such a rapid defeat would leave NATO with a limited number of options," the study writes.

"AirLand" Battle was a strategic warfighting concept followed by U.S. and allied forces during the Cold War which, among other things, relied upon precise coordination between a large maneuvering mechanized ground force and attack aircraft overhead. As part of the approach, air

attacks would seek to weaken enemy assets supporting front line enemy troops by bombing supply elements in the rear. As part of the air-ground integration, large conventional ground forces could then more easily advance through defended enemy front line areas.

A rapid assault on the Baltic region would leave NATO with few attractive options, including a massive risky counterattack, threatening a nuclear weapons option or simply allowing the Russian to annex the countries.

One of the limited options cited in the study could include taking huge amounts of time to mobilize and deploy a massive counterattack force which would likely result in a drawn-out, deadly battle. Another possibility would be to threaten a nuclear option, a scenario which seems unlikely if not completely unrealistic in light of the U.S. strategy to decrease nuclear arsenals and discourage the prospect of using nuclear weapons, the study finds.

A third and final option, the report mentions, would simply be to concede the Baltic states and immerse the alliance into a much more intense Cold War posture. Such an option would naturally not be welcomed by many of the residents of these states and would, without question, leave the NATO alliance weakened if not partially fractured.

The study spells out exactly what its wargames determined would be necessary as a credible, effective deterrent.

"Gaming indicates that a force of about seven brigades, including three heavy armored brigades—adequately supported by airpower, land-based fires, and other enablers on the ground and ready to fight at the onset of hostilities—could suffice to prevent the rapid overrun of the Baltic states," the study writes.

During the various scenarios explored for the wargame, its participants concluded that NATO resistance would be overrun quickly in the absence of a larger mechanized defensive force posture.

"The absence of short-range air defenses in the U.S. units, and the minimal defenses in the other NATO units, meant that many of these attacks encountered resistance only from NATO combat air patrols, which were overwhelmed by sheer numbers. The result was heavy losses to several Blue (NATO) battalions and the disruption of the counterattack," the study states.

Latvia, Lithuania and Estonia could be likely Russian targets because all three countries are in close proximity to Russia and spent many years as part of the former Soviet Union, the study maintains.

"Also like Ukraine, Estonia and Latvia are home to sizable ethnic Russian populations that have been at best unevenly integrated into the two countries' post-independence political and social mainstreams and that give Russia a self-justification for meddling in Estonian and Latvian affairs," the study explains.

The Rand study maintained that, while expensive, adding brigades would be a worthy effort for NATO.

Buying three brand-new ABCTs and adding them to the U.S. Army would not be inexpensive—the up-front costs for all the equipment for the brigades and associated artillery, air defense, and other enabling units runs on the order of $13 billion. However, much of that gear—especially the expensive Abrams tanks and Bradley fighting vehicles—already exists," the study says.

The actual NATO troop presence in Eastern Europe is something that is still under consideration and subject to change in this new administration. For quite some time, NATO and the US have been considering adding more troops to the Eastern flank as a way to further deter Russia.

The Pentagon's European Reassurance Initiative, introduced last year, calls for additional funds, forces and force rotations through Europe in coming years, it is unclear what the force posture will ultimately be.

At the same time, the Pentagon's $3.4 Billion ERI request does call for an increased force presence in Europe as well as "fires," "pre-positioned stocks" and "headquarters" support for NATO forces.

Officials with U.S. Army Europe tell Scout Warrior that more solidarity exercises with NATO allies in Europe are also on the horizon, and that more manpower could also be on the way.

For example, NATO conducted Swift Response 16 from May 27 through June 26 of last year in Poland and Germany; it included more than 5,000 soldiers and airmen from the United States, Belgium, France, Germany, Great Britain, Italy, the Netherlands, Poland, Portugal and Spain.

http://nationalinterest.org/blog/the-buzz/russia-vs-nato-who-would-win-war-22167

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MIDDLE EAST

Foreign Policy (Washington, DC)

The Iran Deal is Keeping the Middle East From Going Nuclear. Why Does Trump Want to Blow It Up?

By Richard Nephew, Ilan Goldenberg

September 1, 2017

Few international agreements are as important to U.S. national security as the Joint Comprehensive Plan of Action (JCPOA), also known as the Iran nuclear deal. The JCPOA puts a lid on Iran's nuclear program and subjects it to intrusive inspections designed to ensure that Tehran cannot cheat. For at least the next decade, the deal avoids the twin dangers of an Iranian nuclear bomb or a major war in the Middle East to prevent that development.

Yet it is no secret that President Donald Trump hates the agreement, and there is an awful lot of strategizing underway by outside critics to develop a compelling rationale to help the administration ditch the deal. Some deal opponents have put forth a supposed approach, which argues that Trump should not recertify that Iran is complying with the agreement but not immediately reimpose nuclear-related sanctions. Instead, the administration should impose maximum pressure on the Iranian regime via massive non-nuclear sanctions, including on entire sectors of the Iranian economy. The ostensible goal is to enforce the JCPOA and push back against Iran's nefarious behavior, but the real intent seems to be to collapse the deal or bait Iran into abandoning it. Other deal skeptics are more transparent about their intentions. Most recently, former U.S. Ambassador to the U.N. John Bolton has published an undelivered presidential memo outlining an explicit roadmap for ridding the international community of the agreement.

To be sure, the Iran deal is imperfect and efforts should be undertaken to address its shortcomings. But if Trump follows the recommendations of these deal critics one thing is clear: It will put the United States in a much weaker position with less leverage to negotiate a better deal. It will also produce a higher likelihood that, over time, this decision leads to either a nuclear-armed or a direct military confrontation between Iran and the United States.

The good news is that a number of Iran hardliners, including former National Security Council member Derek Harvey, former NSC Senior Director for Intelligence Programs Ezra Cohen-Watnick, and most importantly former White House Chief Strategist Steve Bannon, have recently left the White House. The bad news is that one relentless anti-deal hawk remains: Trump. In October, he will have to decide whether to keep certifying Iranian compliance with the terms of the JCPOA, something all but certain to be justified on the basis of the facts of Iranian nuclear activities. His decision will mark a vital turning point for U.S. relations with much of the rest of the world and the course of international nuclear nonproliferation efforts more generally.

Of the various proposals on the table for walking away from the JCPOA, Bolton's is the most refreshing, both in its honesty and in its recognition of the core problem in leaving the deal: the absence of a coherent narrative for pursuing such a course and likely dearth of international cooperation in dealing with the aftermath. Bolton's memorandum flows from this conclusion, emphasizing at the outset, "U.S. leadership here is critical, especially through a diplomatic and public education effort to explain a decision not to certify and to abrogate the JCPOA. Like any global campaign, it must be persuasive, thorough, and accurate." Bolton implicitly recognizes in setting forth the strategy he suggests that the United States would be fighting an uphill battle to convince the rest of the international community that walking away from the JCPOA is sensible or necessary. It is not coincidental that Bolton recommends that the first phase of engagement and consultations with partners should start with the administration telling them, "we are going to abrogate the deal based on outright violations and other unacceptable Iranian behavior," and only thereafter to "seek [partner] input." Bolton knows -— as do, surely, all those monitoring the JCPOA — that to seek input before walking away from the JCPOA is to invite only pleas to stick with the deal and to stop rocking the boat.

Although Bolton is direct in his entreaties to the Trump administration, his proposed strategy is no less flawed than the others advocated by JCPOA skeptics. It takes as a given that other countries (and, even failing that, their companies) will follow the U.S. lead wherever it goes because of the awesome power of U.S. sanctions and strategic judgment. Bolton argues that by presenting a clear picture of the failings of the JCPOA as well as the nefarious nature of Iranian policy more generally, states will once again fall in line to cooperate with a U.S.-led sanctions effort against Iran. In fact, nowhere in his memo does he actually lay out one example of how Iran has violated the JCPOA. And there is good reason for that. Iran is not in breach of the agreement. Instead, his argument rests on the twin assumptions that other countries are ignorant of the fact that the JCPOA permits Iran to retain enrichment or that Iran supports groups like Hezbollah, and that if they still don't care, the United States can force their cooperation and assistance in pursuing its policy initiatives with Iran.

In this, Bolton misses a core attribute of the sanctions strategy enlisted by the George W. Bush administration after he left his post at the United Nations in 2006: to combine an effort at sanctions with the promise of a diplomatic outcome. This dual-track strategy, which the Obama administration later expanded upon and accelerated, created a combination of push and pull factors that convinced countries that the United States had a plan to secure the peaceful resolution of the nuclear problem. It was this strategy that made possible countries' decisions to restrict their oil imports from Iran or to cooperate with Treasury Department investigations of Iranian finances. And U.S. efforts to impose sanctions against Iran were calibrated with an earnest effort to avoid damaging the national economies of U.S. partners (as with the oil reduction sanctions from 2012 to 2013, phased in execution to avoid jarring oil markets). Bolton suggests instead soliciting of suggestions for new sanctions after the United States walks away from the JCPOA, and only rhetorical efforts to restart talks. In fact, this might be the most surprising admission of all in Bolton's memorandum: He does not see his own strategy resulting in a new agreement, agreeing

with JCPOA advocates that "Iran is not likely to seek further negotiations once the JCPOA is abrogated."

