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Featured Item

Featured Item: “*The Intelligent and Connected Bio-Labs of the Future: Promise and Peril in the Fourth Industrial Revolution*”. Written by Garrett Dunlap and Eleonore Pauwels, published by the Wilson Center; August 10, 2017

https://www.wilsoncenter.org/sites/default/files/the_intelligent_connected_biolabs_of_the_future.pdf

A vast array of technologies are rapidly developing and converging to fundamentally change how research is performed, and who is able to perform it. Gene editing, DNA synthesis, artificial intelligence, automation, cloud-computing, and others are all contributing to the growing intelligence and connectivity of laboratories. It is currently possible to perform a growing number of research tasks automatically and remotely with a few clicks of the mouse. And with the barriers of entry to synthetic biology tools like CRISPR decreasing, they will no doubt be subject to automation as well, and may even be coupled with artificial intelligence to optimize the power of genetic engineering. While this may be a boon for the development of novel vaccines and therapeutics by parties that have traditionally not had access to the necessary tools, it also opens the risk of nefarious use to engineer or edit biological agents or toxins. While there have been attempts at governance to limit the avenues by which a bad actor may gain access to the pathogens or tools to create biological weapons, the ever-increasing pace of innovation has left gaps that may be exploited. Fortunately, investment in technologies such as artificial intelligence and sequencing may also function as the best defense against the growing threat of misuse of biological agents.

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US NUCLEAR WEAPONS

The Washington Post (Washington, DC)

Merkel Challenger Advocates Removal of US Nuclear Weapons

Author Not Attributed

August 22, 2017

Chancellor Angela Merkel's main challenger in next month's election says he would push for the removal of U.S. nuclear weapons from German soil.

The dpa news agency reported Tuesday that Social Democrat Martin Schulz also told supporters in the city of Trier on Tuesday that a government led by him would seek to limit Germany's own military expenditures.

The news agency quoted Schulz saying: "As chancellor, I will work to ensure that the nuclear weapons stationed in Germany ... are removed."

U.S. President Donald Trump has pressured Germany and other NATO partners to spend more on defense.

But Schulz said: "It can't be that Germany, without comment and without action, continues to take part in an armament spiral as wanted by Trump."

Merkel's bloc currently enjoys a 15 percent lead over Schulz's party.

https://www.washingtonpost.com/world/europe/merkel-challenger-advocates-removal-of-us-nuclear-weapons/2017/08/22/3c2f56ec-8768-11e7-96a7-d178cf3524eb_story.html?utm_term=.25323c756265

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Scout Warrior (Minnetonka, MN)

Navy Extends, Upgrades Sub-Launched Nuclear Weapons to 2080

By Kris Osborn

August 22, 2017

The Navy has already been working on technical upgrades to the existing submarine-launched Trident II D5 nuclear missiles in order to prevent obsolescence.

The Navy has already been working on technical upgrades to the existing submarine-launched Trident II D5 nuclear missiles in order to prevent obsolescence and ensure the missile system remains viable for decades to come.

Lockheed Martin Space Systems has received a \$22.2 million contract for material, labor and support services for the U.S. Navy's Trident II D5 submarine-launched ballistic missile production.

The US Navy is accelerating upgrades to the nuclear warhead for its arsenal of Trident II D5 nuclear-armed submarine launched missiles -- massively destructive weapons designed to keep international peace by ensuring and undersea-fired second-strike ability in the event of a catastrophic nuclear first strike on the US.

Navy Strategic Systems leaders have emphasized the need for long-term sustainment of the triad's sea-based leg, creating a need to maintain submarine-launched nuclear weapons to 2080.

The Navy has also been working on the missile's MK 6 guidance system to continue specific work on the weapon's electronic modules.

As part of the technical improvements to the missile, the Navy is upgrading what's called the Mk-4 re-entry body, the part of the missile that houses a thermonuclear warhead. The life extension for the Mk-4 re-entry body includes efforts to replace components including the firing circuit, Navy officials explained.

Navy and industry engineers have been modernizing the guidance system by replacing two key components due to obsolescence – the inertial measurement unit and the electronics assembly, developers said.

The Navy is also working with the Air Force on refurbishing the Mk-5 re-entry body which will be ready by 2019, senior Navy officials said.

Navy officials said the Mk-5 re-entry body has more yield than a Mk-4 re-entry body, adding that more detail on the differences was not publically available.

The missile also has a larger structure called a release assembly which houses and releases the re-entry bodies, Navy officials said. There is an ongoing effort to engineer a new release assembly that will work with either the Mk-4 or Mk-5 re-entry body.

The Trident II D5, first fired in the 1990s, is an upgraded version of the 1970s-era Trident I nuclear weapon; the Trident II D5s were initially engineered to serve until 2027, however an ongoing series of upgrades are now working to extend its service life.

The 44-foot long submarine-launched missiles have been serving on Ohio-class submarines for 25 years, service leaders explained.

The missiles are also being planned as the baseline weapon for the Columbia-class ballistic missile submarines.

Under the U.S.-Russia New START treaty signed in 2010, roughly 70-percent of the U.S.' nuclear warheads will be deployed on submarines.

Within the last several years, the Navy has acquired an additional 108 Trident II D 5 missiles in order to strengthen the inventory for testing and further technological development.

Trident II D5 Test

Firing from the Atlantic Ocean off the coast of Florida in recent years, a specially configured non-armed "test" version of the missile was fired from the Navy's USS Maryland. This was the 161st successful Trident II launch since design completion in 1989, industry officials said.

The missile was converted into a test configuration using a test missile kit produced by Lockheed Martin that contains range safety devices, tracking systems and flight telemetry instrumentation, a Lockheed statement said.

The Trident II D5 missile is deployed aboard U.S. Navy Ohio-class submarines and Royal Navy Vanguard-class to deter nuclear aggression. The three-stage ballistic missile can travel a nominal range of 4,000 nautical miles and carry multiple independently targeted reentry bodies.

The U.S. and UK are collaboratively working on a common missile compartment for their next generation SSBNs or Columbia-Class ballistic missile submarines.

The 130,000-pound Trident II D5 missile can travel 20,000-feet per second, according to Navy figures. The missiles cost \$30 million each.

The "Bulletin of the Atomic Scientists" further describes the weapon -- "The Trident D5s carry three types of warheads: the 100-kiloton W76/Mk-4, the 100-kiloton W76-1/Mk-4A, and the 455-kiloton W88/Mk-5 warhead, the highest-yield ballistic missile warhead in the U.S. arsenal."

<http://scout.com/military/warrior/Article/Navy-Extends-Upgrades-Sub-Launched-Nuclear-Weapons-to-2080-106346972>

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Forbes (New York, NY)

Air Force ICBM Awards to Boeing, Northrop Grumman Keep Trump Strategic Plan on Track

By Loren Thompson

August 22, 2017

The Trump Administration disclosed two major military decisions on Monday. The decision you probably didn't hear about matters a whole lot more to our nation's survival than the one you did. The decision everybody in the nation's capital is talking about is President Trump's adjustment in U.S. strategy for fighting the counter-insurgency campaign in Afghanistan. That move probably won't change much about how America prosecutes its longest-running war.

But a separate decision announced Monday by the Air Force, which got relatively little attention in national media, may one day make the difference between life and death for American civilization. That was the award of risk-reduction contracts to Boeing and Northrop Grumman to develop a replacement for the Minuteman III intercontinental ballistic missile. It signals that the Trump Administration is sticking with plans to modernize all three "legs" of the U.S. nuclear deterrent, our most important protection against nuclear war.

Obviously, the threat of nuclear war is a much greater danger to the survival of our democracy than anything that is likely to happen in Afghanistan. If even a small fraction of the 1000+ nuclear warheads that Moscow currently has aimed at the U.S. were actually launched, it would probably spell the end of the Republic. Tens of millions would die, every facet of domestic infrastructure would likely collapse, and what remained a few days after the war commenced would bear little resemblance to the civilization we so often take for granted.

We live with this danger because, to date, nobody has devised a workable method of intercepting large-scale nuclear attacks. The U.S. has a modest missile-defense system for intercepting small-scale attacks (Boeing is the prime contractor) that probably should be scaled up, but it isn't designed to cope with hundreds of incoming warheads. Our main "defense" against that danger lies in our offensive nuclear forces, and the threat of retaliation they pose to any aggressor.

Nuclear deterrence isn't hard to understand. The goal is to discourage an attack by building an assured capacity to respond in a fashion that enemies will find unacceptable. In other words, you have to convince any potential aggressor that attacking would be suicidal. The challenge is to construct a retaliatory force that doesn't incentivize enemies to try launching a disarming surprise attack, even though your nuclear arsenal is the greatest threat they face.

Strategists call it a "mutual hostage relationship." It may not be reassuring to know that a handful of Russian or Chinese leaders can set in motion attacks that will kill everybody you know before sundown, but that's the best solution we have managed to devise for survival in the nuclear age. So the goal of every presidential administration in modern times has been to make the mutual hostage relationship as stable as possible through a combination of force investments and arms limitations.

The missile awards announced by the Air Force on Monday are part of that process. After 50 years of operation, the land-based portion of the strategic missile force is becoming obsolete and will need to be replaced. The plan is to continue operating 400 single-warhead intercontinental ballistic missiles in hardened silos at several bases in the nation's interior. In combination with submarine-launched ballistic missiles and strategic bombers, these missiles assure the U.S. can retaliate against aggression in every conceivable scenario.

The program for developing a next-gen ICBM plus the vital command links that will control them in wartime is called the Ground Based Strategic Deterrent. The winning companies have both been involved in building and operating silo-based ballistic missiles since the late 1950s, and probably have more institutional knowledge on the subject than any other company in the world. Boeing, for instance, was the prime contractor on all three versions of Minuteman, including today's Minuteman III.

ICBMs in fixed silos are cheaper to operate than the submarines and bombers that comprise the other two legs of the nuclear triad. But cost isn't the main reason we rely on them. If future adversaries figured out how to target our strategic submarines and bombers and there were no land-based missiles, they could disarm America in a surprise attack with only a few dozen warheads. They then would be free to use their remaining weapons against whatever targets they chose.

But as long as there are limits on the size of each side's arsenal, it becomes nearly impossible to take out the U.S. deterrent in a surprise attack, because you need two warheads to destroy each single-warhead U.S. missile in its hardened silo. The attack thus becomes a losing proposition for any aggressor. What the Air Force signaled in its announcement on Monday is that the Trump administration will stick with its pledge to modernize the deterrent so that no enemy ever has a plausible rationale for launching a first strike.

Sometime this fall, the White House will announce plans to expand missile defenses of the U.S. homeland, meaning systems that can actually intercept incoming warheads. That is a vital step in dealing with nuclear adversaries who might be irrational, or accident-prone, or not able to maintain control over their arsenals in a crisis. The Ground-based Midcourse Defense that Boeing manages for the Pentagon's Missile Defense Agency is at present the only system the Pentagon has for intercepting long-range missile warheads.

What the U.S. needs is a layered defense in which an expanded version of the current system is just one tier. Having such a system to complicate enemy targeting plans would probably bolster deterrence. But the most potent deterrent of all is an adversary's certain knowledge that it cannot escape devastating retribution if it commits nuclear aggression. That's what the Air Force's Monday announcement was really about, and it will still be vitally important to our nation's survival when the war in Afghanistan is a fading memory.

<https://www.forbes.com/sites/lorenthompson/2017/08/22/air-force-icbm-awards-to-boeing-northrop-grumman-keep-trump-strategic-plan-on-track/#6ce662536d74>

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RealClear Defense (Chicago, IL)

Cloud of Controversy Looms Over Nuclear Weapons Modernization

By Sandra Erwin

August 23, 2017

Donald Trump recently reminded the world that his “first order as president was to renovate and modernize our nuclear arsenal.” And he tweeted: “Hopefully we will never have to use this power, but there will never be a time that we are not the most powerful nation in the world!”

The president’s hot rhetoric, alas, is about to collide with the cold fiscal and political realities of nuclear weapons modernization.

The U.S. Air Force this week took a major step forward when it selected Boeing and Northrop Grumman to begin designing a nuclear-armed intercontinental ballistic missile to replace the 50-year-old Minuteman.

The August 21 announcement did not come as a surprise. The Air Force had been steadfast in its plans to start acquiring the next-generation ICBM, known as the ground-based strategic deterrent program. It solicited proposals last summer and bids were due in October. Each of the winners received a \$349 million award for the so-called “technology maturation and risk reduction” phase of the project. Boeing and Northrop beat out Lockheed Martin in the high-stakes competition.

The contractors, over the next three years, will map out their concepts for how to build, deploy and maintain a fleet of more than 600 missiles. The ground-based strategic deterrent, or GBSD, is the land-based leg of the nation’s nuclear triad. Along with the Navy’s nuclear missile submarines and the Air Force’s nuclear-armed stealth bombers, they exist for the sole purpose of deterring other countries from launching a thermonuclear war.

Congress this fall will be digging deeper into the Pentagon’s planned modernization of the triad and expects to receive an updated “nuclear posture review” from the Defense Department. While a debate is expected on the geopolitical realities that compel the United States to continue to fund these programs, the projected \$400 billion price tag for the modernization looms large.

The GBSD program alone is projected to cost up to \$80 billion for the missiles and ground infrastructure. Critics have suggested the Air Force should save the money and continue to upgrade the aging Minuteman III inventory. Others have floated the idea of completely doing away with the land-based leg of the triad, arguing that the Navy’s new Columbia-class submarines and the Air Force’s B-2 and B-21 stealth bombers will provide sufficient deterrence.

Daunting fiscal and political hurdles should be a concern for the Air Force and for the contractors in this program, noted defense industry analyst Byron Callan of Capital Alpha Partners. “We remain guarded on prospects for GBSD,” he wrote in a note to investors. The Pentagon simply will not have enough money to pay for everything it wants over the next decade. “There’s the nuclear triad, Army modernization, Navy expansion, new space systems, the F-35 joint strike fighter,” he argued. “Funding will be constrained.”

