



# **USAF Center for Unconventional Weapons Studies (CUWS) Outreach Journal**

CUWS Outreach Journal 1261

28 April 2017

Featured Item: *"Understanding North Korea's Missile Tests"*. Authored by Shea Cotton, published by the Nuclear Threat Initiative; April 24, 2017

<http://www.nti.org/analysis/articles/understanding-north-koreas-missile-tests/>

Since 2014, North Korea has dramatically altered its missile testing patterns, launching missiles much more frequently and from a variety of new locations. Recognizing the importance of understanding the proliferation implications of these patterns, the James Martin Center for Nonproliferation Studies (CNS) has created a database of every known North Korean missile launch.

The CNS database reveals more subtle changes than simply an increase in the number of missiles that North Korea has launched. The data reveals:

- North Korea has created sites specifically dedicated to developmental testing of missiles
- North Korea has largely abandoned its original missile test site dedicated to development and design verification tests, the Tonghae Satellite Launching Ground. The regime has shifted space launches to the Sohae Satellite Launch Center, and developmental missile tests to Wonsan
- Many recent launches of extended range Scud and Nodong missiles, rather than being developmental in nature, have been undertaken as operational tests at relevant military units' training grounds

Taken together, these trends make the clear and disturbing point that North Korea has been conducting launch exercises, consistent with the regime's probable intent to deploy nuclear weapons to missile units throughout the country.

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Popular Mechanics (New York, NY)

The U.S. Will Soon Embark on an Epic Nuclear Arms Modernization

By Kyle Mizokami

April 25, 2017

*Will America keep its nuclear triad of missiles, bombers, and submarines?*

Newly appointed Department of Energy chief and former Texas governor Rick Perry has a big job on his hands—figuring out how to effectively modernize America's nuclear arsenal. It's an enormous task that involves rebuilding nuclear bombs, modernizing research and development laboratories, and developing a nuclear weapons policy that is tailored to current events.

The U.S. nuclear arsenal expanded for decades during the Cold War, sometimes by a thousand or more warheads a year during the peak of the arms race with the Soviet Union. Both countries evolved extensive nuclear "triads" of nuclear weapons based on bombers, submarines, and land-based missiles. It was during this time that the policy of deterring a nuclear war by preparing to fight one on a moment's notice became policy.

Since the end of the Cold War, the United States and Russia have sharply reduced their nuclear arsenals, and today both countries field approximately 1,800 warheads each at any given time, with another 2,200 in reserve. But very little effort has been put toward updating the nuclear triad and the weapons arming it.

One major issue is that many experts believe the warheads themselves need to be rebuilt to ensure reliability. It's a hazardous process that involves working with toxic plutonium and many of the country's nuclear labs date back to the Manhattan Project and they'll need extensive upgrades to keep running safely.

The weapons themselves, both the warheads and the delivery systems, are also due for updates. America's nuclear warhead arsenal is set to be reduced from twelve types of warheads to just five, a process that is supposed to streamline maintenance and make nukes cheaper to operate. The U.S. is also set to replace the Ohio-class ballistic missile submarine with the new Columbia-class, the Minuteman III intercontinental ballistic missile with the tentatively titled Ground Based Strategic Deterrent, and the B-52 and B-1 bombers with the new B-21 Raider strategic bomber.

All of this is happening at once, and it's going to be hideously expensive. The Houston Chronicle cites a figure of one trillion dollars spread across America's nuclear empire, a frequently cited figure, for everything from new buildings to rebuild warheads to new nuclear-powered submarines. The new Secretary of Energy has a real job on his hands.

<http://www.popularmechanics.com/military/weapons/a26217/nuclear-arms-modernization-perry/>

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## The Independent (London, UK)

14,923 nukes: All the nations armed with nuclear weapons and how many they have

By Skye Gould & Dave Mosher

April 21, 2017

When it comes to the threat of nuclear war, 2017 is shaping up to be a watershed moment.

Relations between the US and Russia — the two foremost nuclear superpowers — has reached a "low point" because of the US's accusations that Russia meddled in the US election and is involved with the use of chemical weapons in Syria. Meanwhile, North Korea draws ever closer to constructing a device that could threaten Washington.

President Donald Trump has also inherited a \$1 trillion program to modernize US nukes, and Russia now strains its budget to do the same for its arsenal. (In regard to Russia's nuclear modernization, Trump has even said, "Let it be an arms race.")

The Bulletin of the Atomic Scientists took note of these and other developments in January by advancing its Doomsday Clock 30 seconds. The symbolic shift implies that humanity is now just 2 minutes 30 seconds away from an apocalyptic "midnight."

World events since January would do little to improve that outlook.

Tensions between the US and North Korea have soared in recent months, with the isolated nation threatening to rain down "nuclear thunderbolts" if the US follows through on rumblings of preemptive strikes — all while the isolated nation reportedly gears up for another test of a nuclear device.

Experts disagree on how many deliverable nuclear weapons North Korea possesses, but more is known about other arsenals around the world. Below is a map that shows the best estimates of which countries have them and how many they have.

<http://www.independent.co.uk/news/world/14923-nukes-all-the-nations-armed-with-nuclear-weapons-and-how-many-they-have-a7695641.html>

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## Ars Technica (New York, NY)

Nuclear Waste Facility Receives its First Shipment Since 2014 Accident

By Megan Guess

April 25, 2017

*Shipments to the Waste Isolation Pilot Plant will ramp up in frequency through 2017.*

The Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico, began accepting shipments of transuranic waste (PDF) this month for the first time since February 2014 when an explosion of a drum of plutonium and americium waste halted all deliveries.

WIPP is the only facility that accepts waste from the nation's Cold War-era nuclear weapons production sites. The waste has been kept at those production sites for decades and includes "contaminated items such as clothing, tools, rags, residues, debris, soil." The New Mexico facility, carved into a 2,000-foot-thick salt bed in the 1980s, is intended to be a long-

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term storage solution (a very long-term solution) for all the waste that's distributed at facilities across the country.

The 2014 accident at WIPP occurred when a worker packed a shipment of waste in the wrong kind of kitty litter, which started a “complex chemical reaction” causing “white, radioactive foam” to explode from the drum, according to the Los Angeles Times. No one was in the WIPP shafts at the time of the explosion, so no one was hurt, and workers on the surface were only exposed to minimal radiation. But the facility’s state-of-the-art ventilation system was damaged, meaning shipments to the facility couldn’t continue.

Last year, the Times reported that federal officials had modified a contract with Nuclear Waste Partnership, the company that operates the dump, in the wake of the accident. The contract apparently added \$640 million for direct cleanup costs, not including the cost to replace the ventilation system and to house the radioactive waste at temporary storage facilities. The Times wrote that keeping WIPP open, even when it couldn't accept shipments, cost approximately \$200 million a year, but the facility couldn't simply close down to save that extraordinary cost due to agreements the US had with Russia to meet plutonium reduction goals.

While the overall costs could be substantial, they may be more modest than the Times projected. In an e-mail to Ars, a Department of Energy spokesperson said that "costs for activities performed under the WIPP recovery program are still being costed and some minor work remains, but overall costs associated with recovery are not expected to exceed \$250 million." That doesn't include keeping the facility open for the past three years, nor does it include work on the ventilation system. "No estimate for the cost associated with storage of waste at the generator sites has been done," the spokesperson said.

Replacing parts of the HEPA-filtered ventilation system was expected to be the most challenging part of getting WIPP running again. The DOE spokesperson told Ars that the facility currently has an interim ventilation system that augments the damaged ventilation system, which has been operating at a fraction of its full capacity. That interim ventilation system will get a supplemental ventilation system around the end of September 2017.

WIPP is also in the process of installing a new permanent ventilation system, which should come online around 2021. According to WIPP documents from July 2016, that system will include a new, 55,000-square-foot ventilation building housing 24 HEPA-filter banks that will filter air from underground. The DOE spokesperson said the permanent system is estimated to cost from \$355 million to \$398 million.

For now, though, WIPP is able to receive two shipments of transuranic waste per week, which WIPP officials hope will be increased to four shipments per week by the end of 2017. The first shipment received since 2014 happened on April 10, when a truck of waste arrived from Idaho. According to a WIPP press release, “Initial shipments are expected from Idaho, Savannah River Site and Waste Control Specialists. Shipments from Oak Ridge and Los Alamos National Laboratory are expected later this year.”

Waste delivered to WIPP is designated as either “contact-handled” or “remote-handled” based on the absorbed radiation dose a human would experience from handling the waste.



Ninety-six percent of the waste to be disposed of at WIPP has a dose rate of less than 200 millirem and can be contact-handled.

<https://arstechnica.com/tech-policy/2017/04/nuclear-waste-facility-receives-its-first-shipment-since-2014-accident/>

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The Independent (London, UK)

Dramatic Nuclear Attack Drills Staged Near Manhattan as US-North Korea Tensions Escalate

By Clark Mindock

April 27, 2017

*Officials in New York and Washington DC conducted drills to test preparedness for nuclear and terrorist attacks*

Law enforcement officials, first responders, and agencies at all levels of government are running drills to prepare for massive nuclear and terror attacks in two of America's most populous cities.

The training comes amid heightened national concerns over the nuclear capabilities of North Korea and following a tense 2016 presidential election season in which terrorism was a frequent point of discussion by Donald Trump.

Although the timing of the New York City drills —the nuclear attack simulation was to take place just west of the city in New Jersey — seem particularly topical, officials say that they were preplanned and have nothing to do with the headlines North Korea's missile tests are producing. The terrorist drills will be conducted in Washington, D.C.

"This is something that has been planned well in advance of anything going on in current climate," Lauren Lefebvre, a FEMA spokesperson, told Gothamist. "It's just a test of our ability to communicate across federal, state, and local levels."

A simulation of that attack on the website nucleardarkness.org, which allows users to map out the fire storm area nuclear detonations of various size would create, shows that a nuke the size of the simulated warhead would result in a firestorm that would stretch nearly across the Hudson river.

The New York exercise will include participation from federal agencies like the Department of Defence, the FBI, and the US Army Corps of Engineers. They will work with state and local entities in response to a simulated scenarios in which a 10,000 tonne improvised nuclear device goes off just east of Manhattan.

The Washington simulations were staged at six different sites in the District of Columbia and neighbourhoods in two bordering states. The respondents in the scenario were challenged with multiple different attacks in those areas by multiple teams of faux terrorists.

"Law enforcement officials practice and exercise their skills on their own regularly because that's the best way to ensure we are always ready to respond quickly and professionally," Scott Boggs, the managing director of homeland security and public safety for the Metropolitan Washington Council of Governments, said in a statement announcing the tests. "On April 26, we'll go one step further and stage a very realistic emergency event involving





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multiple sites and actors posing as the casualties. However, there is no reason for residents to be alarmed because the exercise will occur in a controlled environment.”

There were no plans for live actors playing victims in the New York simulation but actors were going to be used in Washington.

<http://www.independent.co.uk/news/world/americas/us-politics/new-york-nuclear-attack-drills-manhattan-north-korea-bomb-threat-trump-a7704516.html>

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BBC News (London, UK)

North Korea Tensions: US Installs Missile Defence System in S Korea

Author Not Attributed

April 26, 2017

*The US military has started installing a controversial missile defence system at a site in South Korea, amid high tensions over neighbouring North Korea's nuclear and missile ambitions.*

The Thaad system is designed to protect against threats from North Korea.

Hundreds of local residents protested against the deployment, as vehicles carrying equipment arrived at the site in the south of the country.

China argues Thaad will destabilise security in the region.

The US has in recent days deployed warships and a submarine to the Korean peninsula, amid fears North Korea could be planning further missile or nuclear tests.

The Trump administration, which has been urging China to rein in its ally, North Korea, is due to hold a classified briefing for senators on the situation at the White House later on Wednesday.

The Terminal High-Altitude Area Defense (Thaad) system is designed to intercept and destroy short and medium-range ballistic missiles during their final phase of flight.

"South Korea and the United States have been working to secure an early operational capability of the Thaad system in response to North Korea's advancing nuclear and missile threat," South Korea's defence ministry said in a statement.

The system - agreed last year under the Obama administration - is not expected to be operational until the end of 2017, it added.

The development coincides with China launching a new aircraft carrier - the first to be made domestically - in a bid to boost its own military presence in the region.

Protests at home

Television footage showed military trailers carrying what appeared to be defence equipment to a disused golf course some 250km (155 miles) south of the South Korean capital Seoul on Wednesday morning.

Dozens of police lined the road, trying to block hundreds of protesters, some of whom were hurling water bottles at the vehicles.

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More than 10 people were injured in the clashes with police, activists said. Many of the protesters were local residents of the two towns closest to the military site.

"We will continue our fight and there's still time for Thaad to be actually up and running so we will fight until equipment is withdrawn from the site and ask South Korea's new government to reconsider the plan," protester Kim Jong-kyung told Reuters news agency.

Police were unable to confirm the casualties.

What is the Terminal High Altitude Area Defense System (Thaad)?

Shoots down short and medium-range ballistic missiles in the terminal phase of their flight

Uses hit-to-kill technology - where kinetic energy destroys the incoming warhead

Has a range of 200km and can reach an altitude of 150km

US has previously deployed it in Guam and Hawaii as a measure against potential attacks from North Korea

What impact will S Korea's expanded missile defence system have?

China has expressed "serious concern" over the Thaad deployment and is urging the US and South Korea to withdraw the system, foreign ministry spokesman Geng Shuang told reporters on Wednesday.

The deployment has caused significant tension with China - South Korea's largest trading partner - and coincided with a number of economic measures imposed by China, including a ban on tour groups which saw a 40% drop in the number of Chinese visitors in the past month.

South Korea last month lodged a complaint with the World Trade Organization, but China denies its recent moves are related to the Thaad deployment.

War of words

With tensions high in the region, North Korea and the US are continuing to exchange heated rhetoric over the scale of Pyongyang's missile and nuclear programme.

US Vice-President Mike Pence warned North Korea not to "test" President Donald Trump, after it conducted a failed ballistic missile test on 16 April.

On Tuesday, a US submarine - the USS Michigan - joined a group of warships in the Korean peninsula led by aircraft carrier Carl Vinson.

US President Donald Trump had earlier vowed to send an "armada" to the region over North Korea's missile tests.

North Korea meanwhile threatened to sink the aircraft carrier and launch a "super-mighty pre-emptive strike" against what it called US aggression.

Chinese President Xi Jinping urged "restraint" on North Korea in a telephone call with President Trump on Monday.

<http://www.bbc.com/news/world-asia-39716099>

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RT (Moscow, Russia)

US Launches Minuteman III ICBM to Show 'Nuclear Capabilities' Amid N. Korea Tensions

Author Not Attributed

April 26, 2017

An unarmed intercontinental ballistic missile (ICBM) has been launched from a US Air Force base in California to ensure its “effectiveness, readiness and accuracy,” and demonstrate “national nuclear capabilities,” according to the US military.

The Minuteman III missile test comes amid rising tensions on the Korean Peninsula, with a carrier strike group led by the USS Carl Vinson approaching North Korean waters. However, a spokeswoman for the Air Force Global Strike Command says the test was planned in advance and is not connected with the situation in North Korea, and the launches happen on regular basis, according to the Washington Examiner.

The launch is scheduled on Wednesday between 12:01am to 6:01am (0701GMT to 1301GMT) from North Vandenberg Air Force Base, according to the 30th Space Wing, which is conducting the test.

“These Minuteman launches are essential to verify the status of our national nuclear force and to demonstrate our national nuclear capabilities,” the commander of the unit, Colonel John Moss, said in a statement.

The test launch is aimed at validating and verifying “the effectiveness, readiness, and accuracy of the weapon system,” according to the Air Force Global Strike Command.

Despite the fact that the US military denied all connections of the launch with the tensions between Washington and Pyongyang, the drills have raised concerns and received criticism from the Nuclear Age Peace Foundation. The organization accused the US of a “clear double standard,” and advocated for “diplomacy rather than military provocations,” said the foundation president, David Krieger, as cited by the Los Angeles Times.

“It views its own tests as justified and useful, while it views the tests of North Korea as threatening and destabilizing,” Krieger said, also warning of increasing danger of such moves.

He also tweeted that nuclear-capable missile tests are simply a waste of money.

However, the “lethal and ready” capability of the ICBM was praised as a signal for the US enemies following its successful simulated electronic firing on April 11.