In truth, once the United States has embarked on the path away from the JCPOA — either forthrightly as Bolton suggests or duplicitously as others do — the United States is likely to find that the time of snapping its fingers and deriving international cooperation is long since past. Instead, countries and companies are likely to react depending on a combination of interests that may militate against a fraction of the coercive power of the 2010-2013 sanctions campaign being recapitulated. Some will doubtless cooperate. There are many foreign companies that are dependent on their access to the U.S. market and will be compelled to abandon any interests in Iran or those doing business with Iran. Likewise, there are some governments whose national interests demand close coordination with the United States. Japan and South Korea, for example, are likely to go along with renewed U.S. sanctions against Iran, even if only tepidly, out of fear of Trump administration abandonment in the face of the threat from North Korea.

Other countries and companies will choose a different course. Some may be outright hostile to a U.S. decision to sabotage the JCPOA. China, for example, was difficult for the Obama administration to chivvy along on Iran sanctions because of the country's sense of its own national interests in the region as well as its resistance to being directed by the United States. China cooperated with U.S. sanctions, but on its terms and behind the scenes. In an environment in which the United States is no longer seen as a responsible global player and in which tariffs and trade wars are threatened casually, there is little incentive for China to cooperate on Iran sanctions. At best, the United States may be able to convince China to trade areas of interest in a transactional foreign policy, but what would be worth exchanging with China in order to enlist its sanctions support?

Bolton's dismissive attitude toward China notwithstanding, the Chinese matter incredibly in a sanctions effort toward Iran. China alone purchases anywhere from 20 to 30 percent of Iranian oil and a Chinese decision to refuse cooperation could encourage others to similarly risk American reprisals. Sanctions fatigue will already be a real threat given the unnecessary nature of this renewed crisis. China standing on the margins will magnify this problem.

Of course, this assumes that the United States has the luxury of European partnership in the endeavor. All of those arguing against preserving the status quo may believe that, no matter what, the European Union and the United States will stand shoulder to shoulder in confronting Iran again, even if European governments do not presently support walking away from the JCPOA.

Unfortunately, this cannot be assumed.

First and foremost, the EU is itself hardly a coherent bloc on the Iran front. At various times during the main years of sanctions, the United States had to work with those in support of sanctions to convince the others that sanctions had a diplomatic rationale and a chance of success. This would obviously be gone in the event of JCPOA abrogation. If the EU cannot unite to support the adoption of sanctions, then the sanctions effort will be deprived of the benefits of bloc politics. As one of us has written about separately, part of the power of the EU has been its ability to enlist support for tough measures by burden balancing among Instead, the EU is likely to endorse only a least common denominator approach to sanctions, if that. And, without cohesion, beggar-thy-neighbor politics would instead result, in which no EU government is prepared to accept economic costs not accepted in some fashion by another (especially if China sits out).

Moreover, European governments will face a domestic cost for cooperating with the United States. Trump is deeply unpopular across Europe creating political incentives for politicians in democratic states to rail against him. And in Europe the JCPOA is overwhelmingly popular. It becomes a lot

harder to coax cooperation out of your friends when every request comes with a domestic political cost instead of a benefit.

This is not to say that some companies and banks might not go along with the U.S. sanctions push. As noted earlier, there will be some with a powerful incentive to do so. But, the result will be far more haphazard and catch-as-can than strategic. This is even more likely in a situation where European governments decide — either en masse or individually — to contest new U.S. sanctions at the World Trade Organization or through bloc or national blocking legislation on their companies. This is no mere fantasy: In 1997, the Clinton administration was convinced this was a real threat over Iran sanctions, and from 2001 to 2009, the Bush administration studiously avoided this risk through its own sanctions measures.

From some, this conclusion may come as good news, suggesting that though the United States might itself be isolated in walking away from the JCPOA, Iran, the EU, and other countries might preserve it through their own actions. The head of the Atomic Energy Organization of Iran, Ali Salehi, seemed to recommend this course of action recently, noting that Iran would comply with its obligations even if the United States withdrew so long as Europe remains party to But, though the United States should be cautious in its expectation that foreign partners will sign on to any adventure it suggest with regard to Iran sanctions, Iran would soon find that partial cooperation with U.S. sanctions is deleterious to its own economic interests. Even if European governments resist joining the United States, some companies would join. A chilling effect from either abrogation or an unwarranted decision to no longer certify Iranian compliance would limit Iran's economic opportunities and create political pressure inside of Tehran to withdraw as well. Iran would demand that the EU force its companies to comply with their contracts and the intent of the JCPOA, but there is no legal recourse available in EU for governments to make this work.

Half of Europe, China, Russia, and a few other countries simply cannot deliver enough sanctions relief benefits to make up for the U.S. secondary sanctions threat — even if waivers remain legally in place — to keep the Iranian satisfied with the tradeoff implicit in the JCPOA. Moreover, if Trump very publicly walks away from the agreement, there will be overwhelming domestic political pressure on President Iranian President Hassan Rouhani and his allies to respond. The likely result of being placed in this situation is that, rather than hunker down and accept its place, Iran would instead match provocations with the United States and restart its suspended nuclear activities.

Fortunately, Bolton and others have an answer to that concern, implicit in their shared assumptions about Iranian responses and the unacceptability of any agreement including anything less than total prohibition of Iranian nuclear fuel cycle activities and unfettered U.S. access throughout the country: "U.S. support for the democratic Iranian opposition," which we can read more directly as "regime change." And if that does not work — and it likely won't — Bolton has a long track record of advocating for American or Israeli military action.

It is the height of irresponsibility for the Trump administration to even be considering walking away from the JCPOA while North Korean missiles are zipping over the heads of U.S. allies and a wealth of other national security problems remains unchecked. Far from being a necessary component of managing those problems (as some Iran deal skeptics claim), walking away from the JCPOA or convincing Iran to do so will only magnify the problems facing the United States in the Middle East and beyond. We should take comfort for how hard JCPOA opponents are laboring, as they are pushing against common sense and good policy, and hope that it is a sign that this White House will listen to its adults again.

http://foreignpolicy.com/2017/09/01/the-iran-deal-is-keeping-the-middle-east-from-going-nuclear-why-does-trump-want-to-blow-it-up/

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Deutsche Welle (Bonn, Germany)

UN: Syrian Regime Used Chemical Weapons More Than Two Dozen Times

Author Not Attributed

September 6, 2017

Syrian forces used chemical weapons at least 27 times over the course of the civil war, UN investigators have found. The UN report also decries the US for failing to protect civilians in its attacks on Islamist forces.

A panel of United Nations rights investigators announced definitively on Wednesday that Syrian President Bashar Assad's forces were behind April's sarin gas attack on the rebel-held town of Khan Sheikhoun, which killed more than 80 people.

The findings were part of the latest UN report on the Syrian civil war presented in Geneva by the UN Commission of Inquiry on Syria. An earlier report by the Organization for the Prohibition of Chemical Weapons (OPCW) was not authorized to apportion blame or investigate culpability, only to establish whether chemical weapons had been used.

Investigators also revealed that they had documented 33 chemical weapons attacks since the war's outbreak in 2011. Twenty-seven of those were carried out by Assad's government forces, including seven between March 1 and July 7 of this year. The perpetrators in six attacks had not yet been identified, investigators said.

The attack this April on Khan Sheikhoun, where sarin was dropped from a military aircraft, was described as the "gravest incident" and declared a war crime.

The UN commission's chairman, Paulo Pinheiro, told reporters in Geneva Wednesday: "Not having access did not prevent us from establishing facts or reasonable grounds to believe what happened during the attack and establishing who is responsible."

Pinheiro also ruled out claims by Assad and Russian officials following the sarin attack that military strikes had hit a weapons depot belonging to rebel forces that contained sarin gas. Witnesses reportedly told the commission no such weapons depot had existed, while investigators said that a strike would have destroyed the sarin, rather than release it widely.

The commission said its latest report, which covers findings from March to July of this year, was based on information retrieved by satellite images, video, medical photos and some 300 witness interviews.

"The commission finds that there are reasonable grounds to believe that Syrian forces attacked Khan Sheikhoun with a sarin bomb at approximately 6.45 a.m. on 4 April, constituting the war crimes of using chemical weapons and indiscriminate attacks in a civilian inhabited area," the report said.

The strike prompted US President Donald Trump to launch a military airstrike on a Syrian air base.

UN decries US failure to 'protect citizens' in Syria strikes

Investigators said they were also "gravely concerned" by US-led operations against the so-called "Islamic State" (IS) jihadi group in Syria.