Defense Secretary Jim Mattis has said repeatedly the Pentagon will need a major budget boost to pay for long-term modernization needs. But it is hard to envision how that will happen in an era of deep partisan divisions and no consensus on national security funding priorities.

The GBSD today is the most politically vulnerable of the three legs. The Navy’s Columbia-class submarine program seems “quite safe,” said Callan. The Air Force’s super-secret B-21 bomber has dual conventional and nuclear roles, and its development is said to be progressing. Meanwhile, “we continue to wonder about the logic and cost of replacing land-based ICBMs,” he said. Some

fundamental questions have yet to be asked: “What's the incremental deterrent value of a land-based ICBM force? Why not use maneuvering hypersonic weapons? And who is being deterred?” Also, is the GBSD the way to deter Russia in the 2020s and how much does this matter to China?

Kingston Reif, a nuclear weapons analyst at the Arms Control Association, said the GBSD program is “ripe for further scrutiny.” A debate is expected on Capitol Hill on “whether GBSD is the most cost-effective way to replace the Minuteman III system,” Reif said. “The Air Force has yet to make a compelling case, in my view, as to why another Minuteman III life extension isn't a viable option in the near term.”

The Pentagon has rejected these arguments and intends to forcefully defend investments in a new land-based leg of the triad.

“Yes, it's a lot of money. But it is well worth it given world conditions,” former Air Force Secretary Deborah James told RealClearDefense.

James, who served during the Obama administration, was one of the architects of the GBSD program and one of its most ardent advocates. “I do recognize that there are different viewpoints,” she said. But the “preponderant view” now is that the global security environment warrants these investments.

“Russia is building up its nuclear arsenal. North Korea is posing threats that 15 to 20 years ago we didn't even think about,” said James. “This is probably no time to radically change the triad approach that has served us well for over 70 years.” And she noted that the cost — about 4 to 5 percent of the defense budget — should not be cause for alarm.

James predicts that GBSD contractors will refine the cost estimates and introduce new technologies that will make the new system cheaper to operate than the Cold War-era Minuteman missiles

“The last time we developed ICBM technology was more than 40 years ago,” she said. “A lot has changed and we are using very old data.”

Air Force Chief of Staff Gen. David Goldfein said the ICBM modernization is not up for debate. “As others have stated, the only thing more expensive than deterrence is fighting a war. The Minuteman III is 45 years old. It is time to upgrade.”

Nuclear weapons experts who have studied the history of strategic deterrence predict the triad will survive whatever political storms lie ahead. No U.S. administration wants to be the one blamed for weakening the nation's posture.

What makes the triad hard to break is that each leg is supposed to be independent. The Pentagon designed it that way so any of the three legs can inflict unacceptable damage. “Bombers are more flexible. Submarines are viewed as the last resort. But the ICBMs are viewed as the most stabilizing leg,” said an industry official who spoke on condition of anonymity.

The Minuteman III leg features 450 hardened silos that are connected to the president through redundant and assured communications, he noted. “It would require a massive attack to eliminate the ICBMs. It poses an adversary an insurmountable obstacle,” the official said. “If we did not have the ICBMs our nuclear force would resemble France, with just submarines and bombers. ICBMs -- because of the sheer number of targets -- play a critical role in stabilizing the nuclear balance. And you need varied means of attack so adversaries don't focus on just one thing.”

http://www.realcleardefense.com/articles/2017/08/23/cloud_of_controversy_looms_over_nuclear_weapons_modernization_112122.html

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US COUNTER-WMD

War on the Rocks (Washington, DC)

Long Ignored: The Use of Chemical and Biological Weapons Against Insurgents

By Glenn Cross

August 15, 2017

A conventional shibboleth is that chemical and biological agents have no place in modern conflicts. In this view, chemical and biological agents are not useful because they are inhumane, uncontrollable, ineffective, or obsolete in the face of modern conventional weapons. These arguments were put forth when the U.S. decided to ban biological weapons, and later applied to chemical weapons. However, a review of chemical and biological weapons use since the end of World War I puts the lie to many of these claims. Chemical and biological agents possess significant utility in modern counterinsurgency campaigns, as Rhodesia and Syria have demonstrated. (One disclaimer is apropos at this point: This argument does not justify or condone the use of chemical or biological agents in any form or at any time unless legally sanctioned by the relevant international agreements.)

Throughout history, chemical and biological agents have demonstrated effectiveness against ill-equipped, ill-prepared, or poorly trained adversaries, especially insurgents. Examples of the use of these weapons against insurgents include Spain (Rif war, 1921-1927), Italy (1935-1936), Egypt (1963-1967), Rhodesia (mid-late 1970s), South Africa (1980s), Libya (1987), Iraq (1988), and Syria (2013-ongoing). And while the Spanish, Italian, Egyptian and Libyan uses are examples of the use of chemical weapons in inter-state conflict, most of the cases involve colonial governments using the weapons against native insurrections. The Rhodesian example illustrates a regime's largely internal use of chemical and biological agents against insurgents. These are clear parallels between this example and Syria's well-publicized use of chlorine and sarin against civilians, which has been ongoing since 2013.

As Chris Quillen points out, Arab nations used chemical weapons after conventional forces proved ineffective in the wake of prolonged conflict that strained economies, weakened international standing, and threatened vital assets. Quillen argues that chemical agents were used as a weapon of last resort and that therefore, these cases demonstrate the strength of the norms and taboos prohibiting the use of these weapons.

But a counterargument is that international norms are weakened with each consecutive use and the absence of an effective response. Richard Russell asserted in a 2005 article that "Nation-states are likely to learn from Saddam [Hussein] that chemical weapons are useful for waging war against nation-states ill-prepared to fight on a chemical battlefield as well as against internal insurgents and rebellious civilians."

The conclusion from these examples is that regimes in extremis — when the battle is for their very survival — seem to have little compunction about resorting to chemical and biological weapons use. The much-heralded international norms and conventions prohibiting and condemning chemical and biological development and use go out the window when a regime's survival is at stake. In academic and policy circles, the norms against chemical and biological development and use seem almost sacrosanct, inviolable. The Rhodesian case dispels the myth and offers a more nuanced understanding of the role the norms play and the circumstances in which those norms are abandoned. When regimes are fighting for survival and perceive that chemical or biological agents

can help defeat an insurgency, the use of these weapons becomes more attractive despite the existence of norms. The examples of Rhodesia and Syria show that the international community must be united and demonstrate the requisite political will to enforce norms if the use of chemical and biological weapons is to be prevented.

The Rhodesian Case Study

The Rhodesian example is likely the only example of biological weapons use by a nation since the end of World War II. The case allows us to examine the rationale behind a decision not only to develop, but also to use, biological weapons agents. Rhodesia also sheds light on other post-World War II chemical weapons cases, such as Iraq's, particularly against its Kurdish population, and Syria's, against insurgents in its civil war.

The lesson of Rhodesia and Syria is that regimes are much more likely to use these unconventional agents against internal opposition (i.e., insurgents and rebellious populations) than against foreign state adversaries. The Rhodesian case demonstrates how a small, internationally isolated regime can develop effective chemical and biological agents undetected and use those agents with lethal effect against both internal and external guerrilla threats.

Rhodesia covertly established a rudimentary, small-scale chemical and biological program using readily available materials, equipment, and techniques. Starting in 1965, Rhodesia faced international sanctions and a blockade of supplies entering the country through Mozambique's port of Beira. Salisbury depended on Portugal (until the 1974 coup) and South Africa for foreign support (which became increasingly sporadic after 1975). The loss of Portuguese support and the unpredictability of South African assistance led Rhodesia to turn to chemical and biological weapons as self-help.

Rhodesian decision-makers adopted an unconventional response to the growing imbalance that favored the far more numerous insurgents. After the collapse of Portuguese colonial power in Mozambique — along with the dramatic increase in guerrilla recruitments and the escalating violence — people within the security structure realized the counterinsurgency could not be won solely through the conventional military.

With scant material resources, the project employed relative novices in basic facilities to produce significant amounts of lethal material in a short period of time. The Rhodesian effort also shows that states, groups, or individuals lacking funds or sophisticated equipment can easily use toxic agricultural and industrial chemicals as chemical weapons agents. By minimizing reliance on foreign suppliers and limiting personnel to a small, tightly knit group, nations and non-state actors can reduce the likelihood of discovery by foreign intelligence services.

If the Rhodesian sources are credible, their chemical and biological effort at times inflicted more guerrilla casualties than the conventional military operations did. This comparative success was largely due to guerrilla hit-and-run tactics that emphasized avoiding contact with Rhodesian forces in favor of attacking softer civilian targets. In other words, where the Rhodesian military struggled to locate and engage an elusive foe, the chemical and biological effort sought to kill the guerrillas in their camps and bases, and among their village supporters. These attributes made chemical and biological warfare well-suited to counterinsurgency when the regime's aim was survival.

The lessons of the Rhodesian chemical and biological program and its legacy are more relevant today than is commonly realized. Outside the international system — and already under crushing sanctions — Rhodesia had very little to lose in adopting chemical and biological agents. International opprobrium would have had little effect on Rhodesian decision-making. Second, little global attention was focused on events inside Rhodesia. What little attention Rhodesia did get myopically monitored Soviet and Chinese support for the insurgent parties, who were widely seen

as Marxist proxies. The covert nature of the Rhodesian program compounded the lack of attention. Western diplomatic, intelligence, and journalistic channels did not report the Rhodesian production and use of chemical and biological agents, despite ineffective insurgent efforts to raise awareness of the issue.

International norms against chemical and biological weapons had no impact on Rhodesia's decision to use these agents. Although the regime was aware of treaty obligations, no evidence exists to suggest that Rhodesian authorities even debated the reaction of the international community when they established their chemical and biological weapons effort. As a footnote, the British government deposited a reservation to the Biological Weapons and Toxins Convention in March 1975 stating that the U.K. could not be held liable for any breach of the convention that might occur in Rhodesia while the colony remained beyond British control. The Soviet Union promptly protested the British reservation. Clearly, authorities in London wanted to avoid blame for any Rhodesian violations of the Biological Weapons and Toxins Convention, while Moscow sought to hold the U.K. culpable for acts by the rebellious Rhodesians. In either case, the outlaw Rhodesians actually involved in biological weapons use were beyond the pale of international obligation. The Rhodesians believed using these agents against the counterinsurgency was necessary to preserve their regime and way of life regardless of international law.

The Syrian Example

Like the Iraqi chemical weapons program, Syria's interest in chemical weapons began after the Egyptian use in Yemen in the 1960s. However, Damascus did not adopt a full-fledged chemical weapons program until its military inferiority was unmasked by the 1982 Israeli invasion of Lebanon. The sense of inferiority — and the perceived unwillingness of Arab neighbors to rise to Syria's aid — resulted in Damascus' adoption of chemical weapons by the mid-1980s. Chemical weapons were the most expedient means of protecting the Assad regime from catastrophic defeat at Israeli hands. Similarly, the Rhodesian chemical and biological effort began out of an increasing awareness of the deteriorating security situation in the face of international isolation.

Even though Damascus's interest in chemical weapons first arose in an international/regional context focused on deterring Israel, the utility of the weapons for the Syrian regime has been, like Rhodesia, in countering its internal insurgency. The Syrian attack on Khan Sheikhoun demonstrates the utility of chemical weapons in the counterinsurgency. According to the declassified assessment by the U.S. intelligence community, released on April 11, 2017:

The Syrian regime maintains the capability and intent to use chemical weapons against the opposition to prevent the loss of territory deemed critical to its survival. We assess that Damascus launched this chemical attack in response to an opposition offensive in northern Hamah Province that threatened key infrastructure.

On the same day, a senior U.S. official elaborated on the threat posed by the rebel offensive in Hamah. The official stated:

The regime we think calculated that with its manpower spread quite thin, trying to support both defensive operations and consolidation operations in Aleppo and along that north-south spine of western Syria, and also trying to support operations which required it to send manpower and resources east toward Palmyra, we believe that the regime probably calculated at that point that chemical weapons were necessary in order to try to make up for the manpower deficiency.

These assessments clearly illustrate that Damascus resorted to the use of chemical weapons to compensate for inadequate conventional military resources as it sought to counter an imminent threat to a key population center and a vital air base. The U.S. intelligence assessment even emphasized these regime assets as "critical to its survival."

Effective Constraints on Chemical And Biological Use

Although a prevailing assumption has held that chemical and biological weapons will not be used because of a combination of ineffectiveness, international norms, and international agreements, Rhodesia and Syria show that this perspective doesn't tell the full story. Deterrence (i.e., the credible threat of military action) likely is the only effective means of preventing the use of these weapons. International agreements and prohibitive international norms or taboos are largely ineffective unless the political will exists to punish the transgressor. Prohibitions against chemical and biological weapons are enshrined in international agreements, most notably the Biological Weapons and Toxins Convention and the Chemical Weapons Convention. Yet these agreements have been ineffective in constraining the production and use of these agents.

The political will for action in the international community has also long been severely lacking — witness the inaction after the gassing in Halabja and President Obama's "red line" in Syria. After the Obama administration ultimately decided against striking Syria in 2013, the Kerry-Lavrov agreement resulted in Damascus' accession to the Chemical Weapon Convention and its surrender of declared chemical weapons stocks for destruction. Yet as later events demonstrated, Syria retained chemical weapons materials and remained willing to use them against civilians, making the ultimate value of the Kerry-Lavrov agreement questionable.