“The Simulated Electronic Launch of a Minuteman III ICBM is a signal to the American people, our allies, and our adversaries that our ICBM capability is safe, secure, lethal and ready,” the 625th Strategic Operations Squadron commander, Lt. Col. Deane Konowicz, said in a statement.

Minuteman III ballistic missiles were initially deployed in 1970 and are approaching the end of their useful lifespan of 60 years.



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Washington has recently launched a massive trillion-dollar program to modernize, support, and maintain its nuclear air-land-sea triad, which also includes Ohio-class submarines and B-52 strategic bombers, over the next 30 years.

<https://www.rt.com/usa/386175-minuteman-iii-test-launch/>

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The Nation (Lahore, Pakistan)

The Next Super Weapon Could be Biological

By Peter Apps

April 21, 2017

With the threat of chemical weapons in Syria and nuclear arms in North Korea, the risk of biological weapons has largely dropped off the international agenda. But evolving technologies and genetic engineering may open the door to new dangers.

Other than the “anthrax in the mail” attacks that followed 9/11, killing five people, there have been few serious attempts at biological attacks in recent years. Most global powers scaled back their biological weapons research in the 1970s, partly because of the difficulties of getting fragile bacteria and viruses to survive being dropped in bombs or missiles, or even sprayed.

Militant groups like al Qaeda and Islamic State have largely embraced the other end of the technological spectrum, turning to basic but brutal tactics such as using a car or truck to attack pedestrians in Nice, Berlin and elsewhere.

Most scientific and security experts agree the risk remains relatively low. That may change with the proliferation of basic genetic engineering technologies, some small and cheap enough to be used at home. (This gene-editing kit, built by a former NASA bioengineer, was marketed last year.) The unscrupulous can now tamper with the DNA of bacteria or viruses to make them that much more lethal and potentially hard to treat.

Regulations on biological and genetic research vary widely between countries - but making weapons with such techniques is largely illegal under the 1975 Biological Weapons Convention. Some experts worry, however, that recent advances may make it easier to design more effective and lethal new pathogens. In February, Microsoft founder Bill Gates warned that a conflict involving such weapons could kill more people than nuclear war.

When scientists first sequenced a single human genome in 2003 - allowing them to understand what each small piece of biological coding meant - it was a vast and expensive undertaking. Now, computing power means the cost of that kind of technology - analyzing the difference between the DNA of individual humans, animals, plants and pathogens- is nose-diving by the year. Some scientists have raised the still-controversial idea that as the availability of basic genetic engineering techniques also rises, it could become easier to create new, more sophisticated weapons, perhaps targeted to the DNA of an individual or even an entire ethnic group.

Last month Senator Joseph Lieberman - who has been warning of biological attack since before 9/11 and has said the United States has been “damn lucky” to avoid it - called on President Donald Trump and Congress to make biodefense a national priority.

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In a 2010 paper, former CIA officer Rolf Mowatt-Larsen described how al Qaeda wanted to acquire biological weapons with roughly the same level of priority that it sought a stolen nuclear weapon. It never came close to getting either, focusing instead on more conventional attacks.

A report last year from the Combating Terrorism Center at the US Military Academy at West Point concluded Islamic State, too, was keen to acquire biological weapons. That group has already used basic chemical weapons, including in the battle for Mosul, although it has been unable to inflict significant casualties with them.

Even without a deliberate attack, the threat of a mass pandemic is real, and organizations such as the US Centers for Disease Control and Prevention and the World Health Organization are always on the lookout for signs of outbreak. Scientists have been warning for decades that mankind is at risk for a serious pandemic on the scale of Spanish influenza, which killed an estimated 50 million to 100 million people a century ago.

The modern world has a host of techniques to fight such infections. But it also has vulnerabilities. Air travel - and some argue, mass migration - make it easier for infections to spread faster.

An Islamic State laptop obtained in 2014 contained documents that examined ways of harvesting and using bubonic plague from animals, the West Point report said. But it concluded that, like other groups, IS remained “extremely unlikely” to acquire the capability to mount a mass casualty attack using biological weapons.

During the 2014 Ebola outbreak in West Africa, Western officials worried Islamic State or another group might try to take advantage. In particular, according to the West Point report, there were worries that it might attempt to get individuals infected and then use them to spread the disease elsewhere.

The reality is that such a technique would have had a limited effect. Any infected individual would have become sick and been identified relatively quickly. And, as with the rest of the outbreak, infection control measures would have brought it under control.

Still, simple attacks can work. In 1984, 751 people fell ill and 45 were hospitalized, mainly in Oregon, after a religious group run by Indian mystic Bhagwan Shree Rajneesh sprayed salmonella into food distribution areas in 10 salad bars. No one died, but it remains the largest biological attack in recent US history - and could well have been fatal if those behind it had used typhoid, as they had at one point considered.

Japan's Aum Shinrikyo cult - responsible for the 1995 Tokyo subway sarin nerve gas attack that killed 12 and hospitalized many more - is generally believed to have had the most sophisticated biological weapons program of any non-state group. It could not successfully execute an attack with anthrax or other pathogens, however - one of the main reasons it switched its focus to chemicals.

The greatest danger may come if any of the handful of people who have relevant expertise decide to mount solo attacks. After anthrax-filled envelopes began to appear in government and other offices in late 2001, Federal Bureau of Investigation agents concluded that a microbiologist and US Army researcher, Bruce Ivins, was likely responsible and was believed to have acted alone. Ivins committed suicide in 2007, shortly before his planned arrest; a panel of scientists later cast doubt on the FBI's evidence against him.

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There are other dangers. If the regime in North Korea were to collapse, some worry Pyongyang could unleash its biological arsenal, which may include smallpox.

World War One saw the emergence of chemical warfare, World War Two the atomic bomb. The next era-defining super weapon, some experts have long warned us, could be biological.

<http://nation.com.pk/international/21-Apr-2017/the-next-super-weapon-could-be-biological>

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Center for International Maritime Security (Washington, DC)

Assessing the United States' Bioterrorism Preparation

By Sam Klein

April 23, 2017

While the United States funds by far the most biomedical research in the private and public sectors, its investment in this space has declined in recent years, as has its share of the total global investment. This decrease stands in stark contrast to the growing threat of biological weapons of mass destruction; there is "reason for concern that future bioterrorism attacks may be more effective than incidents in the past, and disease control facilities in other countries may not be as robust as those in our own." While biological weapons research is a subset of all biological research, the downward trend in the greater field is not promising; the field must be considered holistically as epidemiology, immunology, and related subfields that can inform biological attack response even if they are not all classified as biological weapons defense research. Because the United States' biological WMD preparedness is inadequate, the United States government should substantially increase its investment in biological weapons response, including private- and public-sector biomedical research, treatment coordination infrastructure, and intelligence-driven threat mitigation.

Need for Research

The United States government should invest at least \$155.8 billion next year in public research and private research grants, corresponding to our 2007 figure adjusted for inflation. This was the demonstrated need in 2007, and the need is at least as large now as it was ten years ago given our present state of understanding and preparedness.

Although general epidemiological research is certainly useful in preparing for a targeted outbreak, bioterrorism research must also include more focused analysis. Biological weapons of mass destruction can be qualitatively different from naturally-occurring outbreaks of disease, both in terms of how concentrated they are and in their mode of transfer. This difference can be to the extent that a weaponized pathogen is untreatable by conventional means such as vaccination, as even a naturally occurring analog would respond to treatment. Aerosolizing normally grounded biohazards can render existing epidemiology models of those materials dangerously misleading, as spreading could take place at a far faster pace than expected. These factors all demonstrate the need for dedicated biological weapons research.

In addition to infecting humans, bio-WMD can also attack a population indirectly, for instance via agriculture. Given increasing monoculture and despeciation (i.e. biodiversity loss) in U.S. agriculture, American food supply and agricultural byproducts (e.g. ethanol) are less resilient to targeted bioterrorism.

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A recent (2013) network analysis of the American interdisciplinary approach to bioterrorism research and prevention sought to determine whether the research being produced was covering the bases necessary to produce positive public health outcomes in the event of an attack. It finds value in the decentralized nature of the American approach, but also calls for more interdisciplinary research collaboration and greater “development of discovery techniques that are specialized to bioterrorism and security research sources.” Further investment should be channeled to these areas in addition to general epidemiology research.

### **Treatment Coordination Infrastructure**

In 2004, the Project Bioshield Act appropriated \$5 billion for preparation against likely bioweapons such as anthrax and botulism. This investment included stockpiling millions of vaccines. While this is a good start, momentum for this sort of investment has died down in the absence of political pressure 15 years after 9/11.

Early detection of infection is critical to saving individual lives and identifying and limiting the spread of a biological weapon of mass destruction. This will invariably happen at the local level, so it is critical that doctors on the ground across the country are knowledgeable of the symptoms of deployable biohazards and that they have the ability to quickly report incidents up the chain of command. It is likewise critical that the government continue to invest in bio-WMD epidemiological modeling (distinct from traditional modeling, as stated above) and in infrastructure to track ground-level reports of symptoms with the capability of distinguishing an attack from a natural outbreak (which should be treated differently).

In 2011, the Department of Health and Human Services discontinued a program that outlined a comprehensive model of epidemic response with an emphasis on bioterrorism. The model, known as the Weill/Cornell Bioterrorism and Epidemic Response Model (BERM), was used by hospitals and epidemiologists. It has since been supplanted by CDC guidelines for epidemic response, but extensive research fails to yield a robust replacement that affords the same flexibility as BERM with regard to bioterror-specific cases. The government should invest in consolidating and refining the approach and publicizing it to the necessary channels as mentioned above.

### **Threat Mitigation**

Finally, there is little publicly known intelligence on foreign state and non-state actor bioterrorism capabilities beyond the Congressional Research Service figure that several countries plus the United States have or have had biological weapons research programs (if not weapons themselves). This intelligence is extremely limited, in part because of the concealable nature of bio-WMD development. While procurement of some dangerous biological agents can be difficult outside of visible controlled facilities, others require less effort. However, the public may lack the fear and urgency needed to motivate policymakers to invest in biological weapons threat mitigation. In 2003, Colin Powell famously held a model vial of “anthrax” to the United Nations Security Council to make the case of invasion. While the Hussein regime was in fact weaponizing biological weapons including anthrax, simultaneous failures of U.S. intelligence cast a shadow on all of the WMD intelligence.

One of the major deterrents to weaponizing biologics is the difficulty in controlling their spread; unlike conventional weapons and other WMD, biological weapons quite literally have “lives of their own” and, once deployed, could ostensibly infect the assailant’s

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population. However, one could conceive of a scenario in which the assailing population has been vaccinated so that the attack only affects the intended target.

#### Conclusion

Biological weapons are a clear and present danger to the United States, and the country's understanding of and preparation for an attack are grossly inadequate. Substantial increases in biological defense research, crisis management, and threat prevention are crucial to increase the security of American citizens.

<http://cimsec.org/assessing-united-states-bioterrorism-preparation/32137>

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YaleGlobal Online (New Haven, CT)

Russia and Trump Must Be Partners to Assure Nuclear Security

By Richard Weitz

April 25, 2017

*Despite tensions over Ukraine and interference with elections, Russia and the US must lead on nuclear security*

Having completed his summit with Chinese President Xi Jinping, in talks that apparently focused on Syria and Korea, Donald Trump has now met with most of the world's key leaders with the exception of Russian President Vladimir Putin. Despite all the earlier talk of bromance between the two leaders, a delay is not surprising in light of the controversy surrounding Russia.

When this meeting occurs, the discussion will likely focus on military and political developments in Syria, Ukraine and other regions. The two presidents might also discuss non-interference in national elections and promoting security in Afghanistan and Central Asia, where Washington and Moscow agree on the imperative of limiting Islamic extremism but differ on how to do so.

The most crucial issue for their first personal encounter will be arms control, nonproliferation of weapons of mass destruction and nuclear security – the three main dimensions of Russian-US strategic cooperation. The latter two issues have greater prospects, since Moscow and Washington agree on the need to deny North Korea, Iran, and other state and non-state actors access to nuclear weapons.

Neither Russia nor the United States wants North Korea to have nuclear weapons, test ballistic missiles or engage in WMD proliferation. US policymakers see these activities as direct threats to US security, while Russian leaders fear that they could cause conflict on their borders and strengthen US alliances in Asia, in addition to other problems.

The Trump administration has ordered a review of the 2015 Iran nuclear deal. Russia can help sustain what is formally known as the Joint Comprehensive Plan of Action by pressing Tehran to limit its long-range ballistic missile development program as well as Iran's confrontational regional policies. Moscow and Washington should also discuss directly, as well as with other parties, what nuclear activities Iran should pursue after the current nuclear deal expires.





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Russia and the United States must renew their partnership for preventing, detecting, deterring and responding to threats of nuclear terrorism. For example, Moscow and Washington could take measures to make the global nuclear fuel cycle more safe and proliferation-resistant; consolidate, secure and minimize civilian use of highly enriched uranium; share best practices on responding to nuclear emergencies; and counter illicit nuclear trafficking. With strong Russian-US nuclear security leadership, the world's nuclear future will be safer.

Despite the obstacles, Trump and Putin might even impart new momentum to Russian-US arms control, especially by breaking with outdated Cold War-era frameworks.

In a February 23 interview with Reuters, Trump referred to Moscow's violation of the 1987 Intermediate-Range Forces (INF) Treaty as "a big deal," one he planned to raise with Putin. He also called the Russian-US New Strategic Arms Reduction Treaty, which limits the two nations' longer-range strategic offensive systems, "a bad deal." Media accounts report that Trump told Putin in their January 28 phone call that he would not extend New START after it expires in 2021.

On December 22, Trump also announced on Twitter that the United States "must greatly strengthen and expand its nuclear capability until such time as the world comes to its senses regarding nukes." The next day, the president elaborated that, he would not shy away from "an arms race [since]... we will outmatch them at every pass and outlast them all."

Trump's remarks are hardly definitive as his administration has yet to fill many of senior- and mid-level agency positions. Such officials would lead the impending comprehensive nuclear posture review and other national security assessments to generate options for future defense initiatives, arms-control policies and budget programs.

And Trump's comments differ from the post-Cold War US policy of relying less on nuclear weapons and more on conventional arms and diplomatic tools. The improving precision and effectiveness of conventional weapons enable US non-nuclear forces to achieve missions that previously required nuclear weapons.

Still, Trump will likely continue Obama's plans to develop the next generation of US nuclear forces, including a new intercontinental ballistic missile, strategic bomber and ballistic missile launching submarine. Since this modernization will take decades, the United States should want to continue START-like limits on Russian nuclear forces. For the next decade, Russia can more easily expand its nuclear arsenal due to its ongoing rearmament program, which has added dozens of new strategic delivery vehicles each year.

Except for calling for more military spending, Trump's team has reversed campaign rhetoric about denigrating US foreign military alliances. This reversal is understandable. This network of security partnerships, while costly in terms of US defense spending and sometimes lives, provides unparalleled US strategic advantages over potential rivals with foreign military allies, forward operating and staging bases, diplomatic and intelligence assistance, and international legitimacy for even primarily US unilateral operations.

Yet, the United States must think creatively regarding how to give Russia a larger stake in the European security order to minimize tensions and costs for all parties. US officials should reassess Russian proposals for a new European Security Treaty if the process can truly renew commitments to Helsinki Principles or a version of the Adapted Conventional

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Forces in Europe Treaty that would provide more transparency and restraints on military activities in Europe.

Trump's remarks on the INF Treaty are well-targeted. Russian officials have routinely dismissed US claims regarding Russian treaty violations as unfounded, hypocritical, part of a post-Ukraine containment strategy or most recently as "fake" news seeking to sabotage efforts of the new administration to improve Russian-U.S. relations. Until the allegations of Russian cheating are resolved, the US Senate is unlikely to ratify another major bilateral arms-control treaty.

More generally, Russian behavior regarding the INF Treaty and the growing reference to nuclear weapons in Moscow's discourse have led to declining support for arms control among US political leaders. Trump could make resolving the INF dispute a central driver of renewed Russian-US ties and the two countries' joint contribution to global security.

Washington and Moscow made an unsuccessful effort to induce other countries to adhere to the INF Treaty a decade ago. Now with Trump threatening to allow New START to expire and engage in an unbridled nuclear arms race, other countries might be more willing to adopt some restraints on their own weapons.

One deal might be that, in return for a US promise not to withdraw from New START and consider extending the treaty after expiration in 2021, Russia would acknowledge that it has an INF-covered system and eliminate the missile, its launchers, and related research and development infrastructure in a verifiable manner as well as stop further development, testing, production and deployment of INF-banned missiles.