According to rights group Amnesty International, some 180 civilians were killed over June and July in the US-backed Syrian Democratic Forces' (SDF) offensive to recapture the Syrian city of Raqqa back from IS insurgents.

"We continue to investigate coalition air strikes carried out to expel ISIS from Raqqa resulting in an increasing number of civilian casualties," Pinheiro said.

The report also highlighted a June airstrike on Al-Jina, in Aleppo province, where US forces hit a building adjacent to a mosque and fired two Hellfire missiles at fleeing civilians, killing 38 people.

US military investigators said the strike was a legitimate attack on a meeting of al-Qaida insurgents.

However, Pinheiro said the commission had "not found any evidence that such an al-Qaida meeting was taking place," while the report denounced US forces for failing "to take all feasible precautions to protect civilians and civilian objects when attacking a mosque, in violation of international humanitarian law."

http://www.dw.com/en/un-syrian-regime-used-chemical-weapons-more-than-two-dozen-times/a-40382478

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i24NEWS (Tel Aviv, Israel)

Israel Must Normalize Its Nuclear Program, Experts Tells I24news

Author Not Attributed

September 6, 2017

Professor Avner Cohen calls for transparency as High Court considers petition calling for more oversight

Israel's High Court of Justice's reluctance on Wednesday to consider a petition requiring the country's nuclear program to be subject to greater oversight is a reflection of how taboo it is to discuss the issue, Avner Cohen, a professor of nonproliferation studies at Middlebury Institute of International Studies at Monterey, told i24NEWS in an interview.

Israel has a script policy of neither confirming nor denying that it possesses nuclear weapons, but international reports have long said that the country possesses dozens or hundreds of such devices.

Cohen, an expert on Israel's nuclear program, was among the petitioners who asked the court to consider compelling the legislature to pass laws increasing oversight.

The justices agreed that it was an important, serious issue to discuss, but appeared likely to reject the petition on legal, procedural grounds, arguing that it had no precedent.

"I saw it also as saying: This subject is too big for us, we're afraid to meddle in it," Cohen said of the court's response to the petition. "It's not our business."

Cohen argues that Israel must move on from the current situation in which its nuclear program is shrouded in the utmost secrecy and entirely controlled by cabinet decisions and executive orders. "Issues of authority, layers of oversight, how much transparency, regulations, secrecy – all this is in itself secret," he said.

The petitioners sought to normalize what Cohen calls "Israel's worst-kept secret".

"It needs work and deliberation," he said, "but it's time."

Israel's secrecy is a reflection of a tension that has existed for decades, Cohen explained. "It's an essential tension that started at the very dawn of the nuclear age, between secrecy, security, and democracy," he said. When it was clear that the US would transform its military Manhattan Project to a civilian project in 1946, there was Congressional debate about the authority, organization, and level of secrecy required for the American nuclear weapons program."

In Israel, it's almost like the situation was frozen in the Sixties," Cohen said.

Avner Cohen is a professor and senior fellow at the Middlebury Institute of International Studies at Monterey's James Martin Center for Nonproliferation Studies. He recently directed a comparative study, "Nuclear Legislation and Governance in Four Nuclear Weapons Democracies", which compares Israel's alleged nuclear weapons program with weapons programs in the United States, United Kingdom, and France.

https://www.i24news.tv/en/news/israel/154864-170906-israel-must-normalize-its-nuclear-program-experts-tells-i24news

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Mehr News Agency (Tehran, Iran)

JCPOA Proves Iran Never Sought Nuclear Weapons

Author Not Attributed

September 6, 2017

In a meeting with special envoy of Japan's prime minister, Iran's Mohammad Javad Larijani said the nuclear deal is a testament that the Islamic Republic has never sought to develop nuclear weapons.

Head of Iran's High Council of Human Rights Mohammad Javad Larijani and his deputies met with Masahiko Komura, the special envoy of Japan's Prime Minister and his accompanied delegation, in Tehran on Tuesday evening.

During this meeting, the Japanese side expressed his interest in extending mutual familiarity between the lawyers and juries of the two countries and also on developing bilateral relations in the area of law and judicial system.

The two sides acknowledged the positive outcomes of holding human rights dialogues between Iran and Japan, and accordingly announced their preparedness to hold joint workshops in order to inform one another on their judicial system and exchange their experiences in this area.

The Japanese envoy also made remarks on South Korean Peninsula crisis. Pointing out that this crisis can directly endanger Japan's national security, he stressed the major role of China on resolving the situation without the need for military options.

Former Foreign Minister of Japan also voiced his support of Iran's stance in the international scene and particularly on JCPOA, adding that Iran's constructive interactions with the world are important to Japan.

Elaborating on Iran's opposition to production, accumulation and application of nuclear weapons all across the world, Mohammad Javad Larijani asserted "to the countries who accused Iran of developing nuclear weapons, JCPOA proved that Iran has never been after nuclear weapons, however the US and the European Union must bear in mind that Iran knows no boundaries for developing peaceful nuclear technologies in accordance with its own rights."

The High Council for Human Rights secretary went on to add “certainly, we won’t be the first country to withdraw from JCPOA, but we will not remain unresponsive to the other party’s lack of commitment to the agreement.”

http://en.mehrnews.com/news/127583/JCPOA-proves-Iran-never-sought-nuclear-weapons

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INDIA/PAKISTAN

One India (Bengaluru India)

The dirty bomb: When Benazir smuggled nuclear data into North Korea

By Vicky Nanjappa

September 5, 2017

Benazir Bhutto smuggled nuclear-missile tech into North Korea

North Korea's testing of the Hydrogen bomb has left everyone concerned. Pakistan was quick to condemn it too, but behind North Korea's missile capabilities there is a history attached.

In the 2008 book, "Good Bye Shahzadi," written by journalist Shyam Bhatia, the late Pakistan premier Benazir Bhutto is quoted on this issue. It said she had smuggled nuclear data to North Korea in 1993.

"Before leaving Islamabad she shopped for an overcoat with the 'deepest possible pockets' into which she transferred CDs containing the scientific data about uranium enrichment that the North Koreans wanted," Bhatia says in the book. "She implied with a glint in her eye that she had acted as a two-way courier, bringing North Korea's missile information on CDs back with her on the return journey."

It was said that the data was used to facilitate a missile deal in which North Korea supplied Pakistan with long range missile technology. It is also said that Pakistan's Ghauri missiles are based on North Korea's Nodong missiles. There have been nuclear-missile tradeoffs between Pakistan and North Korea. Ironically this has been facilitated by China.

North Korea over the years with China's backing has managed to master the art of making bombs. The hydrogen bombs which use fusion to unleash huge amounts of destructive energy is something that North Korea has mastered, but Pakistan has not done as yet.

On the test conducted by North Korea, Pakistan says it has nothing to do with it. Pakistan's nuclear scientist Dr Andul Qadeer Khan says that North Korea's missile technology is better than Pakistan's. In a telephonic interview with BBC Urdu he said that North Korea was self-reliant in the nuclear field because of its highly qualified group of scientists. He says that he was in North Korea twice under a missile programme and found that they had much better quality compared to Pakistan. Their scientists are highly capable, and most of them have studied in Russia. Russia and China would never leave North Korea alone, he also said.

To a question whether Pakistan had assisted North Korea, he said that it was out of the question. Their overall technology is better. We never saw their facilities or discussed the programme, he also said.

He however said Pakistan's association with North Korea for the missile programme was common knowledge. In fact, the Pakistani government itself announced that we were in contact with North Korea, he also added.

http://www.oneindia.com/international/the-dirty-bomb-when-benazir-smuggled-nuclear-data-into-north-korea-2536693.html

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Pakistan Today (Lahore, Pakistan)

Musharraf Says Dr Qadeer Was Guilty of Nuclear Proliferation; He Gave Him Protection

Author Not Attributed

August 30, 2017

Former president Gen (retd) Pervez Musharraf on Tuesday claimed that Dr Abdul Qadeer Khan's picture was among the photos that then-US President George W. Bush showed him of the infamous nuclear deal, adding that former Central Intelligence Agency chief showed him 'irrefutable evidence' against Dr Qadeer.

According to a private news channel, Musharraf said he was embarrassed when former US president Bush showed him pictures of the nuclear deal taking place, adding that Dr Qadeer was in one of the pictures.

Musharraf claimed that afterwards, he called Dr Abdul Qadeer in his office and showed him the pictures. After witnessing those pictures, Dr Abdul Qadeer shed tears, asking for his forgiveness, he claimed.

"Dr Qadeer grabbed my knees while crying and asked for my forgiveness," the former president said.

He went on to say that despite the fact Dr Qadeer was guilty of nuclear proliferation, he gave him protection.

"I accepted the pressure but never handed Dr Qadeer to any country," he maintained. "Now that he speaks against me, it surprises me a lot."