Despite the conventions, several state parties to these agreements likely have chemical and/or biological weapons programs. A number of states have maintained biological weapons programs in contravention to the Biological Weapons Convention, as demonstrated by the well-known example of Yeltsin's termination of the Soviet program in 1992. Another party to the convention, South Africa, developed and used biological weapons agents for over a decade after ratifying the agreement. Although the Chemical Weapons Convention now has been in force for 20 years, several signatories likely still possess chemical weapons. According to a June 2017 fact sheet assembled by the Arms Control Association, convention signatories thought to possibly retain covert chemical agents or munitions include China, Iran, Israel, North Korea, Russia, and Syria.

The apparent lack of international political will to confront the use of chemical and biological weapons should be evidence that the norms and taboos against the production, possession, and use of these weapons have eroded. Those norms and taboos represent the prevailing international consensus — embodied in international agreements — that underpins the political will to action. Norms represent a consensus defining appropriate and inappropriate conduct by nation-states under anarchic conditions. Norms are not universal nor are they immutable.

Taboos, on the other hand, are prohibitions on conduct considered so morally repugnant and reprehensible so as to be universally condemned. Following the experiences of World War I, chemical and biological weapons became taboo. But even so, World War II saw a massive increase in the number of national chemical and biological programs. Arguably, Allied and Axis powers were deterred from using these weapons by fear of retaliation from the opposing side.

Yet the Axis powers used chemical and biological agents on an enormous scale against vulnerable populations. Japanese units using weapons developed by Unit 731 wrought untold destruction on Chinese military units and civilian communities. For his part, Adolf Hitler may have prohibited use of chemical and biological agents against Allied forces, yet he was not dissuaded from using poison gas (Zyklon B) against millions of civilians. In neither of these instances was the taboo effective. The effect of deterrence and the relevance of international norms in preventing chemical and biological weapons use is arguably lessened when a nation-state is facing an ill-prepared or vulnerable population. The Arab, Rhodesian, and South African cases all bear this out.

Syria's recent use of chemical weapons likely has diminished effectiveness of the chemical and biological prohibitions, as have previous uses (i.e., Egypt, Libya, and Iraq). The international community's failure to act more decisively may embolden other marginal nations to explore chemical and biological adoption and use to counter threats to their internal security.

Although the U.S. cruise missile strike on April 6, 2017, against Syria's Shayrat airfield signalled Washington's resolve to punish Damascus for future chemical weapons use, the political impact (and legality) of the U.S. strike remains debatable, especially given allegations of continued Syrian use. According to an article in the German paper Die Welt in July 2017, "Western intelligence agencies confirmed to Die Welt that Syria's government continues to use poison gas against its own population. Apparently, the regime understands the latest signals from the U.S. as an encouragement." As of early June 2017, the U.S. government itself warned of a possibly imminent Syria chemical weapons attack, further suggesting the attack on Shayrat failed to sufficiently punish the Assad regime.

One reason the U.S. strike may not have prevented further use is that it came from the U.S. alone. Unilateral action against the transgressor demonstrated the weakness of the norm in that the international community lacked the political will to act. The absence of political will is highlighted by Russia's repeated vetoes of U.N. resolutions condemning Syria for its chemical weapons use. Furthermore, a member of the U.N.'s war crimes commission, Carla Del Ponte, resigned in early August 2017, saying, "The Assad government has perpetrated horrible crimes against humanity and used chemical weapons...I am quitting this commission, which is not backed by any political will. I have no power as long as the [U.N.] Security Council does nothing. There is no justice for Syria."

The Bottom Line

Despite the international moratorium on chemical weapons use in interstate conflict, these agents are effective in suppressing internal violence. Chemical and biological weapons' lack of utility against well-prepared, well-equipped adversaries deters their use against modern militaries, yet historically the weapons have been effective against the unprepared or vulnerable.

The post-World War II examples of chemical weapons use show that their greatest utility is in intrastate counterinsurgency operations and in attacks on ill-prepared and poorly equipped or trained adversaries. This perceived advantage is likely the greatest obstacle to the elimination of these arms from national arsenals. As demonstrated in Rhodesia, Iraq, and Syria, the norm against chemical and biological weapons use is weakest in low-intensity counterinsurgencies involving rogue or pariah regimes, and when poisons and toxins are used in special operations and assassinations (examples include Chile under Pinochet, South Africa, and Russia). The Rhodesian and Syrian cases clearly show the relative inability of international norms to prevent the use of chemical and biological weapons in these cases. For norms to be truly effective, there must be unanimity among nations about enforcing the prohibitions. As we've seen in Syria, such consensus is elusive, and the international community has failed to act. As a consequence, the world faces a sad, but inevitable conclusion. The Syrian regime is unlikely to ever face justice for its use of chemical weapons.

<https://warontherocks.com/2017/08/long-ignored-the-use-of-chemical-and-biological-weapons-against-insurgents/>

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Genetic Engineering & Biotechnology News (New Rochelle, NY)

At CRISPRcon, Debating the Promise and Perils of Gene Editing

By Kevin Davies

August 17, 2017

CRISPRcon: Science, Society, and the Future of Gene Editing, a timely two-day conference attracting hundreds of attendees to the University of California, Berkeley campus, kicked off yesterday, August 16, 2017, with a keynote from CRISPR pioneer and hometown hero, Jennifer Doudna, Ph.D.

Aside from being one of the key developers of CRISPR gene-editing technology, Doudna, a Howard Hughes Medical Institute investigator at UC Berkeley, has played a leading role in demanding a broader public discussion of the potential benefits and dangers of gene-editing technology. Her motivation traces back to 2014, when she was called by a reporter to comment on a new paper on CRISPR monkey embryo editing. "I started thinking, if you can do this in mice and rats and monkeys, then why not humans?" Doudna recalled.

Since then, there have been several important meetings to debate CRISPR technology, and several important reports, including one published earlier this year from the National Academy of Sciences. That report concluded that germline editing of human embryos might be permitted under certain criteria.

The urgency for public debate also stems from the fact, as Doudna said, that "CRISPR is a democratizing tool...people don't need great expertise to use it."

Illustrating that point, Doudna displayed a series of popular science headlines (actually all taken from WIRED magazine). The wealth of CRISPR applications include creating hornless cattle, treating blood diseases, controlling mosquito-borne diseases, identifying cancer genes in endangered species (such as the Tasmanian devil), generating human-pig chimeras, germline editing of embryos, clinical trials for cancer immunotherapy, and a plethora of gene-cutting research studies in a host of different organisms, including new models such as the killifish.

The technology is not only relatively easy to deploy, but progressing at a dizzying pace. CRISPR "is not magical, not perfect," Doudna said, but "this is an incredibly fast-moving area. I've been doing science for almost 25 years professionally and I've never seen science moving at the pace it is now....We can't put off these [ethical] conversations."

Doudna highlighted three studies published in just the past two to three months: a report in *Molecular Therapy* showing that researchers can excise the human immunodeficiency virus (HIV) provirus in animal models; a paper in *Cell* using CRISPR to increase fruit yields in tomatoes; and a high-profile paper in *Science* from eGenesis, a Boston start-up cofounded by Harvard's George Church, Ph.D., using CRISPR to develop pig strains lacking copies of a natural porcine virus as a prelude, perhaps, to safer organ transplants.

The Gene Protocol

Much of the discussion at CRISPRcon will undoubtedly fixate on the pros and cons of human germline engineering, especially in light of the landmark human embryo gene-editing study published in *Nature* earlier this month led by Shoukhrat Mitalipov, Ph.D., and colleagues at Oregon Health & Science University in Portland. Doudna, with considerable understatement, said it had been "a very interesting few months." She noted several reports from groups in China had previously shown some success in using CRISPR in nonviable human embryos, but taken together, "they were not so informative because they didn't present a comprehensive protocol."

By contrast, the Nature paper “really did present a comprehensive protocol” and “sets the stage for clinical use.” The authors, Doudna continued, “showed importantly that there were very few off-target events” in the human embryo, as well as almost no signs of mosaicism. “This technology can be very robust in viable human embryos,” she concluded.

“We know this can work, but are we going to go there or not?” Doudna said. “Many important and fundamental questions need to be addressed, including access, [and] ethical and societal implications.”

As she surveyed the whirlwind field she helped unleash, Doudna stressed that scientists need to take an active role in debating the potential of CRISPR. Several key questions need to be addressed at gatherings such as CRISPRcon, including:

What needs to happen for gene editing to be widely adopted by technical practitioners?

How will CRISPR be democratized even further?

What are the cost considerations of genome-edited products? (Doudna said she was frequently contacted by farmers curious to know how CRISPR will impact their business and livelihoods.)

Social acceptance: Are there lessons to be learned from the history of previous genetically modified crops, such as Golden Rice, that are relevant to CRISPR?

Ethics: Are there safeguards against side effects of genetic manipulation for therapeutic uses, (e.g., off-target effects)?

Asked which genes she thinks could potentially be amenable to CRISPR editing in humans, Doudna said the priority should be to look for situations where there is no reasonable alternative (such as genetic counseling or preimplantation genetic diagnosis) to tackle the disorder.

In an interactive poll, the CRISPRcon audience was asked to name its chief fears about CRISPR technology. The most common responses included eugenics (“Gattaca”) and bioterror (“an arms race”). One response, in particular, caught the eye: “X-Men”.

It wasn’t clear if it was intended as a joke.

<http://www.genengnews.com/gen-news-highlights/at-crisprcon-debating-the-promise-and-perils-of-gene-editing/81254820>

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Phys.org (Isle of Man, UK)

New SQUID-Based Detector Opens Up New Fields of Study With New Level of Sensitivity

Author Not Attributed

August 11, 2017

Investigators at the University of Colorado, Boulder and the National Institute of Standards and Technology (NIST) have developed a new sensor array-based instrument that offers ultra-low noise detection of small amounts of energy for a number of applications. The new device allows for the collection of data from many more detectors than was previously possible. The advance, reported in this week's issue of *Applied Physics Letters*, is expected to allow applications in fields as diverse as nuclear materials accounting, astrophysics and X-ray spectrometry.

The instrument consists of 128 superconducting sensors and combines their output into a single channel provided by a pair of coaxial cables. In the past, array size was limited by the bandwidth

available to combine signals into a reasonable number of output channels. This new research demonstrates a hundred-fold bandwidth improvement, and the investigators plan to do even better soon. They overcame the bandwidth barrier by using very cold superconducting microwave circuitry and superconducting quantum interference device amplifiers, known as SQUIDs, capable of boosting the intensity of small signals.

The new device uses radiofrequency SQUIDs to regulate high-quality microwave resonators. When these resonators are coupled to a common microwave feed line, with each resonator tuned to a different frequency, all sensors can be simultaneously monitored.

"It's as if one were trying to listen to hundreds of radio stations at one time, through one radio receiver," said Ben Mates of the University of Colorado and lead author of the work. The SQUID resonators boost the signal in each channel, he explained, allowing simultaneous readout of all the radio stations at once.

Versions of the new instrument can detect signals over a wide range of frequencies, from short-wavelength gamma or X-rays to long-wavelength microwaves. Gamma ray detection is crucial for nuclear materials accounting, particularly for tracking plutonium isotopes in spent nuclear fuels. Since plutonium can be used to create nuclear weapons, it is important to have fast, accurate methods to measure the amount of plutonium in nuclear fuel sent for reprocessing.

Current technology for tracking plutonium uses mass spectrometry, but this method is expensive and time consuming. Faster and less costly technologies based on gamma-ray spectroscopy don't have the accuracy to rule out small discrepancies in amounts of plutonium from a large facility. Only 8-10 kilograms of missing material is needed to build a nuclear bomb. The new array detectors are candidates to improve the accuracy of gamma-ray spectroscopy so that nuclear material can be tracked more easily.

At the other end of the spectrum, the new instrument is expected to improve astronomical studies of cosmic microwave background radiation, which is mostly uniform, although small and important fluctuations exist in its intensity and polarization. The researchers predict that similar versions of their instrument will be used to search for fluctuations in polarization that are a signature of an inflationary epoch in the earliest moments of the universe.

The investigators hope that a larger array will allow them to develop, in collaboration with the Department of Energy's SLAC facility at Stanford, a unique spectrometer capable of simultaneously collecting and precisely measuring many high energy X-rays from materials under study at the California facility's X-ray free electron laser. Penetrating X-rays from this powerful tool are increasingly used to understand the properties of matter on ultrashort timescales, but larger detector arrays are desirable even for this bright X-ray source. Toward this end, future work will focus on increasing the array size to a thousand sensors or more.

<https://phys.org/news/2017-08-squid-based-detector-fields-sensitivity.html>

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Department of Defense (Washington, DC)

National Guard WMD Civil Support Teams Pursue Innovation

By Darron Salzer

August 21, 2017

National Guard weapons of mass destruction civil support teams respond to chemical, biological, radiological and nuclear incidents throughout the homeland and advise and assist local and civil authorities on response measures.

A team's success can often be measured by how quickly it can analyze and identify the threat and provide incident commander with an assessment for containing the situation.

The National Guard Bureau's Malcolm Reese is leading the effort to devise innovations to shorten the time from the team's arrival on site to its assessment. Reese is the joint program manager for the combating weapons of mass destruction division of the Guard Bureau's operations directorate.

When Reese saw an innovative opportunity to repurpose the Army's Talon IV unmanned robots, he and his team worked alongside other Defense Department agencies to generate DoD's first robotic CBRN capability.

"What we basically did was take a system that was already designed for a particular mission requirement and ... re-mission [it] for the civil support teams," said Reese, whose job is to help validate new technologies that could strengthen the National Guard's CBRN capabilities.

The Talon IV was used in Iraq and Afghanistan by explosive ordnance disposal teams, and equipment became available for other applications as those missions wound down. To ready the robots for the CBRN mission, chemical, biological, radiological and toxic industrial material sensors were installed, as well as an upgraded communication system, infrared day/night cameras and an autonomous mapping system.