If Moscow refuses to eliminate the contested missile, the Trump administration might instead allow Russia to count INF-range missiles within Russia's New START limits in exchange for a similar waiver for some US strategic system.

The Trump administration could even seek a more comprehensive arms-control deal that would encompass more weapons types, such as non-strategic tactical nuclear weapons, non-deployed and reserve warheads, space-based weapons, long-range conventionally-armed hypersonic glide vehicles and ballistic-missile defenses. Trump is unlikely to make unilateral concessions, so any constraints must be equivalent if not identical.

To address concerns about the capabilities of the other nuclear powers, Trump and Putin might jointly approach China, Britain, and France to accept unilateral limits, make their nuclear activities transparent and join in multinational confidence-building measures.

With the new US administration open to rethinking Russian-US relations and nuclear security, the time has come to reconsider old truths and seek new paths to a more secure nuclear future.

<http://yaleglobal.yale.edu/content/russia-and-trump-must-be-partners-assure-nuclear-security>

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Foreign Policy in Focus (Washington, DC)

These Nuclear Breakthroughs Are Endangering the World

By Conn Hallinan

April 26, 2017

*How a growing technology gap between the U.S. and its nuclear-armed rivals could lead to the unraveling of arms control agreements — and even nuclear war.*

At a time of growing tensions between nuclear powers — Russia and NATO in Europe, and the U.S., North Korea, and China in Asia — Washington has quietly upgraded its nuclear weapons arsenal to create, according to three leading American scientists, “exactly what one would expect to see, if a nuclear-armed state were planning to have the capacity to fight and win a nuclear war by disarming enemies with a surprise first strike.”

Writing in the Bulletin of Atomic Scientists, Hans Kristensen, director of the Nuclear Information Project of the Federation of American Scientists, Matthew McKinzie of the National Resources Defense Council, and physicist and ballistic missile expert Theodore Postol conclude that “Under the veil of an otherwise-legitimate warhead life-extension program,” the U.S. military has vastly expanded the “killing power” of its warheads such that it can “now destroy all of Russia’s ICBM silos.”

The upgrade — part of the Obama administration’s \$1 trillion modernization of America’s nuclear forces — allows Washington to destroy Russia’s land-based nuclear weapons, while still retaining 80 percent of U.S. warheads in reserve. If Russia chose to retaliate, it would be reduced to ash.

### **A Failure of Imagination**

Any discussion of nuclear war encounters several major problems.

First, it’s difficult to imagine or to grasp what it would mean in real life. We’ve only had one conflict involving nuclear weapons — the destruction of Hiroshima and Nagasaki in 1945 — and the memory of those events has faded over the years. In any case, the two bombs that flattened those Japanese cities bear little resemblance to the killing power of modern nuclear weapons.

The Hiroshima bomb exploded with a force of 15 kilotons, or kt. The Nagasaki bomb was slightly more powerful, at about 18 kt. Between them, they killed over 215,000 people. In contrast, the most common nuclear weapon in the U.S. arsenal today, the W76, has an explosive power of 100 kt. The next most common, the W88, packs a 475-kt punch.

Another problem is that most of the public thinks nuclear war is impossible because both sides would be destroyed. This is the idea behind the policy of Mutually Assured Destruction, aptly named “MAD.”

But MAD is not a U.S. military doctrine. A “first strike” attack has always been central to U.S. military planning, until recently. However, there was no guarantee that such an attack would so cripple an opponent that it would be unable — or unwilling, given the consequences of total annihilation — to retaliate.

The strategy behind a first strike — sometimes called a “counter force” attack — isn’t to destroy an opponent’s population centers, but to eliminate the other sides’ nuclear

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weapons, or at least most of them. Anti-missile systems would then intercept a weakened retaliatory strike.

The technical breakthrough that suddenly makes this a possibility is something called the “super-fuze”, which allows for a much more precise ignition of a warhead. If the aim is to blow up a city, such precision is superfluous. But taking out a reinforced missile silo requires a warhead to exert a force of at least 10,000 pounds per square inch on the target.

Up until the 2009 modernization program, the only way to do that was to use the much more powerful — but limited in numbers — W88 warhead. Fitted with the super-fuze, however, the smaller W76 can now do the job, freeing the W88 for other targets.

Traditionally, land-based missiles are more accurate than sea-based missiles, but the former are more vulnerable to a first-strike than the latter, because submarines are good at hiding. The new super-fuze does not increase the accuracy of Trident II submarine missiles, but it makes up for that with the precision of where the weapon detonates. “In the case of the 100-kt Trident II warhead,” write the three scientists, “the super-fuze triples the killing power of the nuclear force it is applied to.”

Before the super-fuze was deployed, only 20 percent of U.S. subs had the ability to destroy re-enforced missile silos. Today, all have that capacity.

Trident II missiles typically carry from four to five warheads, but can expand that up to eight. While the missile is capable of hosting as many as 12 warheads, that configuration would violate current nuclear treaties. U.S. submarines currently deploy about 890 warheads, of which 506 are W76s and 384 are W88s.

The land-based ICBMs are Minuteman III, each armed with three warheads — 400 in total — ranging from 300 kt to 500 kt apiece. There are also air and sea-launched nuclear tipped missiles and bombs. The Tomahawk cruise missiles that recently struck Syria can be configured to carry a nuclear warhead.

### The Technology Gap

The super-fuze also increases the possibility of an accidental nuclear conflict.

So far, the world has managed to avoid a nuclear war, although during the 1962 Cuban missile crisis it came distressingly close. There have also been several scary incidents when U.S. and Soviet forces went to full alert because of faulty radar images or a test tape that someone thought was real. While the military downplays these events, former Secretary of Defense William Perry argues that it is pure luck that we have avoided a nuclear exchange — and that the possibility of nuclear war is greater today than it was at the height of the Cold War.

In part, this is because of a technology gap between the U.S. and Russia.

In January 1995, Russian early warning radar on the Kola Peninsula picked up a rocket launch from a Norwegian island that looked as if it was targeting Russia. In fact, the rocket was headed toward the North Pole, but Russian radar tagged it as a Trident II missile coming in from the North Atlantic. The scenario was plausible. While some first strike attacks envision launching a massive number of missiles, others call for detonating a large warhead over a target at about 800 miles altitude. The massive pulse of electro-magnetic radiation that such an explosion generates would blind or cripple radar systems over a broad area. That would be followed with a first strike.



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At the time, calmer heads prevailed and the Russians called off their alert, but for a few minutes the doomsday clock moved very close to midnight.

According to the Bulletin of Atomic Scientists, the 1995 crisis suggests that Russia does not have “a reliable and working global space-based satellite early warning system.” Instead, Moscow has focused on building ground-based systems that give the Russians less warning time than satellite-based ones do. What that means is that while the U.S. would have about 30 minutes of warning time to investigate whether an attack was really taking place, the Russians would have 15 minutes or less.

That, according to the magazine, would likely mean that “Russian leadership would have little choice but to pre-delegate nuclear launch authority to lower levels of command,” hardly a situation that would be in the national security interests of either country.

Or, for that matter, the world.

A recent study found that a nuclear war between India and Pakistan using Hiroshima-sized weapons would generate a nuclear winter that would make it impossible to grow wheat in Russia and Canada and cut the Asian Monsoon’s rainfall by 10 percent. The result would be up to 100 million deaths by starvation. Imagine what the outcome would be if the weapons were the size used by Russia, China, or the U.S.

For the Russians, the upgrading of U.S. sea-based missiles with the super-fuze would be an ominous development. By “shifting the capacity to submarines that can move to missile launch positions much closer to their targets than land-based missiles,” the three scientists conclude, “the U.S. military has achieved a significantly greater capacity to conduct a surprise first strike against Russian ICBM silos.”

The U.S. Ohio class submarine is armed with 24 Trident II missiles, carrying as many as 192 warheads. The missiles can be launched in less than a minute.

The Russians and Chinese have missile-firing submarines as well, but not as many, and some are close to obsolete. The U.S. has also seeded the world’s oceans and seas with networks of sensors to keep track of those subs. In any case, would the Russians or Chinese retaliate if they knew that the U.S. still retained most of its nuclear strike force? Faced with a choice committing national suicide or holding their fire, they may well choose the former.

The other element in this modernization program that has Russia and China uneasy is the decision by the Obama administration to place anti-missile systems in Europe and Asia, and to deploy Aegis ship-based anti-missile systems off the Pacific and Atlantic coasts. From Moscow’s perspective — and Beijing’s as well — those interceptors are there to absorb the few missiles that a first strike might miss.

In reality, anti-missile systems are pretty iffy. Once they migrate off the drawing boards, their lethal efficiency drops rather sharply. Indeed, most of them can’t hit the broad side of a barn. But that’s not a chance the Chinese and the Russians can afford to take.

Speaking at the St. Petersburg International Forum in June 2016, Russian President Valdimir Putin charged that U.S. anti-missile systems in Poland and Romania were not aimed at Iran, but at Russia and China. “The Iranian threat does not exist, but missile defense systems continue to be positioned.” He added, “a missile defense system is one element of the whole system of offensive military potential.”

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## Unraveling Arms Accords

The danger here is that arms agreements will begin to unravel if countries decide that they are suddenly vulnerable. For the Russians and the Chinese, the easiest solution to the American breakthrough is to build a lot more missiles and warheads, and treaties be damned.

The new Russian cruise missile may indeed strain the Intermediate-Range Nuclear Forces Treaty, but it is also a natural response to what are, from Moscow's view, alarming technological advances by the U.S. Had the Obama administration reversed the 2002 decision by George W. Bush's administration to unilaterally withdraw from the Anti-Ballistic Missile Treaty, the new cruise might never have been deployed.

There are a number of immediate steps that the U.S. and the Russians could take to de-escalate the current tensions. First, taking nuclear weapons off their hair-trigger status would immediately reduce the possibility of accidental nuclear war. That could be followed by a pledge of "no first use" of nuclear weapons.

If this does not happen, it will almost certainly result in an accelerated nuclear arms race. "I don't know how this is all going to end," Putin told the St. Petersburg delegates. "What I do know is that we will need to defend ourselves."

<http://fpif.org/these-nuclear-breakthroughs-are-endangering-the-world/>

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TASS (Moscow, Russia)

US Not Ready Yet to Restart Arms Control Dialogue, Russian Diplomat Says

Author Not Attributed

April 24, 2017

*"Almost all middle-ranking and high-ranking officers of the Department of State with the rarest exception have been sacked," the diplomat said*

The US is not yet ready to restart a dialogue with Russia on armament control issues, the director of the Russian Foreign Ministry's department for non-proliferation and arms control told a news conference on Monday.

"This is an objective reality," Mikhail Ulyanov said. "This is the way the machinery of the American state is built, it needs some time after the new president has moved into the White House to work out new approaches and start translating them into life. This is called foreign policy review, and it is far from being completed," Ulyanov added.

With this in view, the diplomat drew attention to another problem. "Almost all middle-ranking and high-ranking officers of the Department of State with the rarest exception have been sacked," he explained. Ulyanov said there haven't been new appointments and "there are even no people with whom it would be possible to discuss this issue (arms control)".

He said additional time was needed to see all this settled, while meanwhile "there is no sense in building castles in the air".

"Russia is ready for a constructive conversation," he went on. "If this conversation begins, and it must begin because the absence of such a dialog is an absolutely abnormal situation,



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we will be pushing our own agenda but at the same time seek solutions that would not damage our interests," the diplomat said.

"This must be a normal diplomatic process, but it has not yet started," Ulyanov added.

<http://tass.com/politics/942991>

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USNI News (Annapolis, MD)

PACOM: U.S. Should Renegotiate INF Missile Treaty to Better Compete with China

By Megan Eckstein

April 27, 2017

The commander of U.S. Pacific Command said the United States may want to renegotiate the Intermediate-Range Nuclear Forces (INF) Treaty with Russia because the restrictions on conventional land-based weapons are hindering the U.S. military's ability to keep up with China.

The INF Treaty was signed in 1987 between the U.S. and the Soviet Union and bans the signatories – which today includes Belarus, Kazakstan, Russia, and Ukraine instead of the Soviet Union – from having “ground-launched ballistic and cruise missiles with ranges of between 500 and 5,500 kilometers, their launchers and associated support structures and support equipment,” according to a State Department description.

No other country in the world is bound by the treaty, meaning China, North Korea, Iran and others can pursue development of conventional missiles of any range they wish.

“We adhere to the INF treaty religiously, as we should – it’s a treaty we signed on for,” PACOM commander Adm. Harry Harris told the Senate Armed Services Committee today.

“Russia has violated the treaty in the conventional sense, with a conventional cruise missile. So at the end of the day what you have is you have a treaty that binds theoretically two countries: one of them violates it without being held to account, the other adheres to it rigidly as it should. And then all the other countries in the world are not obliged to follow the treaty, and they don’t.”

Harris said China has two missile programs in this range that worry him: the DF-21 anti-ship ballistic missile and the DF-26 anti-ship and anti-ground target “Guam Killer” ballistic missile.

“I think there’s goodness in the INF treaty, anything you can do to limit nuclear weapons writ large is generally good,” Harris said.

“But the aspects of the INF treaty that limit our ability to counter Chinese and other countries’ cruise missiles, land-based missiles, I think is problematic.”

PACOM spokesman Capt. Darryn James told USNI News after the hearing that PACOM wasn’t hoping to build an intermediate-range land-based missile to counter a specific threat set – ships or ground facilities, for example – but rather the inability to develop this type of weapon was generally a disadvantage to the U.S.

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Harris said during the hearing that the treaty doesn't apply to air- and ship-launched missiles but that "more capability against the threats we face is needed in the Pacific Command" area of responsibility.

He added that China is investing in hypersonic weapons and the U.S. should be too – "we must improve our ability to defend against hypersonic weapons and develop our own hypersonic weapons, but again, in the development of hypersonic weapons, offensive hypersonic weapons, we're going to run up against treaty restrictions."

Regarding a way forward with the treaty, Harris said "I would never advocate unilateral withdrawing from the treaty because of the nuclear limitation part of it, but I do think we should look at renegotiating the treaty, we should consider it, because ... there's only two countries that signed on to it and one of them doesn't follow it, so that becomes a unilateral limitation on us."

<https://news.usni.org/2017/04/27/pacom-u-s-should-renegotiate-inf-treaty-that-limits-conventional-mid-range-missiles>

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The Diplomat (Tokyo, Japan)

Failed North Korean Missile Tests: Faulty Engineering or a Covert US Offensive Plan?

By Alexis Lavi and Matthew Flug

By April 27, 2017

*What would the United States need to credibly attack North Korean missile development by cyber means?*

America's attention has quickly shifted from the Middle East to East Asia, where North Korea has recently tested and launched multiple ballistic missiles. The Democratic People's Republic of Korea (DPRK) has had several missile launches over the past few years, regardless of UN sanctions and pressure from the west. However, the most recent launch this April was unsuccessful.

Failed missile tests for the North Korean regime are routine. According to the New York Times, "Eighty-eight percent of the launches of the North's most threatening missiles have self-destructed since the covert American program [targeting DPRK's strategic weapons research] was accelerated three years ago." Notwithstanding these failed attempts, many analysts and observers are seeing signs of the North's growing nuclear capabilities. In 2016, North Korea conducted several nuclear tests — which detonated more than twice the destructive force of the Hiroshima bomb during WWII. And the latest military showcase, honoring the nation's founder, Kim Il-sung, Kim Jong-un's grandfather, is another marker of North Korea's public military strength.

The goal of this showcase was to signal to the world — both allies and enemies — that North Korean military prowess and technological advancements were fast improving. April's missile launches had the chance to exemplify North Korea's credible engineering and evolving technologies, similar to how the 2014 Sony cyber-attacks confirmed U.S. concern over North Korea's cyber capabilities. Instead, this April's failed missile launches reignited discussions on the U.S.'s cyber offensive capabilities and Washington's willingness to employ preemptive measures.