He also denied the claims that he had provided Dr Khan a speech to read out to the nation.

https://www.pakistantoday.com.pk/2017/08/30/musharraf-says-dr-qadeer-was-guilty-of-nuclear-proliferation-he-gave-him-protection/

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The Hindu (New Delhi, India)

Army supremacy has to be maintained: Army Chief Bipin Rawat

By Dinakar Peri

September 6, 2017

India should be prepared for a two-front war despite its nuclear weapons, Army Chief Gen. Bipin Rawat said on Wednesday even as he called for maintaining the "supremacy and primacy" of the Army in a joint services environment.

"Wars will be fought on land, and therefore the primacy of the Army must be maintained. The other services, the Navy and Air Force, will play a very major role in support of the Army which will be operating on the ground, because no matter what happens, we may be dominating the area or the air, but finally war will be won when we ensure territorial integrity of the nation," Gen. Rawat said while speaking at a seminar organised by the Centre for Land Warfare Studies.

"And therefore, the supremacy and primacy of the Army in a joint services environment becomes that much more relevant and important," he stressed.

Tri-service integration has been a touchy issue with the Navy and Air Force worried that their autonomy would be eroded. The Army has recently sparred with the Air Force for control of attack helicopters.

War is in the realm of reality

Stating that the country was surrounded by two adversaries, one on the Western border and one on the North, Gen. Rawat said that war is in the realm of reality.

"To say that in future there will be no wars if you have sufficient deterrent may not always be true… Nuclear powers don't go to war and that nuclear weapons are weapons of deterrence, yes they are. But to say that they can deter war, they will not allow nations to go to war, in our context that may also not be true," he said.

He stressed that the nature of warfare has been changing and much before militaries get into battle, wars may commence through non-contact warfare.

For this Gen. Rawat referred to the Chinese campaign over the Doklam standoff in which Beijing mounted an aggressive pitch alleging that Indian troops have crossed into its territory.

"In fact, if you look at the recent incident that happened on our Northern borders close to Sikkim, we did see information, psychological, media and legal warfare being launched by the adversary. It did not however lead to kinetic warfare…," he stated.

On China, in an apparent reference to Doklam, Gen. Rawat added that flexing of muscles has started.

"Salami slicing, taking over territory in a very gradual manner, testing our limits of threshold is something we have to be wary about and remain prepared for situations emerging, which could gradually emerge into conflict…," he said.

On Pakistan, Gen. Rawat questioned as to how long the country will continue to bear the proxy war and said, "Because of the proxy war there is always scope for conflict with our Western neighbour."

"As far as our Western adversary is considered, we don't see any scope of reconciliation, because their military, the polity, and the people in that nation have been made to believe that there is an adversary, India, which is all out to break their nations into pieces..." he observed.

Tensions along the Line of Control (LoC) with Pakistan have been running high since the Uri terror attacks in September last year.

http://www.thehindu.com/news/national/despite-nuclear-weapons-threat-of-two-front-war-is-real-army-chief-bipin-rawat/article19630592.ece

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The News International (Karachi, Pakistan)

North Korean Technology Much Better Than Ours, Says Father of Pakistan's Nuclear Bomb

Author Not Attributed

September 5, 2017

Nuclear scientist Dr Abdul Qadir Khan has said North Korea's nuclear technology is much better than Pakistan's, a couple of days after North Korea conducted sixth nuclear test.

"China and Russia will not leave North Korea alone," he said in an interview with BBC Urdu on Monday, in a reference to mounting international pressure on Pyongyang after it announced that it has tested a hydrogen bomb

Recalling his trips to North Korea, he said he found Korean experts highly capable and most of them have studied in Russia.

Ruling out Pakistan's assistance to North Korea in nuclear technology, he said: "It is out of question, their technology is much better than ours. Ours is the same old American technology".

"We neither saw their (nuclear) facility nor discussed this issue.

North Korea has been under U.N. sanctions since 2006 over its ballistic missile and nuclear programs. Typically, China and Russia only view a test of a long-range missile or a nuclear weapon as a trigger for further possible U.N. sanctions.

Pakistan tested nuclear weapons in May 1998, shortly after India announced it had done so. Both countries faced international sanctions as a result.

Neither Pakistan nor India have signed the nuclear Non-Proliferation Treaty (NPT).

https://www.thenews.com.pk/latest/227929-North-Korean-technology-much-better-than-ours-says-father-of-Pakistans-nuclear-bomb

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AFRICA

Science (Washington, DC)

U.S.-China Mission Rushes Bomb-Grade Nuclear Fuel Out of Africa

By Richard Stone

August 31, 2017

Dan Peng steps onto a narrow steel frame just above a 6-meter-deep pool, which holds a nuclear reactor about to go critical. Clad in a lab coat with a pocket radiation dosimeter, sweating in the stifling reactor hall here on the outskirts of Ghana's capital, the young nuclear physicist edges out to a tube jutting above the water's surface. He grabs a cord leading out of the tube and reels it up, hand over hand, until a cigar-shaped capsule emerges—a packet of neutron-absorbing cadmium. It's the last of three that were immersed in the pool as a safety measure, to ensure that the reactor's new low-enriched uranium (LEU) core did not achieve a self-sustaining fission reaction—criticality—before the team was ready.

At the edge of the pool, several other physicists and engineers, colleagues of Peng's at the China Institute of Atomic Energy (CIAE) in Beijing, huddle behind a bank of instruments. On one digital display, numbers change in a blur as the neutron count shoots up, then levels off. Now, the only bulwark against criticality is a single control rod piercing the heart of the reactor.

"We're ready," says a smiling Li Yiguo, a CIAE nuclear physicist and leader of a landmark effort in nuclear nonproliferation at the Ghana Research Reactor (GHARR-1). Li asks a colleague to summon dignitaries to mark the culmination of a 10-year odyssey to remove GHARR-1's highly enriched uranium (HEU) fuel—weapons-grade material—and replace it with LEU, which cannot be used for a nuclear bomb without further enrichment.

The operation, which took place in July at the Ghana Atomic Energy Commission in Accra, is a milestone in a dogged effort since the end of the Cold War to remove enriched uranium and plutonium from countries that do not have nuclear weapons. Spearheaded by the United States and the International Atomic Energy Agency (IAEA) in Vienna, the initiative took on added urgency after the 9/11 attacks, out of fear of al-Qaida or another terrorist group laying hands on nuclear materials. Small, HEU-fueled research reactors, including GHARR-1 and four other Chinese-made miniature neutron source reactors (MNSRs) operating in the Middle East and Africa, were a high priority. But reengineering an MNSR's core—a cylindrical array of 350 fuel and dummy pins that is a little larger than a gallon paint can—to run on safer fuel posed unique challenges.

Chinese and U.S. nuclear experts spent a decade plotting out the Ghana operation, sharing expertise and working at each other's labs. "No question, we were able to collaborate very, very well on the MNSR conversion," says Ernest Moniz, CEO of the Nuclear Threat Initiative (NTI), a think tank in Washington, D.C., and former secretary of the U.S. Department of Energy (DOE). The process strengthened a bond that is quietly developing between nuclear scientists in the United States and China. "It's very important for building trust," says Hui Zhang, a nuclear policy analyst at the Belfer Center for Science and International Affairs at Harvard University.

In 1999, relations between Chinese and U.S. nuclear scientists entered a tailspin after the U.S. Congress, in a high-profile report, accused China of stealing nuclear weapons secrets from DOE's national laboratories. China denied the allegations, and U.S. nonproliferation experts cast doubt on them. Nevertheless, the accusations torpedoed a nascent technical exchange program between U.S. and Chinese weapons scientists.

But now, even as the two countries are embroiled in trade disputes and tensions over the South China Sea and North Korea's nuclear program, collaborations between their nuclear scientists are intensifying. Last year, China opened a Center of Excellence (COE) in nuclear security in Beijing that's filled with top-of-the-line instrumentation for combatting nuclear smuggling and terrorism; Chinese and U.S. physicists work together there to hone measures for protecting nuclear facilities and analyzing interdicted nuclear materials. Under the 2015 Iran nuclear deal, U.S. and Chinese scientists are helping counterparts in Iran reconfigure a heavy water reactor in Arak so it can no longer produce significant quantities of plutonium. And the research reactor conversions will continue. Next up is an MNSR in Nigeria in spring 2018, followed by reactors in Iran, Pakistan, and—when conditions permit—Syria.

The MNSR conversions "show real leadership on the part of the Chinese," says David Huizenga, acting deputy administrator for defense nuclear nonproliferation at DOE's National Nuclear Security Administration (NNSA) in Washington, D.C. They are part of a "very important partnership" in nuclear security, he says, in which something unthinkable only a few years ago is taking place: Chinese and U.S. weapons scientists are finding ways to work together.

Early in the Cold War, China's nuclear program was, to the West, a black box. Its leaders trained in the United States and United Kingdom before World War II, but the Soviet Union provided critical materials and technical help in the late 1950s. By 1960, Sino-Soviet relations were fraying, but China's program was well underway; it detonated its first atomic bomb in 1964.