Remote Entry to Unknown Environments

These upgrades allow for remote entry to unknown CBRN environments, Reese said. "[It] eliminates the need to put soldiers and airmen in harm's way without compromising the mission," he added.

WMD-CST personnel, as hazardous materials technicians, must don extensive protective equipment before entering a contaminated area. Reese said that process can take up valuable time, and the protective equipment can be restrictive when conducting reconnaissance to verify the type and extent of contamination.

Eliminating the need to "suit up" is a force multiplier for Air Force Tech. Sgt. Brett Whitfill, a survey team chief from the Kansas National Guard's 73rd Civil Support Team.

"With this [equipment] we could pull it out of our truck or trailer, set it up and send it downrange to investigate," he said. "We [can] get real-time data and real-time feedback."

In addition to data gathering, Whitfill said, the robots will allow teams to work longer hours. "It doesn't get tired; it doesn't want to sleep," he said. "We get multiple hours of use with it, and that is valuable."

Familiarization Training

Whitfill and other CST members from Hawaii, New York and Ohio recently attended a one-week training course at the Robot Logistics Support Center here, familiarizing themselves with the new equipment. So far, 26 of the Guard's 57 teams have attended that training.

"It's been a really positive experience," said Tim Nichols, lead instructor and repair technician at the center. "The teams [responded to] the equipment really well and ... interfaced with the controls, which are very similar to a lot of modern video games."

In addition to working with the Guard Bureau, the RLSC also provides robot sustainment and training support to the Army, Marine Corps, Air Force and other joint services.

Nichols said the opportunity to train and equip the CST mission was another testament to how his organization has helped to give a second life to equipment that could otherwise be collecting dust.

"[It] is a win for everyone," he said. "It allows the utilization of equipment that is already in the government's inventory and draws on more than a decade of experience that the RLSC has to offer."

More importantly, Nichols noted, the robots save lives. "The CST mission is unique and unpredictable," he said. "The robots eliminate CST members from having to perform dangerous and mundane tasks."

Innovation as a Priority

Innovative ideas that reduce risk to Guard members, improve capabilities and save taxpayer dollars are of the utmost interest to senior leaders, Reese said, including Air Force Gen. Joseph L. Lengyel, chief of the National Guard Bureau, who has made innovation one of his top priorities. Innovation is simply part of the organization's DNA, he added.

"The vast majority of Guardsmen have civilian and military skills," he said. "As a result, they approach military problems with a different perspective."

To capitalize on that spirit, Lengyel launched the National Guard Innovation and Agility Campaign to help drive and facilitate ideas from across the force and build upon the inherent ability of citizen soldiers and airmen to be agile problem solvers.

"With innovation as a top priority, we continue to look for ways to validate current and emerging technologies to provide more dynamic capabilities to our men and women," Reese said.

<https://www.defense.gov/News/Article/Article/1284449/national-guard-wmd-civil-support-teams-pursue-innovation/>

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US ARMS CONTROL

Arms Control Wonk (Washington, DC)

GLOCOM Is at it Again

By Andrea Berger

August 22, 2017

Readers may recall my earlier rantings about a company called 'Glocom', a North Korean military communications firm masquerading as Malaysian, and selling missile navigation systems and other arms-related products around the world. The company was outed by the UN Panel of Experts and a Reuters special investigation in February, around the time of Kim Jong Nam's assassination. We did a podcast on the company, which has juicy details of the case and the "perfect storm" that Malaysia faced as a result. But five months on, it looks like Glocom is still at it.

In the aftermath of the February revelations, Kuala Lumpur pledged to investigate Glocom and its networks. Corporate registry documents now indicate that most – but not all – of the firms controlled by the North Koreans behind Glocom are in the process of being struck off the registry. Malaysian authorities appear to have been busy, though it is unclear why some of the North Korean-linked entities in the network have been left untouched, at least on paper.

You might think that a Malaysian police investigation, a UN investigation, and all that negative media attention to Glocom and its products would make the network go underground for a while. Its brand has been significantly and publicly tainted, and its links to North Korea demonstrated beyond any doubt. Future customers would have difficulty feigning ignorance of the company's ties, or going through with a deal without at some point stumbling across evidence that Glocom is a front for North Korean intelligence, unless they do no due diligence whatsoever. Not even a Google search. So it is logical that North Korea would seek to create a new, shadowy brand for its military communications exports.....right?

Apparently, Glocom is not our traditional game of counter-proliferation 'whack-a-mole'. Between 15-27 July 2017, the company published a set of new marketing videos on Youtube.

North Korea's decision to stick with the tarred Glocom brand could indicate a number of things: that Pyongyang has become reliant on that particular branding for its success in selling military communications technology overseas; or, perhaps, that its customers are the type that simply don't care.

The fact that these videos made their way onto YouTube and have yet to be removed is also interesting. Service providers have an obligation to ensure that they are not contributing to violations of sanctions and export controls, as outlined in the laws of the countries they operate in. Alibaba, for example, came under fire for this a few years ago.

I'm no expert in the legal specifics of circumstances like this, but YouTube appears to be aware that it has such an obligation, including as it relates to North Korea sanctions. Compliance considerations are likely partly behind YouTube's recent removal of other North Korea-linked content, namely North Korean official media or promotional videos. Recent rounds of US sanctions have targeted the North Korean entities which produce propaganda, so redistributing and earning advertising revenue from their content may be seen as either as a sanctions breach or coming close enough for the US Office of Foreign Assets Control to eventually interpret it as such.

However, the fact that Glocom was able to put up new videos without being immediately flagged, suggests YouTube's North Korea-focused compliance efforts are list-based or otherwise driven by individual cases of reported content. Even though its activities are firmly illegal, Glocom itself has not been sanctioned or listed as the alias of another designated entity, and so will not appear on the formal sanctions lists against which private sector entities usually screen. This is a recurring issue in the sanctions space – the portion of sanctions violations that even the most well-meaning companies independently catch drops substantially if the individual/entity's name does not appear on a formal list.

I digress. In addition to the new Glocom website that was launched in January 2017 just before the UN report and Reuters stories were published, these five videos are a real treat. The contrast between the quality of some of them, and the North Korean military product brochures from a few years ago that I used to study, is striking.

That may be in part to do with the fact that an external graphics specialist helped Glocom make some of the snazzy new videos, which look like they are straight out of Call of Duty. I defer to the brilliant members of our Slack channel to tell me if they actually borrow from Call of Duty. It wouldn't be the first time.

Glocom's C4ISR video is by far my favourite. The Korean-accented narrator introduces the watcher to "Operation Prometheus", in which Glocom-equipped forces deliver supplies to formerly terrorist-controlled areas. This scenario should give you an idea of the kind of customer North Korea has in mind for Glocom products. I also loved the Prometheus reference – giving fire to all mankind. Nice touch.

The video producers try to throw off anyone trying to geolocate Operation Prometheus, by showing fake coordinates that land you in the middle of nowhere in the Somalian desert (coordinates are at the very top center of the screenshot below). Needless to say, the lushly forested setting of Prometheus looks much more like North Korea than the Somalian desert.

My eagle-eyed colleague Dave Schmerler pointed out a few other fun things. For example, the control screens bear remarkable resemblance to those used for North Korea's solid fuel missile tests, right down to the power button and colour scheme.

Glocom also appears to have been concerned about whether users would get peckish whilst on duty.

Nuggets from other videos which sparked my interest include efforts to blur some of the brand labels on Glocom products and components, while leaving others visible. Take a look at the GS-2200 Vehicle System video to see what I mean (screenshots are included here for when the videos inevitably get taken down).

Following the various investigations earlier in 2017, some of Glocom's suppliers may have noticed their goods ending up in places they preferred them not to be. Glocom's brochures, for example, if carefully studied, revealed some well-known logos on sub-components. It is possible that these suppliers investigated and shut down the channels through which their products were illicitly procured, prompting greater North Korean sensitivity towards the images they release.

Nevertheless, the videos show that some components in the GS-2200 vehicle command and control system are from UK manufacturers, though they are fairly commercially available and are likely to have been sourced from China.

Also noteworthy are the systems Glocom advertises for unmanned aerial vehicle (UAV) applications. Analyses of the North Korean UAVs that crashed in 2015 showed that the platforms used externally-sourced navigation, communications, and imaging technology. Some attempts by North Korea to source such goods from Western countries have also been thwarted by relevant authorities and reported, again shining a light on parts of the North Korean supply chain. If North Korea is now marketing this technology, does that indicate that North Korea has found a steady foreign sub-components supply chain for the UAV systems that it exports? Or that it is able to make those goods indigenously?

Further reader observations from the Glocom videos or website are always gratefully received. I'll shortly be publishing a detailed case study report on the Glocom network and its structure, evasive tactics, and financial conduits, so keep your eyes peeled for that too.

Lastly, if you haven't already, find an hour to watch the BBC Documentary "North Korea: A Murder in the Family". The show's producers not only put together an excellent account of the Kim Jong Nam murder, but in the process found the new Glocom YouTube channel. That's top sleuthing.

<http://www.armscontrolwonk.com/archive/1203749/glocom-is-at-it-again/>

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Princeton University (Princeton, NJ)

Team to Use Virtual Reality to Help with Real-World Arms Control

By John Schoonejongen

August 21, 2017

Efforts to reduce nuclear stockpiles soon may get a boost from a team of Princeton University researchers and a socially responsible gaming company that are seeking to use virtual reality to help improve systems to discover and monitor nuclear materials worldwide.

Alexander Glaser, an associate professor of mechanical and aerospace engineering and international affairs, and New York City-based Games for Change were awarded a \$414,000 grant last month from the Carnegie Corporation of New York and the MacArthur Foundation. Their project, one of 11 selected, seeks to “employ virtual reality for innovation, collaboration and public awareness on nuclear arms control and materials security,” according to a corporation and foundation announcement.

The project participants will develop a full-motion virtual reality (VR) to “design and simulate new, cohesive arms-control treaty verification approaches” to reduce and secure nuclear weapons and materials, according to the proposal.

The first part of the project is meant to provide governments with new opportunities for cooperation in traditionally sticky nuclear arms-control efforts. The second part of the project will focus on raising awareness of the continuing dangers of nuclear weapons and material.

“While nuclear weapons are still very much around and relevant, and the risks posed by them are just as high as they used to be, the issues are much less salient today than they were during the Cold War,” Glaser said.

Glaser — along with Tamara Patton, a third-year doctoral student in the science, technology and environmental policy program at the Woodrow Wilson School of Public and International Affairs — worked with Games for Change to develop the proposal and pitch it to the Carnegie Corporation and the MacArthur Foundation.

“The basic idea is, can we leverage this new technology of virtual reality to actually facilitate collaboration in ... a virtual environment where the security risks are essentially nonexistent,” Patton said. “It’s much less expensive, it’s much more flexible. And, of course, we can do it remotely.”

VR depiction of a nuclear inspection site

The researcher’s program will feature virtual depictions of arms control inspection sites as shown here.

Photo courtesy of the researchers

Glaser said virtual reality can create a simulated world in which inspectors and others can see and document issues involving nuclear material. Demonstrating new verification techniques can encourage nation-to-nation cooperation with an aim of reducing nuclear materials around the globe, he said.

Virtual reality can be used for training and demonstration, which in turn can convince nations that inspections do not present insurmountable hurdles, Glaser said. The current version of the virtual reality setup is hosted at Princeton’s Council on Science and Technology’s StudioLab.

There is a pressing need for innovative ideas, such as the use of virtual reality, when it comes to nuclear weapons control, said Allison Macfarlane, a former chair of the U.S. Nuclear Regulatory Commission and now a professor of public policy and international affairs and director of the Institute for International Science and Technology Policy in the Elliott School of International Affairs at George Washington University.

“It’s essential to develop some new thinking around how to reduce the numbers of these materials,” said Macfarlane. She called Glaser a “top-notch” scientist and policy expert who is uniquely qualified to deliver on the project’s promise.

“He’s one of the few people really thinking outside the box,” Macfarlane said of Glaser. Part of the innovative nature of the project is the Princeton team’s collaboration with Games for Change, a nonprofit company which aids in the development of games designed to foster awareness of and promote solutions to real-world problems.

Games for Change will take the lead creating a virtual reality game that could be used in classrooms or other learning spaces to raise awareness of the continuing dangers of nuclear materials.

“Virtual reality offers a number of engagement opportunities for consumers,” said Susanna Pollack, president of Games for Change. “First of all, it gives them the opportunity to be in an environment in a safe manner rather than being exposed to something that is toxic or that has a high risk element to it. The second piece ... is the ability to transport somebody and immerse them into a world that otherwise is difficult to imagine.”

Patton said the consumer world is in the midst of a “VR renaissance” in which headsets are now reaching a wider consumer base than before. The increased sophistication and availability of virtual reality simulations present an opportunity to overcome the issues involved with access to nuclear sites.

“Before Alex and I even started working together, we were both watching this development, and it occurred to us that this would be a really useful space for our problem,” Patton said.

“We really have to get the younger generation on board with understanding what the threats are and then thinking about how to manage them,” Macfarlane said. “I think we have to meet them where they are, and ... virtual reality is a really innovative way to do that.”

<https://www.princeton.edu/news/2017/08/21/team-use-virtual-reality-help-real-world-arms-control>

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Al Arabiya English (Dubai, UAE)

US Demands Inspection of Iran’s Nuclear Sites

Author Not Attributed

August 23, 2017

The head of the UN’s atomic watchdog met US President Donald Trump’s UN envoy Nikki Haley on Wednesday to brief her on the 2015 Iran nuclear deal, as concerns grow about the accord’s future.

Reports by the Vienna-based International Atomic Energy Agency (IAEA) have shown Iran to be in compliance with its landmark agreement with six major powers.

The deal saw Iran shrink its atomic activities and submit to closer IAEA inspections in order to make any dash to make a nuclear bomb extremely difficult.