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While the failed launch could simply be blamed on poor engineering or human error, the prospect of intentional efforts of intervention through cyber means to disrupt these tests is also a feasible notion. A U.S. offensive program within the U.S. Cyber Command and National Security Agency designed to degrade North Korea's nuclear capabilities now seems more likely than ever before. Such precedent exists, for example, when the U.S. along with Israeli counterparts engineered the Stuxnet cyber weapon to disrupt Iran's nuclear program. If the U.S. is actively targeting Pyongyang's nuclear program or disrupting one-off tests, then a combination of human intelligence, signals intelligence, and cyber tactics are undoubtedly necessary. Regardless of whether the possible U.S. interference last week was an isolated event or an indication of an attempt to cripple their nuclear the program, if an intentional effort was made to covertly thwart North Korea's militaristic efforts, it would require a combination of the following factors:

Intimate knowledge of the programmable logic controls of their missile systems;

Vulnerabilities and points of failure within military computer networks;

Insight into the supply chain to manipulate, tamper, or corrupt hardware, firmware, or software before reaching the North;

A craft exploit to target missile launching capabilities;

Spies and strategic reconnaissance that have penetrated North Korea's most elite offices and programs; and/or Electronic warfare.

James Acton of the Carnegie Endowment for International Peace assessed that use of cyber-attacks against North Korea are less likely to force Kim Jong-un into a "dangerous, immediate response," though it "might set off dangerous longer-term consequences." The longer-term consequences may include a steady cyber arms race, destructive attacks against U.S. critical infrastructure or commerce (e.g. Sony), or casting a cloud over a Cuban Missile Crisis 2.0, as David Sanger and William Broad have noted. However, the U.S. has vested interest in disrupting the nuclear program of a rogue state while concurrently signaling the sheer power of an active U.S. cyber program.

The potential strike or dedicated campaign against North Korea's nuclear capabilities signals an erosion of President Trump's "America First" approach of isolationism. This change in policy can alter the Administration's course of action, especially with key partners like China. As Vice President Pence alluded, the "era of strategic patience is over" between the two nations. The U.S. appears ready to act with military might, which certainly includes a strong cyber front, to ensure North Korea's position in the region does not strengthen. Expanding economic sanctions and working multilaterally with the UN has proven futile; therefore, the U.S. may turn to a limited set of unilateral actions aimed at keeping Kim Jung-un in his place. Whether a clever political strategy or not, the U.S. has reawakened its standoffish relationship with one of the most secretive and erratic nations in the world. Public attention on North Korea and a presumed use of hard power to counter a rogue nation will certainly change the U.S. position with respect to China, Japan, and South Korea and, perhaps more importantly, the future cyberwarfare rules of engagement.

<http://thediplomat.com/2017/04/failed-north-korean-missile-tests-faulty-engineering-or-a-covert-us-offensive-plan/>

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38 North (Washington, DC)

A Paradigm Shift in North Korea's Ballistic Missile Development?

By Young-Keun Chang

By April 25, 2017

In Kim Jong Un's 2017 New Year's speech, he announced that North Korea is in the final stage of preparations to test launch an inter-continental ballistic missile (ICBM). Since then, North Korean media has repeatedly threatened that the launch will occur at a time and place of the North Korean leader's choosing. On February 12, following multiple failures of the Musudan intermediate-range ballistic missile (IRBM), North Korea conducted a test launch of a new type of IRBM, the "Pukguksong-2." Although not quite a mobile ICBM, this test suggests that Pyongyang has made greater-than-expected progress toward the test launch of a solid-fuel ICBM. North Korea also unveiled what appears to be its new solid propellant ICBM, presumed to be the Pukguksong-3, enclosed in a canister in the massive military parade on April 15.

Limitations of the Musudan Missile

Throughout 2016, North Korea test launched Musudan missiles employing high-energy liquid propellants eight times, with only one successful attempt. These tests used a lofted, high-angle trajectory, presumably to reduce the range of the missiles and avoid any escalated tensions that might occur from flying over Japan. However, from an operational perspective, a lofted launch can also make the reentry vehicle (RV) descend more quickly during the terminal phase, allowing missile defenses less time to intercept them. It seems that these consecutive test failures exposed the limitations of its engine, which was developed by reverse engineering the Russian R-27 submarine-launched ballistic missile (SLBM). The one successful flight test of the Musudan, conducted in June 2016, was likely aimed at simulating the velocity and environment of ICBM reentry by reaching a higher peak altitude of more than 1,400 km with a decreased range of 400 km.

New Technologies Demonstrated by Pukguksong-2 IRBM Test Launch

The Pukguksong-2 IRBM demonstrated a new solid propellant propulsion system. North Korea officially announced that this missile employed technologies used in the Pukguksong-1 SLBM, claiming it had created "the amazing miracle" of completing a new strategic weapons system in just six months. Solid propellant motors shorten launch preparation times by eliminating the time-consuming process of loading liquid propellant, thus reducing the risk of timely detection by intelligence, surveillance and reconnaissance assets. As a result, they improve the missile's survivability and its capability for rapid launch from more secure locations, making effective pre-emptive military strikes more problematic. Solid propellant ballistic missiles have other significant military-operational advantages over conventional liquid propellant ballistic missiles. While being safer and easier to handle and maintain, they are also simpler and can provide better range performance than equivalent-sized liquid propellant missiles. Accordingly, solid propellant missiles pose a greater threat to allied forces than liquid propellant missiles.

Additionally, the Pukguksong-2 missile demonstrated other new capacities:

*Greater Mobility:* First, the Pukguksong-2 IRBM used a caterpillar-type transporter erector launcher (TEL) that can provide better mobility in harsh terrains than wheeled TELs. This new type of TEL, which was shown in the test launch, is based on a heavily modified tank

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chassis originally designed and built by North Korea and is similar in layout to the Soviet Union's SS-14 system.

*Use of a Cold Launch:* Second, the Pukguksong-2 was the first road-mobile missile to employ a cold launch system, which uses compressed gas pressure to eject the missile from the erected canister on the ground before igniting the rocket motor as soon as the missile clears the canister. This system does not require additional volume within the launcher for exhaust plume control, making it feasible to launch from a confined space. Unlike hot launch systems, a cold launch also lowers the possibility of damage or destruction of the TEL in the event of missile failures, since they would happen in mid-flight rather than on the ground. This technology was already demonstrated last August by the Pukguksong-1 SLBM, which was successfully launched from a vertical launch tube.

*Use of High-Angle Trajectory and Reduced Maximum Altitude:* Third, the missile fired on February 12, 2017 was launched at a high angle with a fixed operational range, similar to the Musudan IRBMs and Pukguksong-1 SLBMs launched last year. As the Pukguksong-2 IRBM was fired in a lofted trajectory (almost vertically), the maximum altitude reached should have exceeded 1,000 km. However, the maximum altitude announced by South Korea's military was only 550 km. If this claim is accurate, it would appear that North Korea intentionally launched the missile with a heavier warhead to lower its peak altitude. Based on a simulation by the author, it was estimated that the warhead mass loaded on the Pukguksong-2 would be around 1.6-1.7 tons, which is much heavier than previous warheads (Figure 1). The heavier warhead could allow for greater lethality due to higher yields. This simulation also estimated that the operational range of the Pukguksong-2 IRBM using a minimum energy trajectory (MET) would reach approximately 2,300-2,500 km, which is expected to be shorter than normal IRBM range (Figure 2). The difference between Model A and B lies in the assumed dry masses, such as the interstages and fairing in Figure 1 and Figure 2.

### **Projected Evolution of North Korean Ballistic Missiles**

North Korea has supposedly worked for over 20 years to develop a liquid propellant ICBM with the ability to hit targets in the United States. It appears that through trial and error, they have developed a high-thrust first stage liquid rocket engine for an ICBM, as demonstrated by ground firing tests of an 80-ton Paektusan engine conducted during the past six months. While the exact development path is unclear, Pyongyang may have decided to develop ICBMs with solid propellants in parallel with liquid propellants. In March 2016, the North conducted a successful ground test firing of a solid rocket motor that is 3-3.2 m in length and approximately 1.3 m in diameter. Five months later, it tested the Pukguksong-1 two-stage SLBM with solid propellant motors, which was estimated to be approximately 9 m in length and 1.35 m in diameter (Figure 3).

With the development and successful testing of two new types of solid propellant missiles, North Korea has moved closer to a technological breakthrough that is required to develop an effective road-mobile ICBM. Pyongyang might even be developing two different types of road-mobile ICBMs with solid propellant motors; one could be based on the liquid propellant KN-14 configuration and size—which was displayed in a 2015 military parade—to minimize the development time. The other could be a completely new design to meet stricter mission requirements. The operational performance of new solid propellant ICBM, referred to as the Pukguksong-3, has been analyzed under the assumption that its



dimensions are based on the KN-14. The length and diameter of the mobile KN-14 ICBM are assumed to be around 17 m and 1.9-2.0 m, respectively (Figure 3).

In the massive military parade in Pyongyang on April 15, 2017, North Korea displayed two different types of Pukguksong-3 ICBMs, both enclosed in launch tubes mounted on trucks (see Figures 4 & 5). Although the exact dimension and size of the new ICBM was not clear, one can estimate from the dimensions of the KN-14 that its range is up to 12,200 km with a 550 kg warhead and 10,300 km with a 750 kg warhead for a missile diameter of 1.9 m. These operational ranges may be enough to reach the US mainland (Figure 6).

North Korea may, in the future, replace all its liquid propellant ballistic missiles with solid propellant missiles. The first to be replaced will most likely be the Scud short-range ballistic missiles (SRBM) and Nodong medium-range ballistic missiles (MRBM). Both use conventional liquid propellant engines and more than 800 units are believed to have been deployed. Considering the North's economic problems, replacement would happen gradually and possibly not on a one-for-one basis. A rapid replacement of the Musudan IRBM fleet, which also uses a high energy liquid propellant, with the Pukguksong-2 solid propellant IRBM may occur if the Musudan continues to prove unreliable.

The future evolution of the road-mobile ICBM is difficult to predict. However, if North Korea succeeds in the test flights of a solid propellant ICBM and continues to make improvements in its reliability, Pyongyang will likely abandon its liquid propellant ICBM designs.

#### What Explains North Korea's Solid Propellant Rocket Technology?

How did North Korea make such significant progress in the solid propulsion technology field? As is well known, the structure of a solid propellant rocket is much simpler than that of a liquid propellant rocket, but the complexity of the design grows exponentially with its size, requiring extensive testing and design iterations for development. Therefore, it is entirely possible that Pyongyang has been working on solid propellant technology for more than a decade while simultaneously developing the indigenous Musudan liquid propellant engine. It is also possible that Pyongyang is concurrently developing the solid propellant Pukguksong-2 IRBM and solid propellant Pukguksong-3 ICBM. As such, it would not be surprising if the North also decides initially to pursue concurrent development of both solid and liquid propellant ICBMs (Figure 7).

Some experts also suspect that North Korea's accelerated development of solid fuel rockets is connected to Iran's missile program—more specifically, that the North provided liquid propellant missile technology to Iran in exchange for solid propellant missile technology. However, Iran only started to develop solid propellant missiles in the early 2000s, and its two-stage solid propellant Sajjil missile is still in development. In short, Iran has not yet mastered this technology. Nevertheless, a connection between the two countries is possible, but it is difficult to substantiate such claims due to the lack of solid evidence.

#### Conclusion

Ultimately, the transition from liquid to solid propellant missiles will bring about a fundamental paradigm shift in North Korean missile systems (Figure 8). A road-mobile ICBM, tentatively named the Pukguksong-3, employing solid propellant rocket motors could easily achieve the range performance required to hit the US mainland in the future, making it a serious potential threat to the United States.

<http://38north.org/2017/04/ychang042517/>

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Channel News Asia (Singapore)

Nations Urged To 'Banish Evil of Chemical Arms'

Author Not Attributed

April 26, 2017

*World leaders on Wednesday urged all nations to help "banish forever the evil of chemical weapons," as the global watchdog warned decades of progress towards eliminating them was under threat.*

World leaders on Wednesday (Apr 26) urged all nations to help "banish forever the evil of chemical weapons," as the global watchdog warned decades of progress towards eliminating them was under threat.

UN chief Antonio Guterres led praise at a solemn ceremony in The Hague for the work of the Organisation for the Prohibition of Chemical Weapons (OPCW) to mark its 20th anniversary.

So far some 95 per cent of the world's declared stockpiles of such arms have been destroyed by the OPCW.

And its dangerous, painstaking work to implement the April 1997 Chemical Weapons Convention won it the Nobel Peace Prize in 2013.

But amid reports of sarin, mustard and chlorine gas attacks unleashed during the bitter civil war in Syria, Guterres warned that despite "two decades of success ... progress is under threat."

"In the Middle East, belligerents are breaking the norm against chemical weapons. The recent attack in Syria was a horrific reminder of this threat. There can be no impunity for these crimes," he said in a video message to the ceremony.

"For 20 years we have been allies in this cause. Now let us resolve to consign these diabolic weapons to the pages of history."

The ceremony was also attended by Dutch King Willem-Alexander and Sweden's Princess Victoria, as well as ambassadors from OPCW-member nations.

Despite the celebrations, "we cannot ignore the black cloud hanging over us", said Dutch Foreign Minister Bert Koenders, referring especially to the Apr 4 suspected sarin gas attack in the Syrian rebel-held town of Khan Sheikhun, the latest in several attacks.

The continued use of such weapons underscored that the OPCW as an independent, neutral body was needed "more than ever before," Koenders added.

In an unprecedented step in November, the OPCW's executive council condemned Syria's use of toxic weapons - its first public condemnation of any of the 192 members of the convention.





## SYRIA THE 'GREATEST TEST'

Syria joined the OPCW in 2013 after denying for years that it had toxic arms. And while 100 per cent of its declared stockpile has been destroyed in an operation involving some 30 countries, there are growing fears that the Syrian regime did not reveal the true extent of its armoury.

OPCW director general Ahmet Uzumcu acknowledged Wednesday that "our collective journey to banish forever the evil of chemical weapons has reached momentous landmarks."

But he warned that "in Syria the OPCW has faced its greatest test of commitment as well as resilience. Our work in Syria is not yet finished. It is of grave concern that we continue to see reports of the use of chemical weapons."

He urged Egypt, Israel, North Korea and South Sudan - the last four countries which have not yet signed the convention - to join up "without delay".

And with some victims in the audience, he paid tribute to those who have suffered most from such deadly weapons, first used on the battlefields of Belgium's Ypres in World War I.

The victims "remind us of the human toll when morality is recklessly abandoned and universal norms callously breached," Uzumcu said. "The work of the OPCW represents the most effective response to such cruelty; a ray of hope illuminating a dark shadow on our history."

<http://www.channelnewsasia.com/news/world/nations-urged-to--banish-evil-of-chemical-arms--8794560>

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South China Morning Post (Hong Kong, China)

US Sets Up THAAD Missile System On Golf Course as North and South Korea Show Off Firepower At Military Drills

Author Not Attributed

April 26, 2017

*The deployment of THAAD has angered China, which is concerned that it could be used to spy on its own facilities.*

In a defiant bit of timing, South Korea announced Wednesday that key parts of a contentious US missile defence system had been installed a day after rival North Korea showed off its military power.

Washington is urging Beijing - Pyongyang's sole major ally - to do more to rein it in, but the Asian giant has reacted with fury to the planned installation of the Terminal High Altitude Area Defence (THAAD) system.

The US and ally South Korea say its deployment, agreed last year, is intended to guard against missile threats from the nuclear-armed North.

But China fears it will weaken its own ballistic capabilities and says it upsets the regional security balance.



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TV footage showed large trailers in camouflage paint carrying what appeared to be missile-related equipment entering a former golf course in the southern county of Seongju on Wednesday morning.

Hundreds of residents - who are concerned over the potential environmental impact - protested angrily, some clashing with police. More than 10 were injured including three who were hospitalised, activists said.

Seoul's defence ministry said Wednesday's move was aimed at "securing operational capability of the THAAD as soon as possible", with a goal of fully installing the batteries by the end of this year.

Admiral Harry Harris, the top US commander in the Asia-Pacific, told Congress late on Wednesday that the missile system should be operational in the coming days.

The South is holding a presidential election next month to choose a successor to ousted leader Park Geun-hye, and Seoul and Washington are pressing ahead with the deployment with some candidates ambivalent over the system, including front-runner Moon Jae-in, of the left-leaning Democratic Party.

His spokesman Park Kwang-on expressed "strong regret" at the delivery, saying it ignored "required procedures".

"This move has shut off any room for policy considerations by the next government and it is very improper," he said.

Beijing condemned the move, with foreign ministry spokesman Geng Shuang telling reporters the THAAD deployment "severely undermines China's strategic security interests".

"It helps in no way to achieve the denuclearisation of the peninsula and regional peace and stability," he said, adding China would "take necessary measures to safeguard its own interests".