As relations between China and the United States warmed in the 1980s and the two nations saw the Soviet Union as a common adversary, their nuclear scientists started a wary pas de deux, including low-profile visits to each other's atomic labs. Those initial interactions laid the groundwork for the U.S.-China Arms Control Technical Exchange Program (ACE), launched in 1994 to bring together nuclear scientists from the three chief U.S. weapon labs—Los Alamos National Laboratory, Lawrence Livermore National Laboratory, and Sandia National Laboratories—and their singular counterpart: the China Academy of Engineering Physics (CAEP) in Mianyang, in southwestern China.

The early 1990s were a "huge transition" for China's nuclear scientists, says Nancy Hayden, an international security expert at Sandia in Albuquerque, New Mexico, who took part in the initial exchanges. After China signed the Nuclear Nonproliferation Treaty in 1992, she says, CAEP's privileged but cloistered scientists "suddenly found themselves thrust into roles they had no idea how to fulfill," such as verifying treaty compliance, bringing fissile material safeguards up to international standards, and even helping China develop nuclear power. "They were eager to soak up whatever knowledge we could share," Hayden says.

Obstacles loomed, including the legacy of China's Cultural Revolution of the 1960s and '70s. "There was a whole generation of scientists missing," says Hayden, who recalls a group split between researchers older than 60 with "deep experience" and neophytes under 30. And when the U.S. side insisted on "transparency," she says, the Chinese recoiled. For them, Hayden explains, "transparency" recalled the requirement during the Cultural Revolution to pen "self confessions" and "rat on their families to authorities."

Yet the interactions proved priceless. "This was the only window onto that community. Just building a relationship was a major outcome," Hayden says. In workshops in 1997–98, the United States and China began collaborating on controlling nuclear exports and on technologies for managing fissile materials and verifying compliance with the Comprehensive Nuclear Test Ban Treaty (which neither country has ratified).

Then it all came to a halt.

Even as ACE was building bridges, other parts of the U.S. government were probing allegations of Chinese nuclear espionage. In May 1999, a U.S. House of Representatives committee chaired by Christopher Cox (R-CA) released a public summary of key claims from its classified report from that January. Among the headline-grabbing findings, the Cox report alleged that China had stolen design information on advanced U.S. hydrogen bombs and on a neutron bomb that was never deployed. The report blamed the thefts on a 20-year-long program of espionage—and on the exchanges, which had given China "extensive interactions with scientists" at Los Alamos and Sandia in New Mexico and Livermore in California, and at a fourth national lab, Oak Ridge in Tennessee.

China maintained that its nuclear weapons R&D relied on homegrown expertise and technology. And in a critique released at the end of 1999, four experts at Stanford University's Center for International Security and Cooperation in Palo Alto, California, eviscerated the Cox report's major findings. "There is no evidence presented in any report that Chinese scientific visitors have abused their privilege in visiting the United States," the Stanford quartet wrote. "There is a lot of stuff in the Cox report that just ain't so," says Matthew Bunn, an expert on nuclear proliferation at the Belfer Center. "Whatever may have happened with respect to espionage, I don't think it had anything to do with the lab-to-lab cooperation."

The U.S. government thought it had nabbed one spy: Wen Ho Lee, a Taiwanese-American physicist at Los Alamos whose work included simulating nuclear blasts. In December 1999, a federal grand jury indicted Lee on 59 counts of stealing nuclear secrets on China's behalf. He spent the next 9 months in solitary confinement—as the case against him unraveled. In September 2000, Lee pleaded guilty to one count of "illegal retention" of defense information. In a humbling climb-down, the government dropped the other 58 counts, and Lee successfully sued for damages.

But the damage to relations between Chinese and U.S. nuclear scientists was done: Contacts ceased. "Many Chinese experts felt greatly insulted," says Tong Zhao, a nuclear policy analyst at the Carnegie-Tsinghua Center for Global Policy in Beijing. Zhao says the director of CAEP, Hu Side, felt "there must be an apology from the U.S. side for the lab-to-lab program to be resumed."

Before that could happen, the 9/11 terror attacks occured and the U.S. government suddenly had a new paramount priority in the nuclear arena: securing weapons-grade fissile materials in the far corners of the globe. That offered a new impetus—what Huizenga calls "a different angle"—for bringing Chinese and U.S. nuclear scientists together.

Razor wire in chaotic curlicues festoons the ceiling of a bunker in Beijing that is an unlikely symbol of the renewed collaboration. Its meter-thick walls are designed to shelter "special nuclear materials": weapons-grade uranium or plutonium. As nuclear physicist Xu Zhenhua and a few companions walk into the dim chamber, about the size of a volleyball court, sensors detect the unauthorized entry and a repeated warning in Chinese blares from a loudspeaker.

"Wait, don't go past that line," says Xu, pointing to a yellow stripe on the floor several centimeters away.

"What happens?"

"The wire falls down on you."

"Ouch."

Xu laughs. In fact, he says, the wire "blanket" would normally be lowered to the floor when staff are absent.

The facility, located at COE, is a test bed for measures to foil nuclear thieves. In an operational bunker, if the razor wire failed to deter an intruder, machines would pump the room full of fog. The

obstacles are designed to delay intruders for long enough to be caught before they reach three barrels at the center of the bunker—stand-ins for containers of fissile material.

A short walk away is a cavernous hall with artificial weather generators—wind turbines, lightning machines, and sprinklers—for live-fire training of nuclear SWAT teams; a Kazakh squad was put through its paces there last April. Two other buildings house top-of-the-line instrumentation, much of it provided by the United States, for analyzing interdicted nuclear materials.

COE "is such a great opportunity for nuclear security collaboration," says Tam Le, a specialist on physical protection of nuclear facilities at Sandia who has been working at COE to set up simulations and augmented-reality training. For their part, Chinese specialists visiting Los Alamos and other U.S. labs are boning up on techniques for forensic analysis of nuclear materials at COE.

The interactions are paying off. This summer, IAEA ran a round-robin competition, sending identical uranium oxide pellets to COE and 30 other labs around the world for analysis. One challenge was to precisely assay the uranium isotopes, which could shed light on the material's source; on at least one measurement, COE scientists came out tops. The China-U.S. collaboration at COE has grown so tight that DOE won an exception to U.S. law to ship plutonium to COE as a reference standard. "You would not expect that. But it's a very small amount," says Xu, deputy director general of China's State Nuclear Security Technology Center, which runs COE.

At a China-U.S. nuclear security dialogue last spring, China shared proposals for using COE for further joint work in securing radioactive materials and other areas. So far, scientists from CAEP, China's nuclear weapons lab, have not participated. "The potential is there. Time will tell," says Page Stoutland, vice president for scientific and technical affairs at NTI, which has recently brokered informal talks between Chinese and U.S. nuclear weapons scientists. NTI's Moniz is less optimistic. Renewing ties with CAEP, he predicts, "is going to be challenging for the next few years."

Inside the GHARR-1 hall, the reactor with its new LEU core is powering up. Li gives the order to raise the control rod 2 centimeters at a time. Each time, the neutron count jumps, and then levels off. "This has been a long time coming," says Kwame Aboh, who heads Ghana's Nuclear Regulatory Authority.

The painstaking collaboration began when scientists from CIAE and Argonne National Laboratory in Lemont, Illinois, did rounds of meticulous calculations to determine how much LEU would be required to match the old core's neutron flux. That would ensure the reactor remains a powerful tool for analyzing materials and geological samples. "The point was not just to remove the HEU, but to maintain the facility's scientific capabilities," says Peter Hanlon, assistant deputy administrator for NNSA's office of material management and minimization, who led the U.S. delegation.

As those simulations were underway, CIAE and the United States built a "zero-power" facility for testing new MNSR cores in a guarded inner sanctum on the institute's leafy campus in southern Beijing. "Technically this was the most unique aspect of the conversion," says John Stevens, a nuclear engineer at Argonne who took part. The zero-power facility, he says, "allows us to deal with the uncertainties and tolerances and really figure out how to build the exact core for each reactor." Ghana's new $1.5 million LEU core went through that vetting last summer.

At GHARR-1, the control rod nudges up another increment. The neutron flux spikes—and then settles at the rate needed for a self-sustained fission reaction. "We're critical!" says Li, drawing a cheer and a smattering of applause. Hanlon is pleased by the absence of drama. "If you remember a reactor going critical, that's not a good thing," he says. "You want it to be really, really boring."

With GHARR-1 back online, the final step was to ship the old core, containing about 1 kilogram of HEU, back to China for long-term storage. For weeks it sat just outside the GHARR-1 reactor hall, encased in a 3-meter-high cask beneath a black tarp, with a Ghanaian soldier cradling an automatic

weapon nearby. "I tell people, 'There is a small god hidden in there,'" Aboh says. The weapons-grade uranium, riddled with radioactive byproducts of fission, was awaiting transfer by armed escort to Accra airport. On 26 August, it was flown back to Beijing for storage. (Science agreed not to publish this story until the HEU was safely back in China.)