Most UN and Western sanctions on Iran were lifted in return, but others related to non-nuclear issues have remained in place or been ratcheted up.

With Trump slamming the “terrible” 2015 deal, tensions have risen between the two long-time foes, with both accusing each other of not adhering to the “spirit” of the accord.

President Hassan Rouhani said last week that Iran could walk away within hours, accusing Washington of “constant and repetitive breaking of its promises” under the deal.

Haley responded that the new sanctions are related to Iran’s support for “worldwide terrorism” and other behavior, and that Iran cannot “use the nuclear deal to hold the world hostage”.

Trump is due in October to certify to Congress whether Iran is sticking to the deal.

In July he told the Wall Street Journal he “would be surprised if they were in compliance”.

Haley made no comment to reporters on Wednesday as she arrived for her talks with IAEA chief Yukiya Amano.

The Washington Post on Tuesday quoted her as saying her talks were to answer US questions about the watchdog’s inspections and monitoring.

“We have no decision made” about whether to scrap the deal, Haley was quoted as saying.

“What we are doing is trying to find out as much information as we can.”

“The Trump administration needs a wake-up call on the costs of sabotaging the nuclear deal with Iran,” Arms Control Association analyst Kelsey Davenport told AFP.

“Hopefully visiting the IAEA will allay concerns about monitoring the agreement and demonstrate to Haley that the deal put Iran’s nuclear program under a microscope and keeping it there is the best way to guard against any illicit nuclear activity,” Davenport said.

<http://english.alarabiya.net/en/News/middle-east/2017/08/23/US-demands-inspection-of-Iran-s-nuclear-sites.html>

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The Guardian (London, UK)

Two North Korean shipments to Syria intercepted in six months, UN told

By Martin Chulov

August 22, 2017

Security council reportedly investigating suspected chemical and conventional arms cooperation between two countries

Two shipments from North Korea destined for the Syrian government agency responsible for chemical weapons have been intercepted in the past six months, according to a report provided to the United Nations security council in early August.

The report, which was revealed by Reuters on Tuesday, said both shipments were caught in the past six months. Syria’s chemical weapons programme is one of the most sensitive sectors of the Assad regime.

International observers said the shipments represented attempts to bolster outlawed weapons programmes in both countries and deepen a decades-long alliance in defiance of rigid international sanctions.

The report did not specify what the shipments contained. However, the Syrian Scientific Studies and Research Centre has long been custodian of the state's most sensitive secrets, including nuclear research, as well as ballistic missiles and an air defence programme. It has maintained close ties to the Korea Mining Development Trading Company (KOMID), which was blacklisted by the UN security council eight years ago.

According to Reuters, the report said: "The [security council] panel is investigating reported prohibited chemical, ballistic missile and conventional arms cooperation between Syria and the DPRK [North Korea]."

"Two member states interdicted shipments destined for Syria. Another member state informed the panel that it had reasons to believe that the goods were part of a KOMID contract with Syria."

North Korea and the Trump administration have been embroiled in a tense war of words over Pyongyang's nuclear programme, with both sides accusing each other of making military threats against each other. On Tuesday, Pyongyang's UN envoy, Ju Yong-chol, said the country's nuclear arsenal would never be up for negotiation.

"The measures taken by the DPRK to strengthen its nuclear deterrence and develop intercontinental rockets is justifiable and a legitimate option for self-defence in the face of such apparent and real threats," Ju said in Geneva.

Also on Tuesday, the US Treasury Department announced new sanctions on Chinese and Russian companies and individuals for supporting the North Korean weapons programme.

The Treasury secretary, Steven Mnuchin, said the US would "continue to increase pressure on North Korea by targeting those who support the advancement of nuclear and ballistic missile programmes and isolating them from the American financial system".

Fears have intensified that North Korea has maintained an extensive nuclear weapons programme despite sanctions that have aimed to curb it for the past 11 years. The UN has previously said attempts to bypass sanctions had been stymied.

Jerry Smith, a former chemical weapons inspector for the Organisation for the Prohibition of Chemical Weapons (OPCW), said: "In 2013 a North Korean ship was intercepted in the Panama canal. It had false manifests and hidden under a legitimate cargo was parts for fighter jets and rockets. It transpired that they were being refurbished in Cuba. That was an open example of how sanction-busting measures were taking place.

"In the past, the Australia Group [which attempts to stop the spread of components for chemical weapons] has taken a lead on combating the spread of biological and chemical weapons. The AG tends to be western-leaning and more or less represents the views of most OECD countries towards chemical and biological arms control. They share information on the trade in materials that could be used for WMD purposes. It may well have been that a tip-off from one AG member, perhaps from intelligence information from a satellite, would have led to these intercepts."

Syria's sarin stockpiles were largely withdrawn from the country in late 2013 after an attack using the banned chemical in the outer suburbs of Damascus that killed an estimated 1,300 people. That attack was widely blamed on the Syrian regime, as was another attack on the opposition-held town of Khan Sheikhun in northern Syria in April this year.

Hamish de Bretton-Gordon, a former head of the British military's chemical, biological and radiological weapons programme, said North Korea had stepped up efforts in recent years to take its skills to global black markets.

“Syria’s chemical weapons programme was basically built up by Iran and Russia,” he said. “But the North Koreans have been desperate for currency and have been happy to sell technology to anyone. It has always been a real concern that they would sell their chemical and nuclear expertise.

“Let’s hope it doesn’t speak to a wider involvement in the CBRN [chemical, biological, radiological and nuclear defence] sphere, especially by the jihadis.”

<https://www.theguardian.com/world/2017/aug/22/two-north-korean-shipments-to-syria-intercepted-in-six-months-un-told>

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ASIA-PACIFIC

The Telegraph (London, UK)

'A Very Bad Day': Kim Jong-Un Orders Production of More Warhead Tips as North Korea Reveals Missile Plans

By Julian Ryall

August 23, 2017

Kim Jong-un, the North Korean dictator, has ordered his scientists to step up production of warheads and solid fuel rocket engines for long-range ballistic missiles.

Requests in recent days from both South Korea and the United States for Pyongyang to halt its provocations and return to the discussion table appear to have fallen on deaf ears after Mr Kim was shown making his demand during a visit to the Chemical Material Institute of the Academy of Defence Sciences.

"He instructed the institute to produce more solid-fuel rocket engines and rocket warhead tips" through the use of carbon compounds, the Korean Central News Agency reported on Wednesday. Pictures show Mr Kim touring the research facility, trailed by uniformed officials assiduously scribbling in notebooks.

The displays and diagrams on the walls of the facility provided further hints about the regime's missile programmes, including the Pukguksong-2, an intermediate-range ballistic missile that is under development and was first test launched in February this year.

The nuclear-capable missile uses a solid-fuel propellant and is a significant improvement on the regime's earlier weapons, which were liquid-fuelled and took a long time to prepare for launch, making them easier to detect and counteract.

Road-mobile, the 30-foot Pukguksong-2 is believed to have a range of more than 1,200 miles.

The images have caused renewed concern among experts, with Jeffrey Lewis, the US expert in nuclear and nonproliferation and geopolitics, tweeting, "Maybe we should stop underestimating them".

George Herbert, an analyst, broke down the implications on Twitter, adding: "Today is a very bad day."

Mr Kim's latest "field guidance" is the first since August 14, when he visited the headquarters of the arm of the North Korean military that conducts missile launches.

In July, North Korea fired two Hwasong-14 intercontinental ballistic missiles, which analysts believe have the range to reach virtually all the continental US. Questions remain, however, over whether the North's scientists have been able to achieve atmospheric re-entry for a warhead.

Most recently, North Korea threatened to launch intermediate-range missiles into waters close to the US Pacific territory of Guam, which is a major military hub.

The US and South Korea are currently conducting military exercises, which Pyongyang has declared are a rehearsal for an invasion of the North and has warned will lead to unspecified retaliation.

<http://www.telegraph.co.uk/news/2017/08/23/bad-day-kim-jong-un-orders-production-warhead-tips-as-north-korea/>

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South China Morning Post (Hong Kong, China)

Chinese Firms Dodge Sanctions to Trade with North Korea, Says Security Analyst

By Kate Whitehead

August 24, 2017

Harvard's Dr John Park tells Hong Kong audience intelligence shows sanctions against North Korea have provided opportunities for Chinese companies to deal with Pyongyang, helping the Kim regime develop its missile programme

It was a pressing issue when he planned his trip a couple of months ago. Two days before he arrived, it became even more critical – North Korea tested an intercontinental ballistic missile that experts said would be capable of reaching the west coast of the United States. It has since said it is considering firing missiles into the sea near the US Pacific territory of Guam.

“The sense of euphoria in the Kim [Jong-un] regime is pretty high in the sense that they are on the cusp of making history. Never has a country that is not a great power possessed a nuclear ICBM [intercontinental ballistic missile],” says Park, director of the Korea Working Group at Harvard Kennedy School in the US.

He was speaking at the Foreign Correspondents' Club, in one of a string of public and private speaking engagements during his time in Hong Kong.

Events are moving quickly and Park didn't mince words, saying the threat posed by North Korea to the US is now higher than that of terrorism. But the burning question is: how has North Korea succeeded in making such rapid progress with its nuclear programme?

In April 2012, when North Korea tested a long-range missile, the nation was careful to frame the exercise as a peaceful one, saying it was putting a weather satellite into space. That claim was thrown into doubt after a South Korean navy ship salvaged part of the projectile, which crashed into the sea shortly after take-off.

“They found circuitry and electronics from the US, European countries and Japan. These were banned items; these were sanctioned items. How the heck North Korea got them is very troubling,” Park says.

Research by Park and his colleagues at Harvard Kennedy School may shed light on this, which he believes is a result of what he calls a “sanctions conundrum”. He says the unintended consequence of sanctions has led the North Koreans to become more innovative in their procurement.

“If you view sanctions as antibiotics, then North Korea is exhibiting superbug traits,” he says.

Statistics for North Korea-China trade have been growing dramatically since the late 2000s. Such a sharp increase, Park says, shows that it is not organic trade: it’s driven by political design. It’s worth noting that the figures are based on published Chinese trade statistics and that the real numbers are presumed to be even more dramatic.

Park traces the increased trade back to former Chinese premier Wen Jiabao’s delegation to Pyongyang in October 2009. The high-level meeting focused on three agreements – economic development, tourism and education. The agreements were thought of as little more than propaganda at the time, but in hindsight, he says, it is significant that member states of the United Nations are not prohibited from engaging in economic development and humanitarian activities in North Korea.

“It creates a legal loophole, and under Chinese law the purpose of this visit in many respects is signalling to those in China that it is legal under Chinese law to do business with North Koreans. This is where I think you start to see the dramatic spike in commercial activities,” says Park, who was the 2012/13 Stanton Nuclear Security Junior Faculty Fellow at Massachusetts Institute of Technology’s Security Studies Programme.

Despite the increase in trade with China, an anticipated system-wide economic reform hasn’t come about. But that’s not what we should be focusing on, he says. Rather, we should be examining North Korea’s elite – whom he refers to as the “one per cent” – and their activities in China.

The application of sanctions on North Korea offered a business opportunity for unscrupulous Chinese companies. The elevated risk – of breaking sanctions – didn’t scare them away; instead it was grounds for demanding higher commission fees.

“This phenomena of monetisation of risk creates efficient markets where the buyers and sellers can align more readily. For the North Koreans it is essentially renting the capabilities of these local players,” says Park.

He says that North Korean trading companies have traditionally been used to acquire funds to operate some of the leadership’s projects and programmes, as well as to maintain the loyalty of the elites, and it’s only quite recently that the country has turned to this highly specialised procurement activity.

In the past, North Korean officials might have gone on a business trip to the Middle East or Eastern Europe, procured what was required and taken it back home, but in doing so they gained little business acumen. Now it’s a different story. By living in commercial business hubs for many years, North Korean officials have effectively become businessmen.

When he interviewed members of this elite group who had defected to South Korea, Park says, it was more like a business school case study than a big security project.

“Understanding the partners and the practices gives you a sense of how the overall interactions between North Koreans embedded in China have become a phenomenon that is increasing the capabilities of the regime in a number of areas,” he says.

Park says this strategy of hiding in plain sight is the most effective method the country presently has of acquiring the components it needs for its military programme. Commercial channels that were originally established to move benign goods are adapted to funnel components destined for North Korea’s ballistic missile and nuclear programmes.

He and his colleagues have catalogued examples of North Korea buying dual-use industrial equipment from Germany by using a private Chinese company.

“The Chinese company fills in all the forms, end user and all of that, and the German company truly believes that it has sold something to a Chinese company. In reality, that item will make its way to North Korea,” says Park.

He believes there is still a chance to break up some of these networks by targeting the Chinese players – but no one is doing it.

“In the midst of all the elevated tensions, the Chinese authorities are still very hesitant about going after the North Koreans. These are diplomats, mainly, who are using diplomatic credentials to bed themselves in China for years on end,” says Park, adding that China does not want to trigger hostility in North Korea.

From the US perspective, China is becoming a part of the problem, he says. But he notes that China is in a unique position. It is working on rebuilding the institution of the party – the Communist Party of China, the Workers Party of Korea mechanism – which it sees as a winning formula for long-term stability. It will ensure the stability of the North Korean regime, encourage them to focus on economic development, and hope they will become less interested in nuclear weapons for defence.

A problem here is that China sees some countries as overreacting to North Korea’s nuclear weapons programme.

“There is a sense of disbelief among the senior Chinese leadership – how could the North Koreans achieve a nuclear weapons programme? That sense of disbelief still underpins more of this deference to the idea that North Korea is just doing this for show and to get the US back to the bargaining table and demand a bigger pay-off,” says Park.

The late Kim Jong-il ruled for 17 years and was known for constantly raising the stakes in order to extract more concessions from other countries. Park says a lot of countries believe that Kim Jong-un is following his father’s methods.