Beijing has imposed a host of measures seen as economic retaliation against the South, including a ban on tour groups.

Retail conglomerate Lotte, which previously owned the golf course, has also been targeted, with 85 of its 99 stores in China shut down, while South Korea's biggest automaker Hyundai Motor said Wednesday its Chinese sales fell 44 per cent last month.

THAAD is designed to intercept and destroy short and medium-range ballistic missiles during their final phase of flight.

The latest move comes as tension soars on the Korean peninsula following a series of missile launches by the North and warnings from the administration of US President Donald Trump that military action was an "option on the table". Washington has deployed an aircraft carrier strike group led by the USS Carl Vinson to the peninsula in a show of force, amid signs the North could be preparing for a sixth nuclear test.

In Pyongyang's latest display, leader Kim Jong-un oversaw the country's largest-ever firing drill to mark the founding anniversary of its military, state-run media said Wednesday.

The joint drill saw more than 300 large-calibre self-propelled guns firing simultaneously and torpedo attacks by submarines, state-run KCNA said, demonstrating the country's

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determination to “pour merciless rain of fire on the reckless imperialist US and its dirty followers”, it said.

Seoul held a large annual drill of its own Wednesday, involving some 100 artillery pieces, 90 armoured vehicles and 50 aircraft, as well as 2,000 South Korean and US troops, the defence ministry said.

Late on Wednesday, China’s Foreign Minister Wang Yi urged an end to US-South Korean military manoeuvres to calm tensions on the Korean peninsula.

The US has long pushed for China to make more efforts to curb Pyongyang’s behaviour.

But Beijing says it has less sway over its wayward neighbour than Washington believes.

China’s President Xi Jinping called Monday for “restraint” regarding North Korea in a telephone conversation with Trump.

US defence leaders and other top officials are to give a classified briefing on North Korea to all senators in an unusual meeting at the White House later Wednesday.

<http://www.scmp.com/news/asia/east-asia/article/2090727/parts-us-thaad-missile-system-installed-deployment-site-south>

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Financial Tribune (Tehran, Iran)

Swedish FM: Europe Stands by Iran Nuclear Pact

Author Not Attributed

April 27, 2017

Swedish Foreign Minister Margot Wallstrom highlighted the importance of Tehran-Stockholm ties, saying Europe is united and determined to stand by Iran's 2015 nuclear accord with major powers, which led to the lifting of sanctions against the country.

She made the statement in a Tuesday meeting with Iran's Deputy Foreign Minister for European and American Affairs Majid Takht-Ravanchi, who had traveled to Stockholm at the invitation of his Swedish counterpart, Annika Soder, IRNA reported.

Wallstrom underlined the importance of bilateral cooperation in various sectors, reassuring that moves by Iran to develop its international interactions are in the interest of European and other countries.

"The whole Europe is after implementation of JCPOA," she said, using an acronym for the nuclear deal that stands for the Joint Comprehensive Plan of Action. The Iranian envoy also discussed bilateral, regional and international issues with Soder and Deputy Trade Minister Oscar Stenstrom who were present in the meeting.

Soder underscored her country's desire to develop strong ties with Iran and reiterated that Europe stands united to uphold the landmark accord.

Stenstrom described last year's visit by Sweden Prime Minister Stefan Lofven to Tehran as a historic event, stressing that Europe remains wholly committed to defending and implementing Iran's nuclear deal.

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"The Swedish government is attempting to find solutions for removing banking and financial obstacles to bilateral trade," he said.

Takht-Ravanchi said a "suitable atmosphere" has been created for fostering collaboration in different spheres, particularly after last year's implementation of JCPOA. He hoped that the documents signed during the Sweden premier's visit to Tehran would be implemented through joint follow-up efforts.

The official underlined the necessity of activating the joint economic commission and emphasized the need to remove barriers to banking and financial collaborations.

He enumerated several areas for increasing cooperation between the two states, including environmental issues, water management, renewable energy, waste management and recycling.

"Iran and Europe can be complementary to each other and they should seize the opportunities," he said.

The two sides called for continuation of bilateral negotiations in various fields to achieve stronger agreements on political and diplomatic solutions.

During his visit, the Iranian envoy delivered a speech titled "Iran and Europe in Post-JCPOA: Opportunities and Challenges" at Stockholm International Peace Research Institute.

The talk was attended by a number of elite and political figures of Sweden, including Jan Eliasson, former deputy secretary-general of the United Nations, and Hans Blix, the former head of the International Atomic Energy Agency.

<https://financialtribune.com/articles/national/63157/swedish-fm-europe-stands-by-iran-nuclear-pact>

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New Europe (Brussels, Belgium)

EU, Iran Ink Nuclear Deal

By Kostis Geropoulos

April 24, 2017

*First-ever safety cooperation project*

While US President Donald Trump declared that Iran is failing to fulfill the "spirit" of its nuclear deal with world powers, the European Commission signed the first ever project for nuclear safety cooperation with Iran, under the framework of the Joint Comprehensive Plan of Action (JCPOA). EU-Iran relations have been through different stages and most recently, over the last decade, conditioned by the international dispute over Iran's nuclear programme, and the consequent sanctions regime that was in place against Iran. The lifting of sanctions against Tehran recently has opened the way for a renewal of broader relations. The EU attaches great importance to the highest standards of nuclear safety in Europe and beyond its borders. Through cooperation under the Instrument for Nuclear Safety Cooperation (INSC), the EU contributes to the improvement of nuclear safety levels and efficient and effective nuclear safeguards in non-EU countries.

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The €2.5 million project signed on April 18 aims to enhance the capabilities of the Iranian Nuclear Regulatory Authority (INRA), the European Commission said, adding that it will do so by preparing feasibility study for the Nuclear Safety Centre foreseen in the JCPOA. It will support the INRA in developing a nuclear regulatory framework, working toward the accession by Iran to several international nuclear conventions, including the Convention on Nuclear Safety, and reviewing the results of the stress test to take place in the Bushehr nuclear power plant.

The project is the first of a €5 million action approved by the European Union in 2016 under the Instrument for Nuclear Safety Cooperation. A second project for the stress test at the Bushehr nuclear power plant is going to be signed in the coming weeks.

Negotiations on the Iranian nuclear programme between the E3/EU+3 (EU, France, Germany, the United Kingdom, Russia China and the United States) with Iran resulted in agreement on the JCPOA on July 14, 2015. The deal is aimed at ensuring the exclusively peaceful nature of Iran's nuclear programme while providing for the comprehensive lifting of all UN Security Council sanctions as well as EU and US sanctions related to Iran's nuclear programme.

The Foreign Affairs Council of July 20, 2015 endorsed the JCPOA and also expressed the expectation that this "positive development will open the door to a steady improvement in relations between the European Union, its Member States and Iran, as well as improved Iranian regional and international relations (...)".

On January 16, 2016, "Implementation Day" was reached and the EU lifted all nuclear-related economic and financial sanctions against Iran. This followed verification by the International Atomic Energy Agency (IAEA) that Iran had implemented the agreed nuclear-related measures as set out in the JCPOA.

The conclusion and implementation of the JCPOA has opened the way for a renewal of broader relations. This welcome development allows the EU and Iran to start a gradual engagement, which will take place on the basis of the full implementation of the JCPOA by Iran.

A High Level Dialogue was held on February 8-9, 2016 at Vice-Minister/Political Director level, during which future areas of cooperation between the EU and Iran were identified. Exploratory missions at technical level have followed on energy, research and innovation, transport and economic cooperation. Iranian delegations have come to Brussels at senior official level on education and research and trade and investment.

On April 16, 2016, EU High Representative and Vice President Federica Mogherini led a high level delegation to Iran. The delegation included EU Commissioners Elzbieta Bieńkowska, in charge of Internal Market and Industry, Violeta Bulc, for Transport, Miguel Arias Cañete, in charge of Climate Action and Energy, Carlos Moedas, for Research, Science and Innovation, Tibor Navracsics, in charge of Education, Culture, Youth and Sport, Christos Styliandes, for Humanitarian Aid and Crisis management and Karmenu Vella, in charge of Environment, Maritime Affairs and Fisheries, according to the Commission.

The EU delegation agreed with its Iranian counterparts future areas of engagement and cooperation, including human rights, economic relations, energy and civil nuclear cooperation, environment, migration, drugs, humanitarian aid, transport, civil protection, science, as well as culture. More broadly, regional issues were also discussed and will also be part of a future agenda of dialogue.



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A joint statement between the High Representative and Iranian Foreign Minister Zarif was adopted establishing among others regular political consultations as well as sectoral dialogues in different fields from economy to trade, energy to migration and human rights.

“We aim at a dialogue that is comprehensive in scope, cooperative in the fields where we have mutual interest, and our citizens have mutual interest, a dialogue that can be critical and open in the areas where we know we disagree, looking for common ground, and overall constructive in tone and in practice,” Mogherini told a press conference at the end of the visit. “So you can call it a ‘dialogue of the 4 Cs’: comprehensive, cooperative, critical if needed, constructive always,” she added.

Bieńkowska and Stylianides visited Iran to foster economic and business, and humanitarian cooperation respectively. The Iranian Vice-Presidents, Ali Salehi and Masoumeh Ebtekar visited Brussels to advance civil nuclear cooperation and environment and climate exchanges.

On November 14, 2016 the Foreign Affairs Council adopted conclusions reiterating its “resolute commitment to the Joint Comprehensive Plan of Action (JCPOA)”, and expressing “its support for the development of EU-Iran relations in areas of common interest”, as laid out in the April Joint Statement agreed by Mogherini and Iranian Foreign Minister Mohammad Javad Zarif. The FAC also stated its concerns with the human rights situation and advocated for a more constructive regional environment.

The second round of high-level dialogue took place on November 9 in Brussels at Vice-Minister/Secretary-General level. Separate meetings were held on human rights – as agreed by Mogherini and Zarif – and finance and banking issues. To facilitate further cooperation and with a view to preparing the future opening of an EU Delegation, an EU liaison team was sent to Tehran on May 22, 2016 and is co-located in the Dutch Embassy.

<https://www.neweurope.eu/article/eu-iran-ink-nuclear-deal/>

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RT (Moscow, Russia)

US Missile Shield Aims To Cover Sudden Nuclear Strike Against Russia – General Staff

Author Not Attributed

April 27, 2017

The United States is pursuing global strategic domination through developing anti-ballistic missile systems capable of a sudden disarming strike against Russia and China, according to the deputy head of operations of the Russian General Staff.

There is an obvious link between Washington’s prompt global strike initiative, which seeks capability to engage “any targets anywhere in the world within one hour of the decision,” and the deployment of missile launch systems in Europe and aboard naval vessels across the globe, Lt. Gen. Viktor Poznikhir said at a news briefing on Wednesday.

*“The presence of US missile defense bases in Europe, missile defense vessels in seas and oceans close to Russia creates a powerful covert strike component for conducting a sudden nuclear missile strike against the Russian Federation,” Poznikhir explained.*

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While the US keeps claiming that its missile defenses are seeking to mitigate threats from rogue states, the results of computer simulations confirm that the Pentagon's installations are directed against Russia and China, according to Poznikhir.

American missile attack warning systems, he said, cover all possible trajectories of Russian ballistic missiles flying toward the United States, and are only expected to get more advanced as new low-orbit satellites complement the existing radar systems.

*"Applying sudden disarming strikes targeting Russian or Chinese strategic nuclear forces significantly increases the efficiency of the US missile defense system," Poznikhir added.*

American ABM systems are not only creating an "illusion" of safety from a retaliatory strike but can themselves be used to launch a sneak nuclear attack on Russia.

In a blatant breach of the Intermediate-Range Nuclear Forces Treaty, the standard land-based launching systems can be covertly rearmed with Tomahawk cruise missiles instead of interceptors – and the Pentagon's denial of this fact, according to Poznikhir, is *"at the very least unconvincing."*

Moreover, Washington's unilateral withdrawal from the Anti-Ballistic Missile Treaty, signed in 1972 with the Soviet Union, allowed it to develop more advanced weapons that can now not only pose a threat to targets on the ground but in space as well.

*"In February 2008, the Pentagon demonstrated the possibility of engaging spacecraft with its ABM capabilities," Poznikhir said. "An American satellite at an altitude of about 250 km was destroyed by a Standard-3 missile, an earlier modification, launched from a US Navy destroyer."*

*"Given the global nature of the ABM ships' deployment, the space operations of any state, including the Russian Federation and the People's Republic of China, are under threat."*

Russia has repeatedly voiced its concerns over the risk American ABM systems pose to the global balance of power and thus peace and stability, but has consistently been sidelined.

*"Within the framework of cooperation, we also proposed jointly to develop a missile defense architecture for Europe, which could guarantee security against the impacts of nonstrategic ballistic missiles," said Poznikhir.*

*"However, all Russian initiatives were rejected."*

*"In this regard, Russia is compelled to take measures aimed at maintaining the balance of strategic arms and minimizing the possible damage to national security as a result of the United States' ABM systems expansion."*

*"This will not make the world a safer place," he warned, urging Washington to engage in a constructive dialogue instead of dully repeating that the systems are not aimed at undermining Russia's or China's national security.*

<https://www.rt.com/news/386276-us-missile-shield-russia-strike/>

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Sputnik (Moscow, Russia)

US Plan to Upgrade Tactical Nukes in Europe Imperils the Region - Moscow

April 26, 2017

*US plans to modernize tactical nuclear munitions in Europe is detrimental to regional security, the chief of Russia's General Staff said.*

The US Department of Defense's plans to upgrade its tactical nuclear munitions in Europe covers some 200 aerial bombs, Russian Chief of General Staff Gen. Valery Gerasimov said Wednesday.

*"The Pentagon's plans to modernize tactical nuclear munitions and their storage locations in Europe negatively impact regional security. This is about 200 air bombs deployed in Belgium, Italy, the Netherlands, Germany and Turkey," Gerasimov said at the VI Moscow Conference on International Security.*

Moscow has expressed concerns over NATO's expansion to the east some time ago, stressing that it should be immediately stopped. Since 2014, after Crimea rejoined Russia, NATO has been increasing its military presence in Eastern Europe, using the countries' vulnerability to alleged Russian aggression as a pretext.

Moscow has repeatedly criticized the increased presence of the alliance's troops and military facilities close to the Russian borders.

<https://sputniknews.com/military/201704261053015201-us-nuclear-munitions-europe-russia/>

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BBC News (London, UK)

Syrian Government Made Sarin Used in Khan Sheikhoun, France Says

Author Not Attributed

April 26, 2017

*France says it has evidence showing the Syrian air force "undoubtedly" dropped bombs containing the nerve agent Sarin on a rebel-held town last month.*

Foreign Minister Jean-Marc Ayrault told reporters that samples taken from the scene bore the "signature" of Sarin produced by Syria's government.

At least 87 people were killed in the incident in Khan Sheikhoun, according to an opposition-run health authority.

Syrian President Bashar al-Assad has dismissed it as a "fabrication".

He insists the government has never used chemical weapons and that it turned over all of its stocks in 2013, after it was blamed by Western powers for a Sarin attack on rebel-held suburbs of Damascus that left hundreds dead.

Hundreds of people suffered symptoms consistent with reaction to a nerve agent after what the opposition and the US say was a Syrian Air Force attack on Khan Sheikhoun on 4 April.

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Last week, the Organisation for the Prohibition of Chemical Weapons (OPCW) said analysis of bio-medical samples collected from three victims had presented "incontrovertible" proof that they were exposed to Sarin or a Sarin-like substance.

Wednesday's declassified French intelligence report concludes that the Sarin was manufactured by the Syrian government.

"We know, from a certain source, that the process of fabrication of the samples taken is typical of the method developed in Syrian laboratories," said Mr Ayrault.

"This method is the signature of the regime and it is what enables us to establish the responsibility of the attack. We know because we kept samples from previous attacks that we were able to use for comparison," he added.

The report says France - which backs the opposition to Mr Assad - obtained environmental samples collected at one of the impact points of the suspected attack, and that its analysis revealed the presence of Sarin, the secondary product diisopropyl methylphosphonate (DIMP) and hexamine.

"The process of synthesizing Sarin, developed by the [Syrian government's] Scientific Studies and Research Centre (SSRC) and employed by the Syrian armed forces and security services, involves the use of hexamine as a stabilizer. DIMP is also known as a by-product generated by this process," it adds.