At last, Ghana's nuclear physicists can resume their experiments, including several dissertations that were on hold for a year. "There has been a lot of stress, a lot of tension, from being shut down so long," says nuclear physicist Benjamin Nyarko, director general of the Ghana Atomic Energy Commission. "Now we will discover how the new fuel compares with the HEU." The Chinese and U.S. physicists, meanwhile, are preparing for another MNSR conversion this spring in strife-torn northern Nigeria. Once that is done, the only HEU left on the continent will be in South Africa.

Many nonproliferation experts hope the Ghana operation and COE in Beijing will be curtain raisers for deeper and more extensive China-U.S. nuclear ties. "The personal relationships being built at the operational level are very important," Zhao says.

But personal connections won't make up for the lack of a regular forum for Chinese and U.S. nuclear weapons scientists, which hampers collaboration in areas such as nuclear cybersecurity and verification for future arms control or disarmament treaties. A stronger relationship "could enable Chinese nuclear scientists to argue better against the more hawkish Chinese military scholars," Zhao says. The nuclear firewall has also stymied discussions about North Korea's nuclear program—for example, how to dismantle its nuclear infrastructure in the aftermath of a war or the regime's collapse.

Official distrust—and lingering enmity—has been a showstopper. "China has said that if the United States does not acknowledge past cooperation as legal and mutually beneficial, then there is no basis for moving ahead," Zhao says. Its conditions include a formal U.S. apology for the Cox report. But key figures in the U.S. Congress oppose such cooperation with an assertive China, and, Bunn says, "The U.S. government has been unwilling to send that letter."

"I would argue that both governments have been excessively stiff-necked," Bunn says. He and others hope that the success here in West Africa will loosen things up.

https://www.thenews.com.pk/latest/227929-North-Korean-technology-much-better-than-ours-says-father-of-Pakistans-nuclear-bomb

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COMMENTARY

Foreign Policy (Washington, DC)

Welcome to the Thermonuclear Club, North Korea!

By Jeffrey Lewis

September 4, 2017

Kim Jong Un's destructive power has grown in tandem with the rest of the world's powers of denial.

I am getting really tired of saying I told you so. After North Korea's September 2016 nuclear test, the writing was on the wall. North Korea was moving toward testing an ICBM and a thermonuclear weapon to arm it.

"If we do nothing, I suspect [North Korea's nuclear program] will grow in number, grow to threaten the continental United States, and eventually grow to include very powerful staged-thermonuclear weapons," I wrote at the time. "And all this is going to happen sooner that you think."

On Saturday, North Korean state media released images of Kim Jong Un standing next to what appeared to be a two-stage thermonuclear weapon small enough to arm one of North Korea's long-range missiles that can strike the United States. And before analysts could pretend it was filled with styrofoam peanuts … kaboom! North Korea conducted its largest nuclear explosion ever. North Korea announced that it had tested a two-stage thermonuclear weapon.

You read it here first – a year early.

How big was the bomb? This is a bit tricky. Seismologists measure nuclear explosions with the same scale used for earthquakes – shaking ground is pretty much all the same. The United States Geological Survey, as well as its Chinese counterpart, both estimate the size of the explosion as 6.3. (The Comprehensive Nuclear Test Ban Treaty Organization has a slightly lower estimate at 5.8. CTBTO estimates are usually a bit lower.)

That's really big. The September 2016 explosion was only a 5.2 and since the scale is logarithmic, that means this explosion is more than ten times larger than the one in September. The explosion was so powerful that USGS recorded a second seismic event a few minutes later, which appears to have been a collapse inside the cavity created by the explosion.

There is a bit of estimation involved in calculating the size of the explosion that produced the seismic signal. That can be tricky as it depends on the geology of the test site, how well seismic waves propagate from that site, how deeply buried in rock the explosion well and how well coupled the explosion was to the surrounding rock. The standard available equations give slightly different answers, but they suggest the yield will be around few hundred kilotons as long as the estimate of 6.3 holds. That's an order of magnitude larger than anything North Korea has ever exploded before and about the same yield as modern U.S. thermonuclear warheads. (The American ones are quite a bit more efficient.)

These calculations will also depend on where the test occurred. Right now it looks like the test happened at Punggye-ri test site, but in which mountain? If North Korea tested in the new tunnel we discovered a few years ago, it might have been more deeply buried than other tests and therefore look a bit smaller than it was. And if North Korea tested inside one of the cavities created by past nuclear explosions, that might also help hide how large it really was. You're going to have to be patient as seismologists, nuclear wonks and the like settle on a good answer. But even the low end of the estimates are big. Big enough, in fact, that the explosion was far too large to be the compact fission device we saw Kim Jong Un posed with back in 2016.

What sort of bomb was it? The U.S. intelligence community is calling it an "advanced nuclear device." That's a bit of a hedge because they are still waiting to see if the test releases any radionuclides that might give a hint as to the composition of the bomb. With only preliminary yield estimates, it's hard to completely exclude some other thermonuclear concepts – but all of those options are still roads that lead to a thermonuclear weapon.

For now, those of us reliant on open-source data are left with analyzing the device in the pictures, which North Korea said was a two-stage thermonuclear weapon. The thing is shaped like a peanut, with each nut in the shell as one of the device's stages. The larger nut is the fission primary, most likely based on the device tested last year, while the smaller one is an apparently spherical secondary of thermonuclear material.

I am old enough to remember when leaks appeared in the press stating that the U.S. W88 nuclear warhead was shaped like a peanut, with a spherical secondary and slightly larger primary. People freaked out that classified information like that was available in the press. I thought they were overreacting, but still … it's a little weird to see Kim Jong Un standing next to a giant peanut of death. I mean, Kim is definitely not getting a Q clearance from DOE as long as he keeps disclosing restricted data like this.

The North Koreans are boasting, but I see no particular reason to doubt them. The resulting explosion was large enough to be a thermonuclear weapon and, as I have written elsewhere, six nuclear tests is plenty to develop such a device. Still, it would be nice to have some official confirmation. Let's hope U.S. sniffer aircraft get a great big whiff of Kim Jong Un's barking spiders and can tell us precisely what he had for dinner.

I am seeing a lot of people saying: so what? A nuclear weapon is a nuclear weapon. What does it matter?I am seeing a lot of people saying: so what? A nuclear weapon is a nuclear weapon. What does it matter?

Well, obviously a larger nuclear weapon does more damage. Go ahead and check out Alex Wellerstein's Nuke Map. Drop a 30 kiloton bomb on Trump Tower, then drop a 300 kiloton bomb there. Larger yields help compensate for less accurate missiles. If your goal is to consume Manhattan in a cleansing thermonuclear firestorm with missiles that have accuracies on the order of a kilometer or so, a couple hundred kilotons is going to be a lot more credible of a threat.

The North Koreans also went out of their way to taunt us about electromagnetic pulse (EMP) effects, I suppose because they think we're worried about them. I think its laughable to imagine that North Korea would waste a nuclear weapon hoping to knock down parts of the power grid. For my part, I would much prefer the North Koreans waste nuclear weapons trying to achieve an uncertain EMP effect than incinerating cities with real people pushing strollers with real babies. KCNA is really stepping up its trolling game.

But there is also a deeper meaning here, a theme that I keep returning to over and over again. We have struggled, over and over again, to accept North Korea's stated goal of possessing a thermonuclear weapon that can be delivered against targets in the United States. The North Koreans spent all summer talking about how its new missiles were designed to carry a "large sized heavy nuclear weapon." But when I told people that meant a thermonuclear weapon, a lot of them laughed. We've gotten comfortable with the idea that wars are things that happen in other places — that we can "take out" tinpot dictators with little or no risk to ourselves. The idea that the North Koreans could retaliate, that they could threaten us here in the United States, is something that U.S. officials have openly described as "unimaginable."

The thing is, you don't have to imagine it, at least not any more. It's right there in front you – the missile launches on the Fourth of July, the pictures of Kim Jong Un smiling with his bomb, and now a nice loud bang.

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War on the Rocks (Washington, DC)

Want to Avoid Nuclear War? Reject Mutual Vulnerability with North Korea

By Vince Manzo and John Warden

August 29, 2017

The North Korea policy of the Donald Trump administration has been mired in a morass of contradiction and bluster. But there might be a silver lining: There is an indication that the administration will follow its predecessors and attempt to deny North Korea the ability to hold the United States at risk with nuclear weapons. If effectively implemented as a part of a comprehensive deterrence strategy, this approach would give the United States and its allies the best chance of containing a nuclear-armed North Korea and avoiding nuclear war.