“With the cognitive bias that North Korea is a joke, that it’s doing it for its playbook and getting more money, successive [US] presidents have kicked the can down the road. But now we are at this position where there’s that sense of panic as the window gets closer and North Korea gets closer to ICBM tests,” he says.

<http://www.scmp.com/culture/article/2107752/chinese-firms-dodge-sanctions-trade-north-korea-says-security-analyst>

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The Asahi Shimbun (Tokyo, Japan)

South Koreans Practice in Case of N. Korea Attack, But with Little Urgency

Author Not Attributed

August 24, 2017

Traffic was halted, movie screenings interrupted and hundreds of thousands of people across South Korea were directed to underground shelters on Wednesday as part of a civil defense drill to practice in case of an attack by North Korea.

But South Koreans are familiar with such preparations, having seen many over the decades since the height of Cold War tension with a neighbor it is still technically at war with, and many people have become inured to the danger.

This time, the government tried to inject some urgency and get more people taking part amid a surge of tension over North Korea's weapons programs, and an exchange of dire warnings of nuclear war by both it and its sworn enemy, the United States.

"We need to practice because we're still at war with North Korea and people are insensitive to threats," said Hwang Jae-min, a 30-year-old prison guard who happened to be watching a movie at a Seoul cinema complex when a siren heralded the beginning of the drill.

Hwang was one of about 50 moviegoers led underground to take shelter from an imaginary North Korean air raid.

The siren sounded around the country and government officials and police flagged down traffic and tried to shepherd pedestrians to the nearest shelters.

But skeptics doubted such an orchestrated exercise would be much use if and when it came to a real war.

"I do strongly believe we need this drill but it doesn't seem to be working properly," said Choi In-sook, a 45-year-old housewife strolling down a city street when the siren went off.

She did not run for cover.

"It needs to be performed like it's a real war," she said.

The drill was part of an annual joint military exercise conducted by South Korean and U.S. forces that began on Monday and will run until Aug. 31, and which North Korea denounced as a reckless step toward nuclear war.

North Korea routinely denounces military exercises by U.S. and South Korean forces that it regards as thinly disguised preparations to invade it.

South Korea's state run television broadcast scenes from the 20-minute drill live for the first time in two years in the hope of drumming up some enthusiasm.

Jung Han-yol, director of the Ministry of Public Affairs and Safety's civil defense division, conceded that the fact that participation was voluntary meant the drill might lack some credibility.

Cho Won-cheol, emeritus professor of civil and environmental engineering of Yonsei University in Seoul, said there was always a problem with getting people involved in government preparations for a war few people believe will happen.

"The reason why the drill is not working well is the country's civil defense drill has always been practiced mostly by the government or civil officials, not by the civilians," Cho said.

South Korea and its main ally the United States are technically still at war with the North because their 1950-53 conflict ended in a truce, not a peace treaty.

<http://www.asahi.com/ajw/articles/AJ201708240013.html>

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The Diplomat (Tokyo, Japan)

US, South Korea Begin Ulchi-Freedom Guardian 2017 War Games Amid Threats from North Korea

By Ankit Panda

August 21, 2017

The United States and South Korea will simulate a range of military scenarios and operations.

The United States and South Korean Combined Forces Command (CFC) began the 2017 iteration of the annual Ulchi-Freedom Guardian computerized command post military exercises on Monday. The exercises are the first large-scale U.S.-South Korea military drills since North Korea's first-ever tests of an intercontinental-range ballistic missile (ICBM) in July.

Top U.S. military leaders arrived in South Korea early on Monday ahead of the start of the exercises, which do not involve large-scale field maneuvers like the springtime Key Resolve and Foal Eagle exercises, but instead focus on war games.

U.S. Pacific Command head Adm. Harry Harris, Gen. John Hyten, commander of U.S. Strategic Command, and Lt. Gen. Samuel Greaves of the U.S. Missile Defense Agency arrived in Seoul to mark the start of the exercises.

Harris, Hyten, and Greaves will observe the exercises this year amid heightened tensions with North Korea. Earlier in August, Pyongyang had called for the United States and South Korea to reduce the scope of the exercises — a common request from North Korea, which sees large-scale military drills by the allies as a preparation for preemptive war.

Though the specific details of the kinds of scenarios that are simulated during Ulchi-Freedom Guardian are a closely guarded secret, this year, the alliance is likely to run through a full gamut of potential wartime scenarios on the Peninsula, ranging from operational procedures for a combined preemptive offensive against North Korea and defensive operations against a North Korean invasion.

One South Korean defense official told the Chosun Ilbo that this year's exercise would, for the first time, include "a nuclear war game for the first time." No other details were given, but it is not likely that South Korea, under the relatively restrained government liberal President Moon Jae-in, will have assented to simulating offensive nuclear counterforce operations.

Instead, if nuclear war games are a component of this exercise, they may focus on counter-weapons-of-mass-destructions (CWMD) operations and sustaining allied maneuvers in the aftermath of a North Korean nuclear attack against core U.S.-South Korea command-and-control nodes. Another possibility is that the exercises may simulate conventional counterforce operations by the United States and South Korea against North Korean nuclear-capable launchers — a core operation for any preemptive war.

Direct observation of parts of the exercises this year by Hyten and Greaves may also suggest an expanded nuclear warfare component. U.S. Strategic Command, which Hyten oversees, controls so-called "strategic" nuclear assets, including U.S. nuclear bombers, ballistic missile submarines, and land-based ICBMs.

This year's Ulchi-Freedom Guardian drill is also the first to take place since the U.S.-operated Terminal High Altitude Area Defense (THAAD) system in Seongju county became operational. Lt. Gen. Greaves' presence may suggest that THAAD may be an actively simulated asset in this year's operation. THAAD is designed to defend roughly the lower half of South Korea from attacks by short-, medium-, and intermediate-range ballistic missiles.

While the Ulchi-Freedom Guardian exercises are primarily computerized simulations, thousands of troops normally participate. This year's exercise is slightly smaller than last year's, with 17,500 U.S. troops participating, according to U.S. Forces Korea. 14,500 of these troops are permanently based on the Peninsula, with 3,000 being shuttled in from the U.S. mainland.

U.S. Defense Secretary Jim Mattis, speaking on Sunday, noted that the reduced numbers are not an attempt to placate North Korean requests for modifications to the drills.

"The numbers are by design to achieve the exercise objectives and you always pick what you want to emphasize," he told reporters. "Right now there is a heavy emphasis on command post operations, so the integration of all the different efforts."

Meanwhile, on the South Korean side, more than 50,000 troops and nearly half-a-million bureaucrats and other civilians will participate in some way in the exercises.

<http://thediplomat.com/2017/08/us-south-korea-begin-ulchi-freedom-guardian-2017-war-games-amid-threats-from-north-korea/>

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EUROPE/RUSSIA

The Independent Barents Observer (Kirkenes, Norway)

Mysterious Forest Flash was Failed Test of New Nuclear Missile

By Thomas Nilsen

August 21, 2017

Remember the huge circular impact zone in the forest outside Arkhangelsk last August? Well, now it is confirmed to be the first test launch of Russia's new Yars-M intercontinental ballistic missile.

Locals in the village of Ust-Pocha in the Pinega district (Arkhangelsk Oblast) were all shocked by two huge explosions on August 25th last year. The powerful blasts could be heard from several tens of kilometers away and caused strong vibration in their houses.

When walking into the forest, one and a half kilometers from the village, people were met by a scene that could have been from the James Bond movie GoldenEye. Trees were scattered in a circle several hundred meters in diameter.

There was no meteor or metal scrap to be found in crater in the middle. No visible burns. Some Russian media reported it could have been a rocket launch that failed. Plesetsk, the northern cosmodrome, lies only some 170 kilometers, and locals in the villages in the Pinega district are used to see rockets launched from Plesetsk flying into orbit over their houses.

But, strangely enough, no rocket launched were listed that day. Officials from Plesetsk didn't either provided any information afterwards. Until now, nearly a year later.

In July, the third book in the serie «Russia's Northern Cosmodrome» were presented, and there, in the list of launches from Plesetsk, a short line reviled it all; on August 25th, 2016, the very first test-launch of the Yars-M ICBM took place.

The information was soon republished at a Russian discussion blog-site for strategic and tactical nuclear weapons. Pavel Podvig, an independent analysts who runs the research project «Russian

Nuclear Forces» picked up the info and linked it to last year’s infamous forest flash outside Arkhangelsk.

Yars-M is a smaller and lighter version of the Yars intercontinental ballistic missile. Making it smaller, the Russian strategic missile forces can base the new missile into the new so-called Barguzin ICBM-carrying railway missile train, like Deputy Prime Minister DMitry Rogozin announced would be developed by 2018, RIA Novosti reported last month.

According to several British media, like the Daily Mail, a successful test-launch of the Yars-M missile was done from Plesetsk in early November, just over two months after the launch of the missile that crashed in the forest 170 kilometers from the launch-pad in August.

<https://thebarentsobserver.com/en/security/2017/08/giant-forest-flash-was-failed-test-new-nuclear-missile>

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War on the Rocks (Washington, DC)

What to Expect When You’re Expecting Zapad 2017

By Michael Kofman

August 23, 2017

Don’t be surprised if in the coming days you increasingly hear the word Zapad echoing across media outlets and the blogosphere as though it were a category five hurricane, or an apocalyptic event approaching. Zapad, meaning “West” in Russian, is the Russian military’s annual strategic exercise, scheduled to commence on Sept. 14. Such capstone training events have been held on a quadrennial rotation since 1999 between four strategic directions, including Vostok (Eastern), Tsentr (Central), and Kavkaz (Caucasus). As anticipated, Zapad 2017 will take place in the Baltic region, held jointly with Belarus, and led by forces based in Russia’s Western Military District.

The ongoing confrontation between Russia and the United States, together with the exercise’s geographical focus, makes this a particularly significant event. Large-scale Russian exercises have always imparted a sense of foreboding, yet the reaction to Zapad 2017 is especially sensational this year. The Center for European Policy Analysis has even created a dedicated website with a countdown clock as though awaiting doomsday. Ahead of Zapad rolls a strong wave of anxiety among NATO members, senior officials, and the Russia-watcher community. Such exercises call for vigilance and caution, but panic is unwarranted.

Ironically, much as the leaders of NATO members dislike Russia’s deployment of forces along their borders, the exercise should be treated as an opportunity. Zapad 2017 is happening whether NATO likes it or not, and Russia will keep holding this exercise every four years, just as the Soviet Union had a penchant for running major exercises in the fall. In truth, Western observers are bound to learn much from this event about Russia’s ability to deploy combat formations to the region, the current state of Russia’s armed forces, and how Moscow intends to leverage military power to shape Western decision-making in the event of a crisis. The conduct of the exercise may even help validate, or invalidate, some of the current thinking in NATO on how to deter Russia.

Ultimately the exercise is a test of what Russia calls “strategic deterrence,” an integration of military, non-military, and nuclear capabilities to shape adversary decision-making from crisis to actual conflict. Although small countries are naturally anxious when large neighbors flex their muscles, in reality this entire affair is about Moscow establishing coercive credibility with

Washington, and in that respect it is quite effective. Zapad is part of one long conversation on deterrence and compellence facilitated by the Russian General Staff.

Getting beyond the sensationalism that we have been treated to thus far, what can the United States and its allies expect from Russia's Zapad exercise? Why does Russia treat us to this scare-fest every four years? And what are the important lessons to look for through the smokescreen of Russian pronouncements and panicky media coverage?

Zapad is Coming

If Zapad 2017 is anything like the 2013 edition, then it will be a two-phase exercise that takes no more than a week – Sept. 14-20. In reality Zapad is a series of events, incorporating numerous trainings, snap readiness checks, deployments, and parallel exercises taking place across Russia. The march to Zapad begins with exercises in the spring to test some of the units that will be involved in the capstone, and intensifies through the summer, particularly for the formations of the military district intended to lead the event. Associated exercises, including multinational events with other countries like the Army 2017 expo, typically take place within the same timeframe.

Russian engineers and sapper units already began arriving in Belarus on Aug. 15. They will be coordinating with their Belarusian counterparts throughout Aug. 21-25 in preparation for the main event. Judging by drills leading up to this year's iteration, Russia will once again be testing its ability to deploy and operationally command units from different services in a combined arms exercise. This will feature the airborne, spetsnaz reconnaissance detachments, and electronic warfare troops. Some of these units have already held drills in Brest and Vitebsk, Belarus earlier in the year.

The Baltic Fleet headquartered in Baltiysk is practicing intensively for a showpiece role, along with the 11th Army Corps garrisoned in Kaliningrad. They need a good showing given the entire command staff was fired last year due to a history of chronic lapses.

Larger ground unit formations will no doubt include the 6th Army based around St. Petersburg, the 76th Airborne Division nearby in Pskov, along with elements of the 20th and 1st Tank Guards Army. The exercise will likely feature forward deployment of tactical aviation and joint operations by different types of forces, although this year it may be more focused on the logistics involved in moving equipment rather than actual manpower.

Much has been made of the fact that in November of last year the Russian Ministry of Defense placed a tender for 4,162 railway flatcars to transport equipment to Belarus from Jan. 1 to Nov. 30 of this year. The Russian armed forces largely move by train, and it is the most practical way to get mechanized or armored units into the Baltic region from the rather large Western Military District. However, given the number of exercises Russia has already conducted with Belarus in the run up to Zapad requiring rail transport, and an average of 80 to 110 flatcars and wagons required per most battalions, the figures don't add up to anything spectacular in terms of the force actually being moved.

What's Going to Happen on Z-Day?

The combined strategic exercise will likely have two phases, starting with an initial crisis stemming from infiltration by a supposed terrorist or asymmetric threat. Russian forces will typically respond to several armed groupings on Belarusian territory, and perhaps in Kaliningrad as well, although the entire affair is geared toward a conventional operation against a high-end adversary.