The document concludes that the Sarin from Khan Sheikhoun was produced using the same manufacturing process as that found in an unexploded grenade allegedly dropped by a government helicopter on rebel-held Saraqeb on 29 April 2013.

It also says that rebel and jihadist groups operating in the area around Khan Sheikhoun did not have the capability to employ a neurotoxic agent or access to aircraft. The theory of an attack perpetrated by so-called Islamic State is also not credible because the group is not present in the region, it adds.

"Neither do the French services assess that the theory of a staged attack or manipulation by the opposition is credible, particularly because of the massive influx in a very limited time towards hospitals in Syria and Turkey, and the simultaneous, massive uploading of videos showing symptoms of the use of neurotoxic agents."

The US has carried out a cruise missile strike on an airbase where it said the aircraft that bombed Khan Sheikhoun took off and blacklisted 271 SSRC employees.

<http://www.bbc.com/news/world-middle-east-39717894>

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Tehran Times (Tehran, Iran)

Trump Injected Tougher Anti-Iran Words Into Nuclear Deal Letter

Author Not Attributed

April 26, 2017

U.S. President Donald Trump personally intervened to inject tougher anti-Iran language into a recent State Department letter to Congress that confirmed Iran has been honoring its commitments under the nuclear deal, an American official familiar with the matter has said.

The letter to Congress, which was sent by Secretary of State Rex Tillerson on April 18, certified that Iran is complying with its commitments under the nuclear agreement, or the JCPOA.

Under the deal between Iran and six world powers, Tehran accepted some restrictions on its nuclear activities in return for relief from certain economic sanctions.

In irrelevant remarks, the letter described Iran as “the world’s leading state sponsor of terrorism.” It also said the administration will review whether to re-impose the U.S. sanctions linked to the nuclear program despite Iran’s compliance.

Trump himself is reportedly responsible for the tough language of the letter. He also told Tillerson to issue an anti-Iran public message, in which the secretary of state compared Iran to North Korea. “An unchecked Iran has the potential to travel the same path as North Korea and take the world along with it,” he said on April 19, a day after the letter was issued.

Iranian Foreign Minister Mohammad Javad Zarif took to Twitter to respond to Tillerson’s accusations. He urged the U.S. to change course and fulfill its own commitments under the nuclear agreement.

“We’ll see if U.S. is prepared to live up to the letter of the JCPOA, let alone spirit,” he tweeted. “So far, it has defied both.”

On Wednesday, when asked whether the U.S. president will be committed to the deal, Zarif said, “Don’t pay much attention to his words.”

<http://www.tehrantimes.com/news/412941/Trump-injected-tougher-anti-Iran-words-into-nuclear-deal-letter>

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The Independent (London, UK)

Boris Johnson Says UK Could Join US Military Action In Syria Without Commons Vote

By Ashley Cowburn

April 27, 2017

*The Foreign Secretary says it would be ‘very difficult to say no’ if asked to join offensive against Assad regime by Trump administration*

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Boris Johnson, the Foreign Secretary, has suggested Britain could bypass the House of Commons and join the United States in taking military action against the Syrian regime if it is asked.

Mr Johnson added it would be “very difficult to say no” if Donald Trump’s administration asks the UK for help in taking action against Bashar al-Assad’s regime in response to another chemical attack.

Asked on the BBC’s Radio 4 Today programme whether he could envisage taking military action in the region, he replied: “I think it will be very difficult if the United States has a proposal to have some sort of action in response to a chemical weapons attack, and if they come to us and ask for our support, whether it’s with submarine-based cruise missiles in the [Mediterranean], or whatever it happens to be, as was the case back in 2013, it would be in my view, and I know this is also the view of the Prime Minister, it would be very difficult for us to say no.”

Pressed further on whether the Foreign Secretary would seek approval in the Commons for such a strike, Mr Johnson added: “I think that needs to be tested. As I said I think it would be very difficult for us to say no. How exactly we were able to implement that would be for the Government, the Prime Minister.

“But if the Americans were once again to be forced by the actions of the Assad regime – don’t forget, it was Assad who unleashed murder upon his own citizens with weapons that were banned almost 100 years ago – if the Americans choose to act again and they ask us to help, as I say, I think it would be very difficult to say no.”

Asked whether Theresa May agreed with Mr Johnson that it would be difficult for the UK to say no to a US request for assistance in military action against the Assad regime, the Prime Minister’s official spokesman said the Foreign Secretary was restating a position he had already given to Parliament on 18 April – the day the Prime Minister announced the snap general election.

They added: “All we have stated previously is that the US have been clear that they are not planning any further strikes, but they could reconsider if the Syrian regime uses chemical weapons again and anything beyond that is hypothetical.”

His comments come after US President Donald Trump earlier this month ordered the firing of 59 Tomahawk Cruise missiles from the USS Porter and USS Ross into the Sharyat airfield, in western Homs, in retaliation to the use of chemical weapons on civilians, allegedly by Bashar al-Assad’s dictatorial regime.

Following the chemical attack, and the pictures of dying children that accompanied it, Mr Johnson led an unsuccessful attempt to persuade G7 leaders to implement further economic sanctions on Russia for its continued support of the Syrian dictator.

At the time of the assault Michael Fallon, the Defence Secretary, said Downing Street was fully behind the US but added it is unlikely any further military action will be taken.

Mr Fallon added that the US strike against the Syrian airbase near Homs was intended to deter Bashar al-Assad from carrying out any further chemical weapon attacks but was not the start of a new military campaign.

“We don’t see last night’s strike like that,” he said. “We’ve not asked to be involved in this, this was not a matter for the coalition that’s in Syria and Iraq fighting Daesh.”



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According to the House of Commons Library, there is no legal requirement on the Government to seek parliamentary approval before ordering military action but it has become convention to consult MPs, except in the event of an emergency.

<http://www.independent.co.uk/news/uk/politics/boris-johnson-uk-bypass-commons-vote-syria-military-action-us-mps-parliament-a7704761.html>

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Arab News (Jeddah, Saudi Arabia)

Is Iran Secretly Developing a Nuclear Bomb?

By Majid Rafizadeh

April 27, 2017

Not the first time, new clandestine locations related to Iran's nuclear program have been revealed. Tehran had previously kept secret some of its nuclear-related operations, in violation of the terms of the International Atomic Energy Agency (IAEA), which had failed several times to detect Iran's secret military-nuclear activities. Any current clandestine nuclear activities would not only violate the IAEA terms but also the nuclear deal.

This week, critical information about Iran's nuclear activities was disclosed by the opposition National Council for Resistance of Iran (NCRI). US President Donald Trump followed up by saying Tehran is "not living up to the spirit of the agreement." Michael Anton, a spokesman for the White House National Security Council, said his colleagues are "carefully evaluating" the NCRI information.

The organization first revealed Iran's clandestine nuclear activities in two major sites, Natanz and Arak, in 2000. Due to the NCRI's connections in Iran, its information is said to have a high level of credibility. Frank Pabian, an adviser on nuclear non-proliferation matters at the Los Alamos National Laboratory, previously told the New York Times that the NCRI is "right 90 percent of the time."

The NCRI report states: "Reliable information... shows that the 'nerve center' of the Iranian regime's nuclear weapons project, responsible for designing the bomb, has been continuing its work. Following the... nuclear deal reached in 2015, not only has the unit remained in place and its activities have not subsided, but it is now clear that in some fields its activities have even expanded."

The NCRI says the Research Academy in the highly protected Parchin military base is being secretly used to continue the nuclear weapons project. The location has been hidden from IAEA inspectors. "The unit responsible for conducting research and building a trigger for a nuclear weapon is called the Center for Research and Expansion of Technologies for Explosion and Impact... known by its Farsi acronym as METFAZ."

MEFTAZ and the new location are part of Iran's umbrella engineering unit for the nuclear weapons program, the Organization of Defensive Innovation and Research, known by its Persian acronym SPND. This unit comprises seven subdivisions. The NCRI first revealed the SPND's existence in 2011. It was later designated by the US State Department. The SPND has many secret centers; some may have not been detected yet.

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Iran has not allowed the IAEA to inspect or monitor many of its nuclear-related sites, including the SPND centers. Tehran has disguised their true nature by labeling some of them military sites or conventional research centers. During the nuclear talks, Iran was determined that Parchin be beyond IAEA inspection. Iranian generals frequently boast that the IAEA is not permitted to inspect these locations, including Parchin and its Research Academy.

The IAEA ought to thoroughly inspect all SPND centers. Interviews should be conducted with the nuclear program's lead figures and researchers. Iran should not receive sanctions relief while pursuing its nuclear ambitions. The international community should act now, before Iran becomes a nuclear state, or else it will be too late for anyone to do anything.

A nuclear bomb would ensure the survival of Iran's clerical political establishment, the continuation of its policies and the robust advancement of its hegemonic ambitions without fear of repercussions.

<http://www.arabnews.com/node/1091366#>

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The New Indian Express (Chennai, India)

India Successfully Test Fires Nuclear Capable Agni-III Missile Off Odisha Coast

Author Not Attributed

April 27, 2017

Indian army on Thursday successfully test-fired surface-to-surface intermediate range ballistic missile (IRBM) Agni-III from a defence test facility off Odisha coast.

Defence sources said, the indigenously built highly sophisticated missile blasted off from a mobile launcher at the launching complex-IV of Integrated Test Range (ITR) at Abdul Kalam Island at about 9.15 am.

While the test was carried out by the Strategic Forces Command (SFC) of army, Defence Research and Development Organisation (DRDO) provided logistic support. The trial was conducted as part of its user training exercise.

Scientists and Army personnel who were closely monitoring the trajectory and flight path of the missile at the mission control room went into raptures as the missile rose majestically into the sky, travelling in the pre-coordinated projectile.

Propelled by two-stage solid propellant, the missile took off vertically into space and re-entered the atmosphere after attaining a height of nearly 500 km. Even though it did not carry a live warhead, its nuclear triggering mechanism worked well.

“The trial has met all mission objectives and all the events have occurred as expected. Terminal phase events were recorded by down range ship deployed near the impact point. The test once again proved the reliability of the state-of-the-art technologies and readiness of the user to launch it,” said an official from New Delhi.

The missile used in the test was picked up randomly from the production lot. The missile reached the pre-defined target with an accuracy of less than 100m upon its launch. The missile equipped with state-of-the-art avionics and advanced on board computer, has the latest features to correct and guide in-flight disturbances.

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The missile's trajectory was monitored through various telemetry stations, electro-optic systems and sophisticated radars located along the coast and by two naval ships anchored near the impact point.

Agni-III, capable of carrying both conventional and nuclear warheads weighing up to 1.5 tonnes, is 17 m tall. It has a diameter of two meter it weighs around 50 tonnes with warhead which is protected by carbon composite heat shield.

Prior to the test, a cautionary notice was issued to aviators and mariners to keep away from the area of splashdown in the sea.

<http://www.newindianexpress.com/nation/2017/apr/27/india-successfully-test-fires-nuclear-capable-agni-iii-missile-off-odisha-coast-1598412.html>

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Foreign Policy Journal (Cross Village, Michigan)

South Asia: Nuclear Self-Deterrence as a Virtue

By Ali Ahmed

April 26, 2017

*Self-deterrence would imply taking stock of the consequences and prudently shelving the option of first strike.*

Deterrence strategists value the fear and shock effect a state's nuclear capability to inflict harm induces in the leadership of an adversary. The capability is so envisaged and built as to convey a certainty in case of conflict, with political will demonstrated in peacetime to assure the adversary that the nuclear decision maker would not shy away from genocide and ecocide when the push of conflict comes to nuclear shove.

Nuclear strategists have it only half right. The ability to inflict harm cannot be seen independently of the like ability of the adversary to similarly cause harm right back. This brings in self-deterrence, to—at a minimum—question the nuclear strategists' input to decision making, and—at a maximum—to stay the nuclear hand. Just as avidly nuclear strategists articulate their wares, anti-nuclear practitioners must show-case nuclear dangers to induce self-deterrence in decision makers.

A small storm in South Asia's nuclear teacup last month provides an entry point into using India's case in an imagined nuclear aftermath as example.

Recently, noted nuclear watcher Vipin Narang set the cat among the nuclear pigeons. At a Carnegie international nuclear policy conference in Washington DC, he put together the writings of two former officials who dealt with India's nuclear deterrent, namely the former National Security Adviser Shivshankar Menon and the former head of the Strategic Forces Command Lt Gen Nagal, to posit that India is moving towards a first strike nuclear posture.

He argues that the writings of the two officials after leaving respective jobs suggest that India plans to take out Pakistan's nuclear capability in case of tactical nuclear first use by Pakistan or in case India decides not to wait for Pakistan's nuclear first use prior to its own launch of a disarming, counter force, strike. In the same breath he says that this might as yet be wishful since India does not quite have the capability yet.

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Jawaharlal Nehru University don, Rajesh Rajagopalan, elaborates that such a strike would require 60 warheads for a first strike, with another 30 up India's sleeve for follow-on strikes. Both sensibly argue against going down this route, but base their argument on strategic grounds.

An argument missed in the discussion—which nuclear strategists in general take care to avoid altogether—is the likely effect of Pakistan's strike back, even after suffering a first strike equivalent nuclear attack. that has taken out its ability for a coherent response along with its physical capability to strike back.

Self-deterrence is a taboo word in nuclear theology. Nuclear strategists are in the business of scaring the adversary. Self-deterrence on the other hand implies buying into nuclear scaremongering and staying one's nuclear hand. In the case under discussion of India's contemplation of a nuclear first strike, self-deterrence would imply taking stock of the consequences and prudently shelving the option of first strike.

If, as Rajagopalan argues, it would take 60 warheads to attempt a disarming strike, India needs examining the environmental impact over the long term of not only these 60 impacts—even if all are not ground bursts—but of knock-on detonations and scattering of nuclear debris of Pakistani nuclear warheads so struck. Since Pakistan has some 120 warheads, India might wish to take out perhaps two thirds of them to set back its retaliatory capability. At least half of these need being added to the environmental damage calculus, making for an effects estimate of about 100 warheads.

Also, when confronted with a disarming strike, Pakistan would make its remaining numbers count. Though under broken-backed conditions and even if decapitated, it might still like to get in a blow or two at India's political and economic centers of gravity, Delhi and Mumbai respectively. It would try and get in at least a tenth of India's salvo on these two targets counting on India dissolving into being a 'geographical expression', as India was once envisaged in Winston Churchill's malicious phrase.

Environmental costs are easier to imagine. Seldom discussed are the socio-political consequences in the aftermath of first strike and retaliatory strikes.

In India's case, bordering states would be directly affected including that of India's principal nuclear decision maker, the prime minister, who belongs to Gujarat. Punjab, ruled by an opposition party and abutting Pakistan's heartland, stands to be most affected with the political and economic power of Sikhs, one of India's significant minorities, who live in Punjab, directly impacted.

Pakistan's plight would focus the attention of global jihad, embroiling India in a far worse and by far wider imbroglio. Since there are only desert stretches on the other side, Pakistani refugees would likely stream eastward. Prime time view of the Syrian migration towards Europe indicates India's border fence might wilt.

Having heard Narang, Pakistan would surely redouble its attempts at squirrelling away its nukes. Some would be stashed away unobtrusively in areas of what it considers its strategic depth, ungoverned spaces along the Af-Pak border. It would innovate on how to use its smuggling networks to get across a suitcase bomb or two through the border or the Arabian Sea. Nuclear terrorism could make a spectacular advent.

Further, how this influx of Pakistani refugees into India will impact India's social harmony is easy to guess. The manner India's largest minority—its Muslims—have been put upon by





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the right wing formations after the victory of the party subscribing to cultural nationalism, the Bharatiya Janata Party, suggests a worsening of inter-community relations.

This buffeting of internal security can only heighten centralization. Authoritarian tendencies marked in today's polity in India will get a fillip, prompting a backlash across India's periphery. Externally, India's economic and diplomatic isolation would be near complete, making India ripe for an insular dictatorship at war with itself.

Though India might have 'won' the nuclear war itself, it would have lost the peace—the only sensible way to define victory in war. Self-deterrence might have more sense to it than all deterrence strategists purvey.

<https://www.foreignpolicyjournal.com/2017/04/26/south-asia-nuclear-self-deterrence-as-a-virtue/>

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The Nation (Lahore, Pakistan)

Pakistan's Nuclear Assets Completely Safe: Dar

Author Not Attributed

April 22, 2017

Finance Minister Ishaq Dar on Friday assured that Pakistan's nuclear assets are completely safe.