In their attempts to formulate an effective strategy, the previous two administrations articulated an important strategic principle: The United States will attempt to deny North Korea the ability to hold the U.S. homeland at risk with nuclear-armed intercontinental ballistic missiles (ICBMs). This is not, however, the same as saying that the United States will prevent North Korea from testing an ICBM or deploying an operational ICBM force, a goal that does not seem possible without paying an unacceptable cost. Rather, the principle is a signal of U.S. intent to deny North Korea the ability to use the threat of nuclear strikes against the U.S. homeland as coercive leverage.

The most visible and expensive element of this policy is the U.S. Ground-Based Midcourse Defense (GMD) system. Initiated under President George W. Bush's administration in 2002 and expanded by President Barack Obama in 2013, the GMD system is designed to defend against North Korean and Iranian ICBMs. The U.S. decision to deploy this system demonstrates that, from a strategic planning perspective, the United States saw a North Korean ICBM as a distinct possibility and took steps to ensure that extended deterrence to Japan and South Korea would remain viable even if North Korea deployed a nuclear-capable missile that could range the continental United States.

By seeking to reduce vulnerability to a North Korean nuclear attack on the U.S. homeland, the United States has placed North Korea in a different category than Russia. (Where China should fit is a matter of debate.) Washington accepts that "mutual vulnerability" to nuclear attack is an enduring reality of its relationship with Moscow. In other words, the UnitedStates assesses that neither it nor Russia has the ability to disarm a considerable portion of the other's nuclear weapons capability and prevent a significant retaliatory strike. Furthermore, as a matter of policy, the United States does not seek to develop strike and missile defense capabilities that would deny Russia a survivable nuclear second-strike capability.

Part of the reason the United States has accepted mutual vulnerability with Russia is that it wants to avoid first-strike instability. The traditional concept of first-strike instability reasons that a nuclear-armed country would have a strong incentive to launch a first strike against its nuclear-armed adversary in a crisis if, first, doing so would enable it to generate an advantage by destroying a significant portion of its adversary's nuclear forces and, second, its adversary also has an incentive to strike first and limit damage before its own forces are degraded or destroyed. In other words,

nuclear deterrence could fail in a crisis if one or both sides were to perceive that both the potential payoff of attacking and the risk of delaying or restraining are high.

Importantly, the use-them-or-lose-them logic of classical first-strike instability does not apply to the U.S.-North Korea nuclear relationship. In a crisis or conflict, North Korea would certainly fear for the survivability of its nuclear forces and potentially its regime. But even once North Korea's nuclear force grows larger and more sophisticated, Pyongyang could not conceivably hope to generate an advantage by conducting a damage-limiting nuclear first strike against the United States. Such a strike would not significantly degrade U.S. nuclear forces or overall war potential and would ensure the end of the Kim regime. This is in no way a "dominant strategic move" for North Korea.

How then, could the United States fail to deter North Korean nuclear use? Pyongyang knows that it cannot use nuclear weapons and other capabilities to defeat U.S. and allied military forces. Instead, Kim Jong Un's more plausible theory of victory is a strategy that attempts to use nuclear coercion to persuade the United States that the costs and risks of overthrowing the Kim regime are too high. In this sense, North Korea's initial attempt at asymmetric escalation using nuclear weapons is more likely to be a limited strike against regional military targets than a massive strike against the continental United States. Pyongyang would attempt to degrade the ability of the U.S. to flow forces to the Korean Peninsula, while demonstrating a propensity for controlled risk-taking. But critically, North Korea would retain a survivable reserve nuclear force to threaten destruction of major U.S. population centers if the United States does not back down.

From this perspective, accepting U.S. vulnerability to North Korean nuclear forces would improve the credibility of North Korea's coercive strategy and increase the risk of both war and nuclear use. If Kim Jong Un is confident that North Korea can maintain a survivable reserve force that can threaten U.S. cities, he may be tempted to use nuclear weapons in a limited, coercive fashion to try to terminate a conventional conflict with the United States and its allies. Rather than use-or-lose, the logic driving North Korean first use would be, use some because you will not lose the rest. Even more unsettling, if Pyongyang became confident in its ability to use nuclear coercion as a war termination mechanism, it might conclude that it has leeway to initiate violent provocations and even war.

Thus, rather than accepting North Korea's ability to cause significant destruction to the United States with a nuclear strike, the United States should field damage limitation capabilities, a combination of strike and missile defense armaments that would allow the United States to disarm the majority of North Korea's nuclear weapons capability and prevent significant retaliatory strikes against U.S. cities. If the United States has a credible damage limitation option, the Kim regime is more likely to calculate that crossing the nuclear threshold would be a strategy for suicide, not survival, because North Korea would lack a reliable second-strike capability to deter regime change.

In order for U.S. damage-limitation capabilities to match North Korea's rapidly improving long-range missile capabilities, there is an urgent need to improve U.S. homeland defense. The GMD system has well-documented limitations, and the Trump administration should make prudent investments to fix the program, emphasizing the need for cost-effective, reliable capabilities. In addition, the United States and its allies should field a combination of intelligence, surveillance, and reconnaissance and strike capabilities that can threaten North Korea's road-mobile transporter erector launchers and ballistic-missile submarines.

The United States also should ensure that its policy of rejecting vulnerability to a North Korean nuclear strike is clear to Pyongyang. Worryingly, some North Korean officials have suggested that they have already achieved mutually assured destruction with the United States. Washington

should change this assessment by signaling that even a credible ICBM threat would not deter the United States from coming to the defense of its allies.

But denying North Korea the ability to gain leverage by threatening the U.S. homeland would be just one element of a strategy for deterring North Korea from initiating a war and, if that fails, deterring North Korea from using nuclear weapons in that war. To strengthen deterrence of North Korean adventurism, the United States and South Korea also should improve their combined conventional force posture on the peninsula, particularly their ability to fight and win limited wars. To counter the threat of regional nuclear strikes, the United States, South Korea, and Japan should improve their ability to strike and defend against North Korea's theater-range missiles. In truth, North Korea may see nuclear coercion targeting Japan or South Korea as a more likely path to terminating a war than directly threatening the United States.

Moreover, attempting to deny North Korea's ability to deter the United States with nuclear coercion does not mean that the United States should forgo caution, restraint, and negotiation. Manufacturing crises through unnecessary hectoring only increases the risk of misperception in both crisis and conflict, making the challenge of managing escalation even more daunting. There is an ever-present risk that aggressive military signaling by North Korea and the United States could turn a crisis into an escalating conflict. And precisely because the United States and its allies are sure to win a total war, Kim Jong Un likely would fear that a war will result in regime change and may calculate that limited nuclear escalation is the best way to stave off defeat. Even in circumstances where regime change is not the U.S. or allied intent, North Korea may be driven to nuclear use by misinterpreting certain military actions as a prelude to invasion. Taking steps to diminish tension, reduce misunderstanding, and assure Pyongyang that the United States and its allies would only pursue regime change in the most extreme circumstances would decrease the risk of miscalculation.

Preemptive disarmament of North Korea's nuclear forces is not the primary reason for pursuing damage limitation capabilities. Rather, the main reason is to convince Kim Jong Un that restraint is preferable to escalation. In certain wartime circumstances, the United States and its allies might calculate that pursuing regime change in Pyongyang, despite the enormous costs, is the least bad option. In that case, disarming as much of North Korea's nuclear force as possible would be a necessity. But in many other scenarios, especially ones in which North Korea has not yet crossed the nuclear threshold, U.S. and allied interests would be better served by conveying to Kim Jong Un that de-escalation is his best chance of survival. In this case, U.S. damage-limitation capabilities would function as an implicit threat. Paired with a credible assurance that the regime would survive if North Korea avoided nuclear use, such a threat would help persuade Pyongyang that the costs and risks of coercive nuclear escalation are too high to risk gambling the future of the regime.

Effectively deterring a nuclear-armed North Korea requires measured resolve backed by real strength. By rejecting vulnerability to a North Korean nuclear strike and improving damage limitation capabilities, the United States and its allies can challenge North Korea's theory of coercive nuclear escalation, inducing caution in both crisis and conflict.

https://warontherocks.com/2017/08/want-to-avoid-nuclear-war-reject-mutual-vulnerability-with-north-korea/

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Observer (New York, NY)

With World Distracted by North Korea, Iran Amasses New Weaponry

By Micah Halpern

September 6, 2017

An Iranian military truck carries parts of the S-300 air defense missile system during a parade on the country's Army Day on April 18, 2017. Iran created the Bavar 373 when its access to S-300s was restricted. ATTA KENARE/AFP/Getty Images

While all eyes are on North Korea, Iran is advancing its weapons technology. The country recently tested and announced the success of their new Bavar 373 long range, mobile, anti-missile defense system. Everything in the system is manufactured in Iran; it requires no support from outside sources.

Iran developed the Bavar 373 in response to sanctions slapped on the country in 2010. When it became clear to Iranian leadership that Russia would not be able to deliver the S-300 long range mobile missile defense system they had requested, Iran took the bull by the horns and made its own. At the same time, Iran took Russia to the World Court for breach of contract, arguing that they paid for the weapons in full and Russia failed to deliver the goods.