Phase two will then involve a combined force to "stabilize" the situation in response to the crisis. This will see Russian units both in theater and across several military districts conducting exercises intended to defend Russia against a conventional threat. The situation in question will prove to be a

provocation from a state adversary (the unnamed culprit of course being NATO) and Russia's forces will swing into gear to mobilize against this unknown foe.

Throughout the exercise, Russian armed forces will try to signal that they have the ability to impose substantial costs on a technologically advanced adversary, i.e. the United States. The scenario will likely transition from deterrence to escalation control, during which the Russian military will simulate long range strikes with naval and air power, perhaps together with non-kinetic capabilities, as part of a "non-nuclear deterrence" package that shows how Moscow can compel an adversary into abandoning the conflict.

Russian thinking is founded on the belief that its military can raise costs for the West such that they will grossly outweigh the potential gains for sustaining hostilities, particularly if the fight is over Belarus. The exercise may also include simulated use of non-strategic nuclear weapons as a more potent means of compelling the notional opponent to terminate hostilities and negotiate.

This year, Russia will be keen to demonstrate its aerospace forces, air defenses, and technical advances in fields like electronic warfare, while at the same time improving the logistics for moving ground unit formations about the region. Since Zapad 2013, a number of new unit formations, armies, and divisions have been setup. Some are slowly being staffed, while others have had units reassigned to them from existing armies. In short, the Russian General Staff is first and foremost interested in testing their own officers' ability to move forces to the theater of operations, deploy for combat, and gain experience commanding a mix of different types of forces in the field. This is no small feat for a recently reformed military that keeps expanding in personnel and materiel.

Zapad Will be Really Big, Or Not

The total number of soldiers involved is difficult to estimate. The official figures submitted by Russia and Belarus are 12,700 total, with 10,200 soldiers expected on Belarusian territory. This number includes 7,200 from Belarus and roughly 3,000 Russian soldiers, along with 680 pieces of equipment. Belarus has invited official observers from neighbors and the Organization for Security Cooperation in Europe, but Russia has not invited observers, or submitted notice under the Vienna Document regarding the countless associated exercises and troop movements on Russian territory.

The Vienna Document is a politically binding agreement adopted in 1990 that specifies a series of confidence building measures for major exercises exceeding certain thresholds, and mandates invitation of Organization for Security Cooperation in Europe observers for those exercises including more than 13,000 troops. By claiming its forces are engaged in many smaller exercises Moscow has consistently circumscribed reporting obligations and transparency measures under the Vienna Document. Still, it's 2017, and you don't exactly need observers there with binoculars to see what Russian units are doing.

Actual counts on how many Russian soldiers participate in these strategic exercises range wildly, and depend almost entirely on what you include as participating, and during what time frame. The generally cited figure for Zapad 2013 is around 75,000 troops and personnel. This exercise may prove larger, but if the focus is on aerospace and naval operations, it may not. Ostensibly the number of actual soldiers concentrated in the Baltic region that week may not be all that large, but a multitude of simultaneous exercises will take place in other regions and districts. Hence the overall count of participants can quickly swell.

Running parallel to Zapad 2017 will be civil defense exercises intended to stress the entire system as though the state is practicing for total war. Since the last Zapad in 2013, the troops of the Ministry of Interior have been converted into a newly stood up National Guard. The National Guard will likely generate its own forces, take in reservists, and prepare to suppress "diversionary" activity. The Military District leadership, together with governors, is supposed to take command of

key civil infrastructure and national resources in a time of war. Russia will also test two reserve systems: territorial battalions intended for civil infrastructure defense and a nascent operational reserve, which is still in development.

Counting the National Guard and other paramilitary forces the total number of participants can readily increase by another 20,000 or more, this is how figures begin to approach the 100,000 frequently cited in the media. However, said participation can range from deploying to a firing range to sitting in barracks doing nothing at all, but still being counted by Western experts as being part of the exercise. Right now, there's nothing to substantiate the notion that Zapad 2017 will involve 100,000 troops 'on NATO's borders' besides the fact that the number is round and sounds large.

The Russian Ministry of Defense itself likely hopes Western media will report exaggerated figures. Such headlines help validate the scale and success of the exercise to national leadership in Moscow. In this respect, the entire affair is an exercise in co-dependency and is self-affirming.

Zapad is Also Leaving

There is nothing to indicate that this exercise is cover for a diabolical Russian invasion. Of course, the Russian leadership has a checkered history here, using a snap exercise to cover troop movements in February 2014 that were used to seize Crimea. In the summer of 2008 Russia's Kavkaz exercise worked out some of the units and deployments it would need to fight Georgia, though when the actual war came things didn't exactly go as planned.

Estonia's undersecretary for defense policy, Kristjan Prikk, known to be quite knowledgeable on Russia said back in July, "We don't consider this year's Zapad exercise in itself to be a direct threat to NATO or a cover for an attack." There is also nothing to suggest that Russia intends to "leave" its forces in Belarus, or anywhere else for that matter. Typically, unit formations need housing, a plan to garrison in quarters, supporting facilities and the like, especially through fall and winter. The notion that Russia would just leave them shivering in tents somewhere in Belarus is unrealistic.

Belarus is not exactly keen to host Russian forces any longer than planned since its autocratic president Alexander Lukashenko guards Belarusian sovereignty (and his own rule) quite jealously. Autocracies are reliable in this regard, they distrust other autocrats and are keen to signs of betrayal. Lukashenko is cautious to balance Russia's security needs with his strong desire not to become the ex-president of Belarus.

Kavkaz 2008 teaches us that if there's any cause to worry, it should be a month or two after the exercise. It's a bit too obvious and uncharacteristic for Russia to try something when NATO is ready, on alert, and bracing for the worst. The West has a notoriously short attention span. If Moscow wants to pick a fight it will be after everyone in NATO has decided that they've successfully deterred Russia and the exercise is long past. This of course is unlikely, but it's important not to look for chicanery during Zapad at the expense of ignoring the real "period of danger," which will probably be afterwards.

Why Does Russia do Zapad? And Why Should We Care?

The Zapad exercise is really a stress test of the system's ability to handle a conflict scenario with NATO. In this contingency, Russia's military and civilian structures are working out their ability to handle internal instability, and integrating various instruments of national power to shape NATO's decision-making throughout a crisis. Strategic deterrence is the Russian framework for using different instruments of national power in deterring or compelling an adversary. In the early phases of crisis the goal is to deter the United States from launching in military hostilities, then to control escalation during the conflict phases by leading it.

Zapad is neither a defensive nor offensive exercise. Zapad is meant to establish Russia's coercive credibility and, judging by Western consternation, it does a great job of it. The program that will unfold in September is meant to convince the United States that Russia will employ both non-nuclear and nuclear means to deter the use of force against its interests, and failing that, to control escalation such that the war is quickly terminated. However, a significant part of this exercise is also about Russia testing its own capabilities and the state's capacity to handle a crisis that turns into an existential threat from without and within.

The good and bad news is that in the minds of Russian leaders this scenario is not all that hypothetical. It's actually their version of the Baltic high-end fight. While the U.S. policy establishment is busily working on improving deterrence against Russia in the Baltics, Moscow is fixated on defending its own geopolitical real estate in Belarus. Russia practices what is a de facto policy of extended defense, placing its notional borders at the edge of Belarus. Hence Russia worries that events similar to the Maidan may repeat themselves in Minsk. The fear behind this scenario had always been that NATO may sponsor some sort of popular uprising and use it as a pretext to intervene, thus ripping Belarus from Russia's sphere of influence.

Don't Fear Zapad. Learn From It

Russia's concerns, and much of Russian planning for a potential conflict with the United States, stem from the Kosovo air campaign conducted by NATO in 1999. Russian leaders witnessed the technological superiority of American military power and the speed with which U.S. forces achieved conventional dominance on the battlefield, conducting strikes against Serbia with impunity. This made a lasting impression and arguably a traumatic one. The Zapad 1999 exercise was Russia's response to NATO's actions in Kosovo, signaling that should the United States ever consider such an intervention on Russian territory, it would face rapid nuclear escalation.

Since Zapad 1999, Russia has been improving on the credibility behind this message: reducing its unhealthy dependency on nuclear weapons, improving the capability of general purpose forces, and adding a diverse mix of non-kinetic means to its toolkit. However, Zapad stays true to its roots. It is always about the same thing: how Russia perceives the U.S. "way of war" and plans to deal with it. The real bilateral exercise in September is not between Russia and Belarus, but between Russia and an imaginary United States. The intended message to Washington is that things will go badly quickly if American policymakers consider conducting an intervention in Belarus in the vein of Kosovo 1999, Iraq 2003, or Libya 2011.

The irony is that Russia and NATO are both exercising to deter each other from seizing countries that neither is appreciably interested in. Nobody in the West has ever said "we really must get Belarus," as though Europe was short on dictatorships and seeking political diversity. No Russian official of significance has voiced a longing for returning the Baltic states to Russian control, or questioned the credibility of NATO's security guarantees. In this regard, Zapad mirrors the discourse inside the United States and NATO on how to handle Baltic security concerns. The Russian General Staff's scenario, where NATO goes to war with Russia over Belarus, is no more contrived than the proposition that Moscow will declare war on NATO over the Baltics. There are other possible iterations of this fight, some of which I covered in an article a year ago, but they're all improbable.

In the end, Zapad is a good window into the Russian mindset. The Russian leadership is not lying. In a conflict between Russia and NATO, things will probably go badly. Moscow may resort to using nuclear weapons. For all the modernization and transformation of Russian armed forces, in reality the Russian leadership is probably still afraid: afraid the United States will try to make a bid for Belarus, afraid of American technological and economic superiority, afraid the U.S. seeks regime

change in Moscow, and afraid Washington desires the complete fragmentation of Russian influence in its near abroad, or even worse, Russia itself.

Zapad is the most coherent manifestation of these fears, and a threat from Moscow to the United States about what it might do if the worst should come to pass. Washington should pay close attention to both, it's an opportunity to learn a great deal about an adversary, and it only comes every four years.

<https://warontherocks.com/2017/08/what-to-expect-when-youre-expecting-zapad-2017/>

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Russia Beyond the Headlines (Moscow, Russia)

Russia Plans to Scale Back Military Spending - But Not Rearmament

By Nikolai Litovkin

August 18 2017

Russian President Vladimir Putin announced that in 2018 the country will decrease its military budget but said the pace of rearmament will remain the same.

The economic crisis and sanctions have taken their toll on Russia. Like in recent years, the country's budget has been slashed and military spending has been cut.

"This autumn we'll have to work out a budget law for next year. It includes military budget cuts, yet it will have no effect on the rearmament of our army and navy," President Vladimir Putin said.

It was the same story in 2016, when the Russian government tightened its belt and rolled back military spending by 160 billion rubles (around \$2,7 billion).

Ruslan Pukhov, CEO at Centre for Strategic Analyses and Technologies, says the move is not at all surprising.

He added that the Russian public should not be worried about decreased army funding or the country's defence capabilities. As it stands, the pace of military rearmament hasn't slowed: Ground, air, and naval forces are still set to receive new hi-tech weapons systems as scheduled.

However, Pukhov says that if the recession continues, the military will suffer 10 to 15 years from now.

What will be cut?

The biggest part of the Defense Ministry's budget (\$48 billion, nearly four percent of the country's GDP) is being spent on new generation military systems. These include fighter jets, bombers, tanks, submarines, and battleships.

Russia's forces will receive more than 22.5 trillion rubles (around \$370 bln) by 2022.

However, some experts believe that the budget will be balanced out by postponing certain planned military developments.

"Some shipments and scientific work will be delayed by the government. For example, right now Russia doesn't need to invest tons of money in the development of the Barguzin rail-based missile system with new era intercontinental ballistic missiles (ICBMs). So this work may be postponed for a couple of years," Izvestia newspaper analyst Dmitry Safonov told RBTH.

He also believes the government will postpone investment in the development of the PAK DA, a new era strategic bomber. As with the Barguzin, there are currently other systems that can do the job at a satisfactory level.

“This is a complicated long-term project. Russia doesn’t plan to wage wars or be involved in conflicts where it will need flying monsters able to drop 30 tons of missiles and bombs on the heads of its enemies. Modern strategic aviation with the Tu-160, Tu-22M3, and Tu-95 perfectly fulfills the country’s duties during operations against Islamic State terrorists,” Safonov added.

What won’t be cut?

Meanwhile, experts agree that work on some nuclear missile programs will never be delayed or under-financed as they are of primary importance.

Russian Minister of Defense Sergei Shougy said earlier this year that the Russian military industry is working 24/7 to create the new Sarmat ICBM.

The rocket - code name RS-28 - weighs 100 tons and has a payload of 10 tons. The first missiles will be delivered to the country’s Strategic Missile Troops after 2020 and will replace the R-24V Voevoda, which is today considered the heaviest and most threatening strategic missile in the world (it weighs 211 tons with a payload of nine tons).

As Safonov believes, the new missile will be a cornerstone of Russia’s nuclear deterrence policy as it will be able to fly 17,000 km and carry 15 multiple reentry vehicles, each with a yield of between 150 and 300 kilotons.

“This will be the key to preventing major conflicts and protecting the nation in the future,” he told RBTH.

https://www.rbth.com/defence/2017/08/18/russia-plans-to-scale-back-military-spending-but-not-rearmament_824682

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Russia Matters (Cambridge, MA)

On Russia's Role in Resolving the North Korea Crisis: Q&A with Gary Samore

Author Not Attributed

August 16 2017

North Korea conducted its first tests of intercontinental ballistic missiles this summer, stirring up worries that it could hit U.S. targets in Guam or Alaska and that its nuclear-weapons program was advancing at a dangerously rapid pace. In response, on Aug. 5, the U.N. Security Council unanimously passed new sanctions against Pyongyang, putting Russia and the U.S. on the same side of a major international security issue despite the current low point in bilateral ties. At the time of this interview, tensions between the U.S. and North Korea were running high, with both sides issuing implicit or explicit threats of war.