"Pakistan's command and control system as well as nuclear safety regime remain robust and are at par with international standards," he said in response to a question at an event arranged by the Heritage Foundation in Washington DC. "In fact, Pakistan is providing nuclear security training to regional countries at its Centre for Excellence for nuclear security."

Delivering a keynote address at the event titled 'Pakistan's Economic Reforms: It's Quest for Investment, Prospects for Development & Social Change', Dar stressed that Pakistan and the United States are longstanding friends, partners and strategic allies.

"They have enjoyed a strong long-term and broad bilateral partnership with many shared interests. Both countries have worked closely to counter terrorism and to ensure peace and stability in the region," he said. He emphasised that Pakistan is looking forward to working closely with the new US Administration and has already had some very promising interactions with it.

Dar said his government is vigorously pursuing a 4Es (energy, economy, elimination of extremism and education) strategy. Referring to the markedly improved security in the country, he said economic progress is inextricably linked with peace.

"Given the countless sacrifices our people have made, and continue to make every day in the fight against terrorism and extremism, it would be fair to say that no one understands and appreciates the desperate need for peace more than Pakistan."

The minister said successes against terrorism have been possible after the government launched Operation Zarb-e-Azb in June 2014 against terrorists in North Waziristan. "After

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successfully achieving Zarb-e-Azb objectives, Pakistan has launched Operation Radd-ul-Fasaad which aims at indiscriminately eliminating the residual and latent threat of terrorism,” he added.

He further said that since regional peace is the most important pre-requisite for economic success, Pakistan cannot afford possible fallout from Afghanistan’s political instability. “The only lasting solution for peace in Afghanistan is an Afghan-led and Afghan-owned politically negotiated settlement.”

The minister pointed out that deadlock on Kashmir and continuing tensions along the Line of Control are reflective of yet another external security dilemma Pakistan has been facing since its creation.

Dar said Pakistan’s economy has witnessed tremendous economic turnaround and is currently reckoned as one of the fastest growing economies in the region with countless investment opportunities. He said the China-Pakistan Economic Corridor is a game changer not only for Pakistan but for the entire region. He urged American companies and investors to benefit from attractive business opportunities in Pakistan.

<http://nation.com.pk/national/22-Apr-2017/pakistan-s-nuclear-assets-completely-safe-dar>

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Daily Times (Lahore, Pakistan)

India’s ‘Suicidal’ First-Strike Hype

By Safar Cheema

April 27, 2017

*The survivability of even a few nuclear weapons for retaliatory purposes could wreak havoc if used in a counter-city mode or attack on nuclear installations*

The hype about India’s preemptive first strike, nuclear, conventional or combined, against Pakistan’s nuclear assets, just before it is ‘expected’ to use or threaten to use tactical nuclear weapons (TNWs) is hardly surprising.

It is however really astonishing to see Pakistan’s response, notwithstanding the fact that any discussion on the employment of nuclear weapons by itself is a scary subject. Most Pakistani analysts have rightly pointed out that Pakistan did not trust India’s no-first-use nuclear declaration credibility at the first place. The most recent reiteration came on 6 April 2017, from Pakistan’s Foreign Office spokesperson who said, “Pakistan had long maintained that India’s ambiguous no-first-use nuclear declaration was not verifiable and hence nothing more than an empty political statement”. However, most analysts have remained short of clearly pointing out that a successful disarming, decapitating or preemptive counterforce strike against an adversary possessing ‘credible’ nuclear weapons capability is almost impossible.

The historically established strategic precept about the assured failure of completely taking out all the weapons of a nuclear-armed adversary in a counterforce preemptive strike and the retaliatory ‘unacceptable damage’ from a counter strike is not based upon a postulation only, but a broad consensus of the nuclear strategists and professionals from across the



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world. Why then is the Indian strategic elite so excitingly spreading the very notion of disarming or preemptive strike in such a style?

The postulation of preemptive first strike was kicked off from Vipin Narang's assertion presented in a paper at the Carnegie Endowment for International Peace conference (2017) on nuclear policy and non-proliferation, suggesting that 'There is an increasing evidence India will not allow Pakistan to go first,' in the use of nuclear weapons and could launch a 'comprehensive preemptive first strike to completely disarm Pakistan of its nuclear weapons so that India does not have to engage in iterative tit-for-tit exchanges and expose its own cities to nuclear destruction.' This 'assessment' of India's NFU nuclear policy is neither new nor surprising. It is premised on a number of previous statements and formulations by Indian political leaders and officials, lately from India's former National Security Advisor, Shivshankar Menon's articulation in his 2016 book that 'India might find it useful to strike first against an adversary poised to launch or that declared it would [certainly] use its weapons', which was an unequivocal reference to Pakistan.

India's nuclear history is replete with such contradictory assertions and an affront to basics of deterrence strategy. India's first officially articulated Draft Nuclear Doctrine (DND) in 1999 is a bunch of hyper contradictions. Article 2.3 of the Indian DND stated that "India shall pursue a doctrine of credible minimum nuclear deterrence," but Article 2.6 laid down a list of requirements, which describe that deterrence required India to maintain: "Sufficient, survivable and operationally prepared nuclear forces". It is obviously a self-contradiction that the doctrine of credible minimum deterrence requires maintaining 'sufficient' nuclear forces. Due to this provision, the Indian nuclear doctrine was assessed internationally as an aggressive.

In January 2003, India's cabinet committee on security reviewed the draft doctrine and to make it partly operational; the committee summarised a version, which significantly departed from the August 1999 DND. The "no-first-use" posture has been modified significantly. Article VI of the operationalised nuclear doctrine renders the NFU declaration invalid by stating: "However, in the event of a major attack against India, or Indian forces anywhere, with biological or chemical weapons, India will retain the option of retaliating with nuclear weapons."

The possibility of successful preemptive strikes against nuclear weapons can also be ruled out because the dispersed and well-concealed nuclear warheads and mobile delivery vehicles cannot be attacked and destroyed with assured certainty. The survivability of even a few nuclear weapons for retaliatory purposes could wreak havoc if used in a counter-city mode or attack on nuclear installations.

Large-scale preemptive attacks by inherently dual-use systems in a limited or full-scale conflict to degrade or destroy the adversary's nuclear capability are considered the most dangerous, and therefore, counterproductive. These types of dangerous undertakings would lead to an uncontrolled escalation of limited conventional war to a nuclear exchange, which would be catastrophic for the whole region. The South Asian scenario is especially not conducive for such preemptive military strikes due to border contiguity, geographical proximity and retaliatory war options.

The dangerous strategic miscalculation is being repeated once again by the Indian policy circles projecting an obsolete strategic concept of counterforce preemptive first strike. The projection of preemptive first strike seems to be more politically motivated than a well-

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articulated military strategy, may be to satiate the aggressive intent of India's hawkish ruling elite.

<http://dailytimes.com.pk/opinion/27-Apr-17/indias-suicidal-first-strike-hype>

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National Review (Washington, DC)

Nukes + Nuttiness = Neanderthal Deterrence

By Victor Hanson

April 25, 2017

*Acting crazy has worked for rogue regimes, but Western appeasement is not a long-term solution.*

How can an otherwise failed dictatorship best suppress internal dissent while winning international attention, influence — and money?

Apparently, it must openly seek nuclear weapons.

Second, the nut state should sound so crazy and unpredictable that it might just use them, regardless of civilization's deterrent forces arrayed against it.

Third, it must welcome being "reluctantly" pulled into nonproliferation talks to prolong the farce and allow its deep-pocket enemies to brag of their diplomatic "strategic patience" and sophistication.

The accepted logic of the rogue state is that the Westernized world is so affluent and leisured, and life is so good, that it will understandably grant almost any immediate geostrategic or monetary concession to avoid serious disruptions of the international order. The logic of appeasement is always more appeasement — especially in the one-bomb nuclear age.

North Korea sounds as if Pyongyang is an expendable hellhole, but not so Seoul, one of the world's great commercial and industrial powerhouses that exports Hyundais, Kias, Samsung, and LG appliances.

The logic is that of the proverbial crazy country neighbor, whose house and yard are a junkyard mess, whose kids are criminals, and who periodically threatens to "mess you up" unless you put up with his antics, give him attention, and overlook his serial criminality.

The renegade neighbor's logic is that you have lots to lose by descending into his world of violence and insanity, while he has nothing to forfeit by basking in it, and that such asymmetry allows him to have something on you. And it makes him something other than just the ex-con, creep, and failure that he otherwise is.

Short-term appeasement of unhinged monsters is always felt to be a safer and less dangerous choice than solving the problem once and for all, which one might do by calling the bluff of a rabid entity believed capable of inflicting grave damage on the civilized order.

And so for nearly the last half century we have found new and creative ways of feeding our pre-civilized dragons in fear that otherwise they will immediately scorch civilization. The logic, in other words, has been "let the next administration handle this temporarily placated monster when he gets hungry again." For nearly the last half century, the logic has been 'let

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the next administration handle this temporarily placated monster when he gets hungry again.'

For much of the 1980s and 1990s, Saddam Hussein sounded and acted murderously unhinged: He preemptively attacked Iran, issued threats against most of his neighbors, gassed thousands of Kurds at Halabja, bragged about his human flesh-chipper, ran a gestapo police state that murdered hundreds of thousands of its own, invaded Kuwait, sent missiles into Israel, violated U.N. resolutions, and all the while slyly suggesting that Iraq had a huge arsenal of WMD.

A crazy, dangerous Iraq was all over the front pages — in a way that Saudi Arabia, Kuwait, Bahrain, and other oil-exporting Arab countries were not.

But eventually Saddam's various enemies concluded that in fact he did not have nuclear capability, and then they moved to ensure that he never acquired it. After Israel's preemptive strike in 1981 at the Iraq nuclear facility at Osirak, outside of Baghdad, and the crushing defeat in the First Gulf War, Saddam's enemies guessed that he had no nuclear deterrent — yet. And so the Americans took him out in 2003, on the hunch that his much-bragged-about WMD arsenal did not mean he had a bomb.

Moammar Qaddafi adopted the same blueprint of acting crazy — subsidizing global terrorists, taking down airplanes, terrorizing his own people — while using his petrodollars to build centrifuges to acquire nuclear capability.

For a time, Qaddafi was on the world stage in a way that nondescript Morocco or Tunisia was not. But after the 2003 removal of Saddam, Qaddafi panicked, feared his own removal, and so gave up his nuclear program. Without nukes and a future deterrent, his craziness eventually sounded shrill and he was bombed out of power less than a decade later.

Iran follows the same tired and predictable script. It has talked grandly of Israel as a "one-bomb state." It threatens to unleash a firestorm in the Persian Gulf. It sends out global terrorists and fights proxy wars in Syria, Yemen, and Iraq. It hijacks boats and gloats about launching missiles toward American carriers.

Iran's revolutionary theocracy has executed thousands of dissidents; it takes Western hostages and bargains for ransom. And all the while it has continued to build centrifuges — now bragging that it will soon become nuclear, now backing off under criticism and smirking that its enriched uranium is "for peaceful purposes" only.

In other words, a passive-aggressive Iran learned long ago that an otherwise nondescript rogue nation without an effective military and economy, or cultural influence of the caliber of the United States', Europe's, Russia's, or China's, usually does not warrant world attention. It does not win \$400 million in bribe money in the dead of night along with fawning, serial concessions — unless it credibly acts as if it is both nuts and on the cusp of being nuclear. So Iran, in seemingly suicidal fashion, poses as if it is existentially dangerous, neither subject to natural laws of deterrence nor to international norms and laws. (Few worry about democratic and nuclear France, India, and Israel or even much about Russia and China, both of which are autocratic and nuclear but otherwise globalized, commercially engaged, and usually predictable.)

In contrast, consider Pakistan. Periodically it has talked of nuclear exchanges with India, winked and nodded at terrorist operations against Mumbai, harbored bin Laden, promoted

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the Taliban, and profited from terrorism and drugs — on the loud assurance that it has a sizable nuclear arsenal, is unpredictable, and at times is prone to suicidal Islamist fantasies. Without such a strategy, Pakistan would earn little fear, no world attention, and not much international aid, given that it has never developed a sophisticated globalized economy like neighboring democratic India. Pyongyang has gained billions in bribe money, international attention and concern, and free publicity, despite starving its own people and becoming the hated pariah of Asia.

But no one has played the game better than the two Kim Jongs of North Korea. The result is that Pyongyang has gained billions in bribe money, international attention and concern, and free publicity, despite starving its own people and becoming the hated pariah of Asia.

Certainly, comparably sized Asian countries such as Sri Lanka or Malaysia do not warrant the world's focus or largesse by quietly tending to their own business. Under the rules of nuttiness and nuclearized blackmail, quiet non-nuclear states who play by the rules are ignored, and rogues who don't are courted and bribed. Outlaw leaders see such brinkmanship as the pathway to family enrichment and prolonged tenure.

There are still a few ways to break this dangerous cycle, but they all are predicated on two assumptions: the immediate remedies are quite dangerous, and yet the status quo is not sustainable and even more existentially dangerous in the long term.

Here are some options; they are not mutually exclusive and universally applicable to rogue nuclear states besides North Korea.

#### Third Parties

Rogue nations exist because superpower patrons find them useful pawns.

Trump apparently is redefining Obama-era “normal” commercial relations with China as suddenly asymmetrical and detrimental to the U.S. — as a bargaining chip to negotiate downward so that the Chinese will help with North Korea. If in exchange he gets Chinese pressure on Pyongyang, then the upside of the deal is that we are no worse off trade-wise with China than we were in 2009, but much better off without a North Korea threat.

It's usually delusional to appeal to the self-interest of a big power that is sponsoring a rogue state (a Russia or a China knows better than we do why their clients do things that bother us). Yet Trump apparently will try to convince China (no longer itself posing as a Maoist-crazy, impoverished nuclear state) that a rich South Korea that forgoes nuclear weapons, with traditional rivalries with Japan, is still a better deal than a serially unpredictable and treacherous nuclear Pyongyang, whose wayward nuclear explosions could radiate almost anywhere.

#### Sanctions

We laugh at soft-power sanctions. But in the case of North Korea and Iran, it was they, not us, who lobbied, threatened, and begged for them to end. The problem with sanctions is not that they do not eventually work but that that they take a long time to work well — and in the interim the sanctioneers lose their nerve and their solidarity and then capitulate, either to win accolades for a “legacy” deal or in guilt that they have reduced North Koreans to eating grass or Iranians to being without Advil. Once sanctions are leveled, they should never be lifted until the rogue state is certifiably incapable of deploying nuclear weapons.





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### Deterrence

Rogue nations do not care about offensive asymmetry, given their vows that they welcome Armageddon if it means the end of an American city or chaos in the supposedly hated West.

In such an unlikely but nevertheless dangerous calculus, ten nukes in the hand of Iran or North Korea are felt to be worth 1,000 in the possession of the U.S.

So the key is more defensive deterrence, or the overwhelming assurance that missile defense, cyberwarfare, etc. can nearly guarantee that North Korea's weapons will have zero effect on its enemies. The script about desiring suicide is empty if a rogue state knows it cannot take anyone down with it (like a suicide bomber who beforehand knows that his bomb is a dud).

Clearly, the U.S. and its Asian allies must expand — and demonstrate — their anti-missile capability as fast as possible.

### Degrees of Madness

Rogue madness can become banal quickly. ("My, my — North Korea threatened to blow us up again yesterday.") North Korea can only threaten to incinerate the U.S. so many times; Iran can put out only so many videos showing America in flames.

Western madness is a different story, given its rarity and far more likely severity. It is a false reading of history to think that the U.S. has always responded predictably and proportionally. Its record in the World Wars and Korea and Vietnam is on occasion devastating and disproportionate.

We ridicule the good cop–bad cop, Nixonian-Kissingerian role-playing, but it achieved results precisely because there were unquestionably credible hawks in government who were always on the verge of breaking out of their cages. The loud presence of a supposedly Strangelovian Curtis LeMay was of value to U.S. presidents. The occasional narrative, true or fabricated, that a sober McMaster or Mattis must calm down an impulsive Trump may have some value.

### Allied Cohesion

In a showdown, there can be no triangulating allies who publicly fret about America's "show of force" but privately beg that it continues. The key is to separate rogue states from their patrons, not our clients from ourselves. Any policy must first be ironclad in its assurances that all frontline threatened states are on board with a new deterrent stature and not sending mixing signals to enemies.