Iran understood that they needed to improve their anti-missile system. The Bavar 373 is almost an exact replica of the S-300. By the time the sanctions against Iran were lifted in March 2015 and Russia was able to deliver the rest of the S-300 order, Iran was nearly finished with its project. Iranians decided to use the Russian S-300 in addition to their own Bavar 373.

For Iranians, Bavar 373 also has religious significance. Bavar means "believe" in Farsi, the Persian language, and 373 is the numerical value of Mohammed's name in Arabic, known as Abjad. Abjadiyah means alphabet in Arabic. Like in all ancient languages, Arabic letters correspond to numbers. In Hebrew, this is called Gematria.

The Bavar 373 will be operational in March 2018. By that time, the Russian S-300, which was first produced in 1978, will be outdated and irrelevant. Its systems are poor, its programming is slow, and it does not readjust quickly or well. The Russians' new version, the S-400, rectified all those problems.

Israel is carefully watching Iran develop its military arsenal. They did not raise the flag when Russia resumed delivering S-300s. They did not go public with their displeasure when the Bavar 373 was introduced. This atypical behavior can be explained by one thing: Israel has found a way to game the S-300. Gaming military systems is not a new sport for Israel. They did it on September 7, 2007, when they successfully attacked the Syrian nuclear plant.

The operators of the Russian anti-missile systems saw a single plane on their screen, then a dozen, and then a swarm. Next thing they knew, their entire screen was covered with Israeli aircraft. The operators assumed it was a malfunction. It didn't dawn on them that it was an attack that would render the atomic plant unusable.

Interestingly, though Iran has been vocal about the Bavar 373, the Western world has shown little interest. Russian news, Israeli news and Iranian news covered it. These countries all have obvious stake in the game. Additionally, Pakistani press, some British outlets, and serious military sites like Jane's covered it. For Iran, this is perfect. They will interpret this as a green light to proceed.

Iran is not violating the nuclear deal by creating these weapons. During the embargo, it was forbidden to sell weapons to Iran. Now, after the deal, they are severely limited in their nuclear, biological and chemical weapons production. However, the Bavar 373, like the S-300, is a defensive

weapon. Iran is not prohibited from creating these weapons, and there is no law against importing or exporting them to Iran.

Iran understands that North Korea has unintentionally given them the best present they could ask for: They have diverted the world's attention. Because the world is preoccupied with North Korea, Iran can move ahead, unchallenged and unchecked. And that is exactly what it will do.

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RealClear Defense (Chicago, IL)

Pre-emptive Thinking About Pre-emptive Strikes

By Jeffrey Robertson

September 6, 2017

Articles discussing pre-emptive strikes on North Korea are now everywhere. Based on a small number of in-depth analytical studies, they detail military challenges, human costs and likely outcomes. While those articles prepare us for the short term, they ignore the potential long-term strategic change that would result from a conflict on the Korean peninsula.

We've seen this before in the lead-up to the invasion of Iraq in 2003. Articles discussed the military challenges, human costs and likely outcomes. But the conflict ultimately upset the delicate regional balance of power and led to an outbreak of suppressed identity conflicts, dispersion of military know-how, and an uncontrolled spread in disruptive ideologies. Those effects weren't unforeseen, but rather ignored in the rush to war.

Before anything happens in Korea, we should be aware of the speculative long-term strategic implications of a pre-emptive strike.

First, conflict on the Korean peninsula could result in a momentous change in China's role in the region and ultimately the globe. That could range from absolute regional dominance to collapse and disintegration into internal instability.

Regardless of the outcome of the conflict, South Korea could reject a self-interested, value-less, America-first approach to the region and choose to accept China's dominance as the price to be paid for unification. For most South Koreans, China's current steady position of reiterating the need for de-escalation, multilateral dialogue, and ultimately denuclearisation—essentially, diplomacy—stands in stark contrast to the incoherence and fecklessness of Donald Trump's bluster. Throughout history, when China was weak, external states or greater independence came to the Korean peninsula. When China was strong, the Korean peninsula fell under its influence. It was from this point that China's regional influence grew. China's dominance on the Korean peninsula could again be a launching pad for dominance in East Asia.

Alternatively, unification could spread dissatisfaction and opposition to authoritarian rule across the region, leading to internal instability in China. Political disruption, economic dislocation and descent into instability are possible outcomes. Even in the most favourable unification scenario, North Koreans with direct or indirect experience of the momentous human rights abuses that China implicitly supported could act as a powerful constraint to China's long-term influence in a unified Korea. China's current policies aimed at maintaining the status quo are founded on the fears of such potential outcomes. Regardless of which way the dice fall, China's regional role will change. A pre-emptive strike in Korea would precipitate that change.

Second, conflict on the Korean peninsula could exacerbate trends in US isolationism. The potential scale of conflict on the Korean peninsula, the uncertainty, and an unavoidable lack of public support in yet another war of questionable merit could exacerbate current trends towards isolationism that have been growing in the US—trends that arguably brought about the election of Trump. Isolationism inherently accepts that major powers have a right to influence their immediate regions. Conflict on the Korean peninsula thus has implications for Taiwan, Hong Kong, the South China Sea, Southeast Asia and India, as well as for peripheral regions to which a major power conflict would ultimately move.

Third, conflict on the Korean peninsula could result in an unbalanced and contested region. Sudden unification of North and South Korea would produce a single state with potentially divided loyalties and a population of around 75 million. A unified Korea would be within the range of major second-tier developed states, such as Germany (80 million), France (66 million) and the United Kingdom (64 million). An often-cited report by Goldman Sachs projects a unified Korean economy to surpass France's, Germany's and even Japan's within 30 to 40 years. The stability of the entire region would depend on the direction in which a unified Korea turns.

For 60 years, division along the 38th parallel stabilised the external struggle to influence the Korean peninsula. Sudden unification could again lead to an ongoing struggle—and potentially a major power conflict—to influence the Korean peninsula. The struggles of external states to influence the Korean peninsula caused the Sino-Japanese War (1894–95), the Russo-Japanese War (1905–05), the Korean War (1950–53) and numerous other historical conflicts on the peninsula. While the final result may be unknown, an unbalanced and contested region is a certainty.

All long-term assessments are inherently speculative and based on assumptions that may or may not pan out. But it would have led to today's Middle East and North Africa, as well as regional refugee crises and global terrorist threats? In hindsight, removing a known rogue to replace it with an unknown, unbalanced pays to speculate when the costs are so high. Creativity in analysis is essential. Who would have thought that the Iraq invasion and contested region wasn't good policy—and still isn't.

As part of the region, and a country that has benefited substantially from prolonged stability and American dominance in East Asia, Australia, along with other regional middle powers, has a vested interest in avoiding such outcomes. Any discussion of a potential US pre-emptive strike should also include the speculative long-term economic, political and strategic implications.

https://www.realcleardefense.com/articles/2017/09/06/pre-emptive_thinking_about_pre-emptive_strikes_112238.html

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ABOUT THE USAF CUWS

The USAF Counterproliferation Center was established in 1998 at the direction of the Chief of Staff of the Air Force. Located at Maxwell AFB, this Center capitalizes on the resident expertise of Air University, while extending its reach far beyond - and influences a wide audience of leaders and policy makers. A memorandum of agreement between the Air Staff Director for Nuclear and Counterproliferation (then AF/XON), now AF/A5XP) and Air War College Commandant established the initial manpower and responsibilities of the Center. This included integrating counterproliferation awareness into the curriculum and ongoing research at the Air University; establishing an information repository to promote research on counterproliferation and nonproliferation issues; and directing research on the various topics associated with counterproliferation and nonproliferation.

The Secretary of Defense's Task Force on Nuclear Weapons Management released a report in 2008 that recommended "Air Force personnel connected to the nuclear mission be required to take a professional military education (PME) course on national, defense, and Air Force concepts for deterrence and defense." As a result, the Air Force Nuclear Weapons Center, in coordination with the AF/A10 and Air Force Global Strike Command, established a series of courses at Kirtland AFB to provide continuing education through the careers of those Air Force personnel working in or supporting the nuclear enterprise. This mission was transferred to the Counterproliferation Center in 2012, broadening its mandate to providing education and research to not just countering WMD but also nuclear deterrence.

In February 2014, the Center's name was changed to the Center for Unconventional Weapons Studies to reflect its broad coverage of unconventional weapons issues, both offensive and defensive, across the six joint operating concepts (deterrence operations, cooperative security, major combat operations, irregular warfare, stability operations, and homeland security). The term "unconventional weapons," currently defined as nuclear, biological, and chemical weapons, also includes the improvised use of chemical, biological, and radiological hazards.

The CUWS's military insignia displays the symbols of nuclear, biological, and chemical hazards. The arrows above the hazards represent the four aspects of counterproliferation - counterforce, active defense, passive defense, and consequence management.