The alignment of Japan, South Korea, Taiwan, and Australia with the U.S. is a potent force that can help sway China and reassure such non-nuclear states that they are under the American defensive umbrella.

### Brinkmanship

As a last resort, of course, the U.S. can always tell China that it broke the unspoken rule of not letting a client go nuclear. It will remind Beijing that if Taiwan, Japan, or South Korea chooses to go nuclear as did North Korea, its nukes would work like Hondas and Kias and not implode on the launching pad.



Public opinion in all these countries, of course, understandably opposes nuclearization, but public opinion is fickle when North Korea sends missiles into one's air space. Nuclearized India, Pakistan, Iran, and North Korea on the borders of Russia and China are unstable enough for these patrons — without adding a nearby nuclear Taiwan, Japan, and South Korea as well.

In sum, when a nutty nuclear or would-be nuclear state goes too far in its various extortions and is seen as an immediate existential threat, then long-term dangers become short-term crises and override short-term appeasement. And that's where we seem to be going with North Korea.

<http://www.nationalreview.com/article/447013/madmen-nukes-deter-western-actions-north-korea>

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Bulletin of the Atomic Scientists (Chicago, IL)

The Next Nuclear Posture Review: Bring in State, Energy and Allies

By Anna Peczeli

April 25, 2017

What does the future hold for the US nuclear posture under President Trump? The last Nuclear Posture Review occurred in April 2009, when a 12-month review process was conducted to translate President Obama's vision into a comprehensive nuclear strategy for the next five to 10 years. The review addressed several major areas: the role of nuclear forces, policy requirements, and objectives to maintain a safe, reliable, and credible deterrence posture; the relationship between deterrence policy, targeting strategy, and arms control objectives; the role of missile defense and conventional forces in determining the role and size of the nuclear arsenal; the size and composition of delivery capabilities; the nuclear weapons complex; and finally the necessary number of active and inactive nuclear weapons stockpiles to meet the requirements of national and military strategies.

Clearly, changes are afoot. On January 27, 2017, President Trump issued a presidential memorandum that mandated "a new Nuclear Posture Review to ensure that the United States nuclear deterrent is modern, robust, flexible, resilient, ready, and appropriately tailored to deter 21st-century threats and reassure our allies."

Looking ahead, the new administration should conduct this review through a broad, inter-agency process, involving the State and Energy departments, and allies as well. This approach offers several valuable benefits by broadening the focus from deterrence to non-proliferation, reassurance, and nuclear security.

The main role of the Nuclear Posture Review, or NPR, is to assess the threat environment, outline nuclear deterrence policy and strategy for the next 5 to 10 years, and align the country's nuclear forces accordingly. Since the end of the Cold War, each administration has conducted its own NPR, but the process and the scope of the reviews were different in all three cases.

The first NPR was conducted by the Clinton administration in 1994, and even though important senior positions have still not been appointed by the Trump White House, Trump's mandate suggests that their review might use it as a template for 2017. It was a bottom-up review, initiated by the Department of Defense, mostly focusing on a set of force



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structure decisions—such as the right size and composition of US nuclear forces, including the size of the reserve or so-called “hedge” force. That review lasted for 10 months, and the Pentagon was in charge of the entire process, mainly focusing on deterrence requirements.

In contrast, the 2001 NPR of the Bush administration was mandated by Congress, and it addressed a broader set of issues, including all components of the deterrence mix—nuclear and non-nuclear offensive strike systems, active and passive defenses, and the defense infrastructure. The Defense Department took the lead in this case just as before, but this time the Energy Department and the White House were also engaged in the process. As a result, the Bush NPR’s force structure requirements—how to size and sustain the country’s forces—were driven by four factors: assuring allies, deterring aggressors, dissuading competitors, and defeating enemies.

The Obama administration’s 2010 NPR was also mandated by Congress, but the Defense Department was specifically tasked to conduct an inter-agency review. Besides the unprecedented level of such cooperation, a bipartisan Congressional commission also laid out a number of recommendations for the review process, many of which became part of the final text of the Obama review. Officials from State, Energy, and the Joint Chiefs of Staff were involved, as well as US allies who were regularly briefed during the different stages of the review.

In the final phase of the 2010 NPR, the White House leadership made the decisions on the actual content of the nuclear posture. While the Clinton and the Bush reviews were largely conducted behind the scenes and only short briefing materials were published on the outcome, the Obama administration released an unprecedentedly long report on its nuclear posture review.

These cases offer two models for a review process: It can be conducted by a small group of people in the most highly classified manner, or it can be a larger, relatively transparent inter-agency process. In the former approach, the final decisions are typically presented to the secretary of defense, the president, Congress, and allies. The problem is that this tends to be a one-sided approach, putting the main focus on deterrence and modernizations.

Though it is effective and fast, the implementation of a Nuclear Posture Review requires all stakeholders to be on board with the new strategy. One of the most painful lessons of the Bush review was that because the White House and Defense failed to explain their new approach to the public, the military, and Congress, there was effectively a loss of leadership—which made procurement extremely difficult and caused major problems in the implementation of their strategy.

On the other hand, involving all stakeholders and providing a balanced approach to nuclear strategy would support the goals of not just deterrence, but those of reassurance, non-proliferation, and nuclear security as well. Due to the involvement of the State Department, the 2010 NPR, for example, emphasized a number of policies which supported non-proliferation objectives and strengthened US negotiating positions at global arms control forums. One of these policies was the “negative security assurance” which stated that the United States would not use or threaten to use nuclear weapons against non-nuclear weapon states that are party to the NPT and in compliance with their nuclear nonproliferation obligations.

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The other policy that was advocated by senior State Department officials was the so called sole-purpose posture—which means that nuclear weapons only serve to deter or respond to a nuclear attack, and they no longer play a role in non-nuclear scenarios. Although the sole purpose posture was eventually dropped and it was set only as a long-term objective, the Obama administration still reduced the role of nuclear weapons with the new negative security assurance, and it signaled its intent to continue this process with the promise of sole purpose. These steps supported US leadership at the 2010 Nuclear Non-Proliferation Treaty Review Conference and they contributed to the adoption of a consensual final document at the conference.

This broader scope strengthens inter-agency cooperation, and ensures that all the departments that are affected by the NPR are on board with the strategy, which eases the implementation of the decisions. Besides, it also strengthens alliance relations by regular consultations. The Trump administration’s mandate did not include a specific timeline or format; consequently it will be mainly the responsibility of Defense Secretary James Mattis to decide on the framework. Though the presidential memorandum did not require an inter-agency process, it would be wise to conduct one.

Compared to 2010, the security environment has dramatically deteriorated: renewed tensions between NATO and Russia since the annexation of Crimea, China’s building of military bases in what had previously been international waters, significant military modernization efforts by both these states, and North Korea’s increasingly bellicose nuclear threats. All of these developments have created a serious deterrence and security challenge for the United States and its allies. Only a broader approach can address all relevant threats and create the necessary internal consensus for the funding and creation of a modern, robust, flexible, resilient, ready, and appropriately tailored nuclear arsenal.

<http://thebulletin.org/next-nuclear-posture-review-bring-state-energy-and-allies10715>

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Forward (New York, NY)

Heed Joe Lieberman’s Warning on Biological Weapons

By Peter Apps

April 26, 2017

With the threat of chemical weapons in Syria and nuclear arms in North Korea, the risk of biological weapons has largely dropped off the international agenda. But evolving technologies and genetic engineering may open the door to new dangers.

Other than the “anthrax in the mail” attacks that followed 9/11, killing five people, there have been few serious attempts at biological attacks in recent years. Most global powers scaled back their biological weapons research in the 1970s, partly because of the difficulties of getting fragile bacteria and viruses to survive being dropped in bombs or missiles, or even sprayed.

Militant groups like al Qaeda and Islamic State have largely embraced the other end of the technological spectrum, turning to basic but brutal tactics such as using a car or truck to attack pedestrians in Nice, Berlin and elsewhere.

Most scientific and security experts agree the risk remains relatively low. That may change with the proliferation of basic genetic engineering technologies, some small and cheap



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enough to be used at home. (This gene-editing kit, built by a former NASA bioengineer, was marketed last year.) The unscrupulous can now tamper with the DNA of bacteria or viruses to make them that much more lethal and potentially hard to treat.

Regulations on biological and genetic research vary widely between countries – but making weapons with such techniques is largely illegal under the 1975 Biological Weapons Convention. Some experts worry, however, that recent advances may make it easier to design more effective and lethal new pathogens. In February, Microsoft founder Bill Gates warned that a conflict involving such weapons could kill more people than nuclear war.

When scientists first sequenced a single human genome in 2003 – allowing them to understand what each small piece of biological coding meant – it was a vast and expensive undertaking. Now, computing power means the cost of that kind of technology – analyzing the difference between the DNA of individual humans, animals, plants and pathogens– is nose-diving by the year. Some scientists have raised the still-controversial idea that as the availability of basic genetic engineering techniques also rises, it could become easier to create new, more sophisticated weapons, perhaps targeted to the DNA of an individual or even an entire ethnic group.

Last month former Senator Joseph Lieberman – who has been warning of biological attack since before 9/11 and has said the United States has been “damn lucky” to avoid it – called on President Donald Trump and Congress to make biodefense a national priority.

In a 2010 paper, former CIA officer Rolf Mowatt-Larsen described how al Qaeda wanted to acquire biological weapons with roughly the same level of priority that it sought a stolen nuclear weapon. It never came close to getting either, focusing instead on more conventional attacks.

From the Combating Terrorism Center at the U.S. Military Academy at West Point concluded Islamic State, too, was keen to acquire biological weapons. That group has already used basic chemical weapons, including in the battle for Mosul, although it has been unable to inflict significant casualties with them.

Even without a deliberate attack, the threat of a mass pandemic is real, and organizations such as the U.S. Centers for Disease Control and Prevention and the World Health Organization are always on the lookout for signs of outbreak. Scientists have been warning for decades that mankind is at risk for a serious pandemic on the scale of Spanish influenza, which killed an estimated 50 million to 100 million people a century ago.

The modern world has a host of techniques to fight such infections. But it also has vulnerabilities. Air travel – and some argue, mass migration – make it easier for infections to spread faster.

An Islamic State laptop obtained in 2014 contained documents that examined ways of harvesting and using bubonic plague from animals, the West Point report said. But it concluded that, like other groups, IS remained “extremely unlikely” to acquire the capability to mount a mass casualty attack using biological weapons.

During the 2014 Ebola outbreak in West Africa, Western officials worried Islamic State or another group might try to take advantage. In particular, according to the West Point report, there were worries that it might attempt to get individuals infected and then use them to spread the disease elsewhere.

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The reality is that such a technique would have had a limited effect. Any infected individual would have become sick and been identified relatively quickly. And, as with the rest of the outbreak, infection control measures would have brought it under control.

Still, simple attacks can work. In 1984, [751 people fell ill and 45 were hospitalized, mainly in Oregon, after a religious group run by Indian mystic Bhagwan Shree Rajneesh sprayed salmonella into food distribution areas in 10 salad bars. No one died, but it remains the largest biological attack in recent U.S. history – and could well have been fatal if those behind it had used typhoid, as they had at one point considered.

Japan's Aum Shinrikyo cult – responsible for the 1995 Tokyo subway sarin nerve gas attack that killed 12 and hospitalized many more – is generally believed to have had the most sophisticated biological weapons program of any non-state group. It could not successfully execute an attack with anthrax or other pathogens, however – one of the main reasons it switched its focus to chemicals.

The greatest danger may come if any of the handful of people who have relevant expertise decide to mount solo attacks. After anthrax-filled envelopes began to appear in government and other offices in late 2001, Federal Bureau of Investigation agents concluded that a microbiologist and U.S. Army researcher, Bruce Ivins, was likely responsible and was believed to have acted alone. Ivins committed suicide in 2008, shortly before his planned arrest; a panel of scientists later cast doubt on the FBI's evidence against him.

There are other dangers. If the regime in North Korea were to collapse, some worry Pyongyang could unleash its biological arsenal, which may include smallpox.

World War One saw the emergence of chemical warfare, World War Two the atomic bomb. The next era-defining super weapon, some experts have long warned us, could be biological.

<http://forward.com/opinion/world/370185/heed-joe-liebermans-warning-on-biological-weapons/>

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Pakistan Kakhuda Hafiz (Lahore, Pakistan)

Nuclear Command and Control in South Asia

By Mohammad Umar

April 24, 2017

A bulletin author named Mustafa Kibaroglu in his essay Humanity can't indefinitely avoid the use of nuclear weapons, writes that, "What is overly idealistic is to believe that humanity, if it possesses nuclear weapons indefinitely, will indefinitely manage to avoid nuclear war". He then argues, "So is it realistic to wait passively for disarmament while the power to launch nuclear-tipped missiles rests with leaders whose rationality is in question?"

I'll argue the opposite – the claim is puzzling and over mystifying the real dangers allied with the nuclear weapon, which incorporates: the threats of nuclear terrorism and nuclear thefts.

Nuclear decision making engrosses a long list of: strategic decision makers, government officials, military officials, scientific community and political authorities – thereafter at last negative security measures such as the two men, three men rule, environment sensing





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devices and coded locked devices ensures that the weapons may not be used in an unauthorized fashion or accidentally. Therefore, a leader single-handedly cannot order the launch of nuclear tipped missiles.

In the case of Pakistan; the lucid, comprehensive, hierarchical and legal structure of actors involved in nuclear decision making is available in open source information. 'National Command Authority' is chaired by Prime Minister of Pakistan – other members are Minister for Foreign Affairs, Minister for Defence, Minister for Finance, Minister for Interior, Joint Chief of Staff Committee, Chief of Army Staff, Chief of Naval Staff, Chief of Air Staff – Director General Strategic Plans Division plays the role of secretary and Strategic Plans Division is the secretariat of National Command Authority.

Likewise in India; the nuclear decision making brings me around to apprise the 'Nuclear Command Authority' which is counselled by its political and executive council. Thereafter, it includes the role of Cabinet Committee on Security (CCS) and National Security Council (NSC) respectively – the supreme authority rests with the Prime Minister, who heads the 'Nuclear Command Authority'. Therefore, In South Asia nuclear decision making authority rests with multiple actors rather than any single individual.

The Cold war was organized under costly arms race and strategic competitions between super powers – At present; South Asia undergoes the Cold war fashioned arms race and strategic competition between India and Pakistan. India enjoys the lures of proliferation by the virtue of its powerful allies: the United States and U.S based Indian Diaspora – this intimidates the regional security and balance of power. This is being said for number of reasons: India has a bad record of proliferation and U.S support to India is provoking nuclear arms race in South Asia.

Last year, NTI published a risk assessment report which stipulates that in theft ranking, India has improved and ranks 21. Similarly, according to International Atomic Energy Commission report 1996, India has 130 occasions of safety related concerns – this is in fact alarming.

My own view is that the US support to India may have resulted in strengthening Indo-US relations, but at the same time it has given birth to the costly arms race in South Asia – intimidating the International Security Environment.

The newly elected republican government should immediately cut the defence and nuclear agreements with India – which otherwise is idealistic and anything more than a wishful thinking to stop the nuclear arms race in South Asia. The United States should force India to stop the activities such as illegal procurements and nuclear thefts which are the gravest threats to humanity.

On the other hand; In Pakistan's case, it is generally believed that to realistically appraise its nuclear program, requires the coloured lens – that oversimplifies and supports the notion of world's fastest growing nuclear arsenal. However, I'll argue opposite – that in nuclear arms stockpiling, the United States and Russia are keeping up marginally less than 1,600 operational, 3720 deployed and 8990 stockpiled warheads each. The United Kingdom stands around 225 warheads, Chinese and French stands steady at 250 and 300 weapons each.

This means, Pakistan is far behind those of its nuclear counter parts in stockpiling and vertical proliferation – keeping up marginally 100 to 110 nuclear weapons. Therefore, the

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notion of fastest growing nuclear arsenal is an academic myth rather than operational reality.

In case of India and Pakistan as argued above – leader single-handedly cannot order the launch of nuclear weapons. Perhaps, it may not be the case with the United States of America – the President carries nuclear football and codes to launch the order of nuclear weapons. President Trump’s control of nuclear weapons may be flustering for policy experts in US, and can be a threat to International Security.

I’ll argue – this time opposite of Mustafa Kibaroglu – once your leader presses the button, was true once upon a time.

<http://www.pakistankakhudahafiz.com/articles/exclusive/nuclear-command-control-south-asia/>

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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.

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