For insights on the implications of North Korea’s missile-program advances, U.S. policy on North Korea and Russia’s role in the stand-off, Russia Matters spoke to Gary Samore, executive director for research at Harvard's Belfer Center for Science and International Affairs and former presidential advisor on arms control and nonproliferation. Dr. Samore has worked on issues of nuclear security, strategy, terrorism and proliferation, in and out of government, for some three decades. In 1995, he

received the Secretary of Defense Medal for Meritorious Civilian Service for his role in negotiating the 1994 North Korea nuclear agreement.

RM: Let's start by "zooming out": There's been plenty of debate in the pundit class about responses to North Korea's latest tests related to nuclear weapons. What are the main reasonable lines of thought in the U.S. policymaking establishment about what should be done? How close is this establishment to consensus?

GS: I think there is general agreement that eliminating North Korea's nuclear weapons is not a realistic goal for the time being, perhaps as long as the Kim dynasty rules in Pyongyang. Military options to destroy North Korea's nuclear weapons and missile force are impractical and run a high risk of sparking a broader conflict, which would be very costly and dangerous to the U.S. and its Asian allies. Regime change is not possible without Chinese cooperation and Beijing is deeply reluctant to apply economic pressures that could destabilize North Korea. Hence, diplomacy (backed by sanctions) is the only option to limit and delay North Korea's nuclear and missile programs in the near term, even though it will not result in denuclearization. Because prospects for diplomacy are so uncertain, there is general agreement in Washington on the need to enhance military cooperation with South Korea and Japan to strengthen deterrence and defense, including missile defense.

RM: Is Russia critical to this effort? Does it, for example, have sufficient leverage vis-à-vis North Korea to convince it to abandon or freeze its nuclear or missile program?

GS: Compared to the U.S. and China, Russia is a relatively secondary player because it has little leverage with North Korea since the collapse of the Soviet Union and the end of large-scale aid and military assistance to Pyongyang. Nonetheless, Russian cooperation is necessary to make the diplomatic option effective. In particular, Moscow can play the spoiler and reduce pressure on North Korea to negotiate if it blocks U.N. Security Council sanctions resolutions or expands trade with North Korea to replace trade between North Korea and China.

RM: This month's unanimous U.N. Security Council vote to impose new sanctions on North Korea was hailed as an example of consensus among the disparate, powerful actors on the Council, with China, Russia and the West able to agree on something. What do you think it took to achieve that unanimity behind the scenes? Do you think Russia's vote came easily or did it require arm twisting?

GS: As with previous resolutions on North Korea, agreement on UNSCR 2371 was fundamentally a negotiation between Washington and Beijing. Previously, China was only willing to support broad economic sanctions against North Korea in response to nuclear tests, most recently UNSCR 2270 and 2321 in 2016. In the case of UNSCR 2371, China for the first time was willing to support broad economic sanction against North Korea in response to ICBM-range missile tests. In essence, Beijing is warning Kim Jung Un not to conduct further ICBM tests or else face additional economic sanctions. At the same time, Beijing is trying to limit the extent of sanctions to reduce the risk of destabilizing North Korea or provoking Kim Jung Un to take some rash action. For the most part, Russia has supported China's approach to increase but limit sanctions, including sanctions that directly affect Russian economic interests. For example, the sanction on North Korean guest workers was limited to a cap at current levels rather than a complete ban, which directly affects Russia because it has the largest number of North Korea guest workers after China. My impression is that Russia's vote came easily once the U.S. and China agreed on the resolution.

RM: At least one respected analyst has pointed out that Russia has four main national interests in North Korea: nuclear security, military security (including no beefed-up U.S. military presence on the peninsula), prestige (as an indispensable player in the international community) and economy (growth in trade with the DPRK and trilateral projects involving both Koreas). At least two of

those—military security, as Russia sees it, and economy—seem potentially out of sync with America’s goals and interests in Korea. Moreover, despite its support for sanctions, Moscow may be skeptical of their efficacy. In this context, what possible “collision points” do you see in the paths the U.S. and Russia are taking (or want to take) to reduce the nuclear risks emanating from North Korea?

GS: I think Russia and the U.S. are basically on the same page in favoring a diplomatic solution to the North Korean nuclear threat, even though there may be some tactical differences. Compared to the U.S., Russia places less emphasis on coercive pressure like sanctions and tends to emphasize the importance of incentives, such as security assurances to North Korea, including limits on U.S. military presence and exercises in the region. Russia, for example, has joined China in supporting a “freeze-for-freeze” deal (suspension of nuclear and missile tests in exchange for suspension of U.S.-South Korean military exercises) and in opposing the deployment of the THAAD missile defense system in South Korea. In the end, however, Russia will support any deal that emerges from U.S.-North Korea negotiations.

RM: How would you guess U.S. officials working on the Korea issue are viewing Russia right now: as an important partner? A major obstacle? A nuisance? Or some combination? You mentioned before that Moscow could play the spoiler and relieve some of the pressure on North Korea.

GS: My impression is that U.S. officials working on North Korea see Russia as a relatively minor player, certainly compared to China. In theory, Russia could block or subvert U.S. efforts to increase economic pressure on North Korea, but in practice Russia is not likely to go against a Chinese decision to support increased sanctions. Of course, Moscow would like to get credit in Washington for helping to address the North Korean problem (including eventual easing of Ukraine sanctions), but officials in Washington don’t seem to feel we “owe” Russia any favors for its actions on North Korea.

RM: Could Sino-Russian alignment on Korea advance some sort of closer strategic alliance between the two? Are there worries about this in Washington?

GS: Sino-Russian alignment on Korea is part of the broader strategic alliance between Beijing and Moscow. On Korea, Russia is the junior partner, just as China was the junior partner on Iran. However, there are limits to the partnership on Korea. Pyongyang has always tried to turn to Moscow when its relations with Beijing are strained. And China is very sensitive to any effort by Russia to reassert its influence in East Asia. For China, North Korea is primarily viewed through the lens of its broader relationship with the U.S., especially because President Trump has made clear to President Xi that the U.S. will soften economic demands on China if China helps to pressure North Korea and that the U.S. will be tougher on economic demands if China doesn’t help on North Korea.

RM: Russia has been calling for a new security architecture in Northeast Asia. Is this a realistic prospect?

GS: No. The fundamental security differences and underlying conflicts among countries in Northeast Asia (such as China and Japan, Korea and Japan and North and South Korea) make a serious regional security architecture impossible.

RM: This month we’ve heard troubling news that the engine used in one of North Korea’s latest test launches may have been smuggled from Ukraine’s Yuzhmash plant. What concerns does that raise for you about the bigger nuclear-security picture? Are international regimes such as the Missile Technology Control Regime adequate for stopping the smuggling of ICBM components and know-how? If not, then what should and realistically could be done?

GS: There’s no doubt that North Korea’s missile program is based on Soviet-era missile technology, including engine technology that North Korea obtained from Russian and Ukrainian scientists over

the years. However, I am not convinced that Ukraine's Yuzhmash plant provided actual engine motors to North Korea in recent years. I hope these reports will be thoroughly investigated by the Ukrainian government. In any event, the effectiveness of international regimes like the MTCR depends on the willingness and ability of individual governments to establish and enforce effective export-control systems. Ukraine's export-control system (like most of its governmental functions) is weak compared to other European countries.

RM: Some analysts believe that Kim Jong Un has been most successful in implementing Nixon's madman theory. Do you agree?

GS: Not really. For all his noisy threats and bluster, Kim Jong Un has been very careful to avoid actions that could cause a conflict with the U.S. Unlike his father Kim Jung Il, Kim Jung Un has been much more aggressive in advancing North Korea's nuclear and missile programs and much more willing to risk angering China. But this approach has also come at a price because it has forced China to support more economic sanctions than it would have otherwise, if Kim Jung Un had been more patient and cautious. Whether this strategy works in the end is too early to say.

<https://www.russiamatters.org/analysis/russias-role-resolving-north-korea-crisis-qa-gary-samore>

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MIDDLE EAST

The Times of Israel (Jerusalem, Israel)

North Korea Chemical Weapons Said Intercepted En Route to Syria

By Tamar Pileggi

August 22, 2017

Confidential UN sanctions report says the blocked shipments are part of a Damascus-Pyongyang arms deal

Two shipments of North Korean chemical weapons bound for Syria have reportedly been intercepted by United Nations member states in the past six months.

The shipments bound for the Syrian government agency responsible for the country's chemical weapons program were detailed in a confidential UN report on North Korean sanctions violations submitted to the Security Council earlier this month, Reuters reported Monday.

"The panel is investigating reported prohibited chemical, ballistic missile and conventional arms cooperation between Syria and the DPRK (North Korea)," a panel of independent UN experts wrote in their 37-page report.

"Two member states interdicted shipments destined for Syria," the experts said, adding that another member state had since informed the panel they believed the weapons were part of an arms contract between Damascus and North Korea's primary arms dealer, which has been subject to international sanctions since 2009.

"The consignees were Syrian entities designated by the European Union and the United States as front companies for Syria's Scientific Studies and Research Center (SSRC), a Syrian entity identified by the Panel as cooperating with KOMID in previous prohibited item transfers," the experts wrote in their report to the Security Council.

Western analysts and intelligence services believe the SSRC is responsible for Syria's research and development of nuclear, biological and chemical weapons, including its missile technology.

Neither Pyongyang or Damascus responded to a request for comment by Reuters.

Tuesday marks the four-year anniversary of the Ghouta chemical attack on opposition-held neighborhoods in Damascus that killed hundreds of people. The West and the UN roundly blamed Syrian President Bashar Assad for attack, which prompted an agreement brokered by the US and Russia to disarm Syria's chemical stockpile.

However, chemical attacks have continued to target civilians and rebel fighters, according to opposition groups and others.

In April, a suspected chemical attack in the rebel-held Idlib province left over 90 people dead, including many children, with the West accusing Assad of being responsible.

That attack prompted the US to impose "sweeping" new sanctions on Syrian officials, and President Donald Trump ordered 59 Tomahawk cruise missiles fired at the airbase where the attack was launched.

The new sanctions ordered by the Treasury included freezing all assets in the US belonging to 271 employees of the SSRC, and blocked any American person or business from dealing with them.

Washington said at the time the SSRC was responsible for the producing the chemical weapons used in the April 4 attack.

The report on ties between Syria and North Korea comes as tensions between Pyongyang and the West have soared in recent months over North Korea's weapons ambitions, which have seen it subjected to a seventh round of Security Council sanctions.

Earlier this month, Pyongyang threatened to send a salvo of missiles toward the US territory of Guam — although it appears to have backed off for now.

Trump has promised "fire and fury" and said that Washington's weapons were "locked and loaded."

The intense rhetoric on both sides has raised fears of a miscalculation leading to catastrophic consequences — North Korea has vast artillery forces deployed within range of Seoul, where millions of people live.

<http://www.timesofisrael.com/north-korea-chemical-weapons-said-intercepted-en-route-to-syria/>

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Jerusalem Post (Jerusalem, Israel)

How Serious Are Iranian Nuclear Threats?

By Yonah Jeremy Bob

August 24, 2017

The country has said it would be able to start enriching uranium within five days of a dissolution of the landmark nuclear deal.

There are at least two key points to make about Iran's threat on Tuesday that it could highly enrich uranium within five days if it chooses to pull out of the nuclear deal with the West.

The first is that this has nothing to do with Iran developing a nuclear bomb in a matter of days. Estimates of its ability to breakout to develop a nuclear weapon if it walked away from the deal range from between six and 12 months.

The second, as put forth by INSS Iran expert Emily Landau and others, is that Iran's threat is a sign of continued noncooperation as the debate about how the US and Israel should view the deal continues.

First, debunking Iran's threat.

Read carefully: Iran was not threatening to enrich uranium to the 90% range, which is needed to achieve weaponization.

Rather, it was threatening to enrich uranium from the 3-5% range to the 20% range that it had before the deal.

Twenty percent means that Iran has less to do to get the uranium to 90%, but it is still far from being weaponized.

Also, Iran has depleted its once large stock of already enriched uranium.

While Obama administration figures said the deal would hold off Iran from breaking out for at least 12 months, the Institute for Science and International Security and others have said Iran could breakout in as few as six months. Six months is still not five days.

Why is Iran trying to sound like it can get to a nuclear weapon faster than it can? Landau notes that Iran wants the deal to continue, "because otherwise it would lose economic benefits so it is in their short and medium term interest to keep it..., and it is not a bad deal for them as they can move to get nuclear weapons" when its terms expire "while getting stronger regionally."

In other words, Iran does not want to lose the deal's pluses and wants to pressure the West to stick to the deal as is, without tougher enforcement that it is worried about from the Trump administration.

Why are Iran's threats significant? Landau explains that many of those who are afraid of pressing Iran to change its disruptive regional behavior lest it walk away from the deal, continue to focus on Iran as being technically mostly compliant with the agreement.

In contrast, she said Iran's threats show that it is not cooperative and gives support to those who say Iran may have secret breakout plans lined up and concealed nuclear activities.

The international community might need to ask Iran how it would enrich uranium to 20% in only five days, which might suggest that Iran could break out faster than the "fast" six-month estimate.

"How does the threat square with Iran's commitments under the nuclear deal?" asked Landau, contending that more violations might be discovered if inspectors look into Iran's threat.

Further, it signals that Iran's mentality is not that of a state which has moved on from seeking nuclear weapons.

Obviously, much of Iran's latest threat is also part of its back and forth with the Trump administration, which is making plenty of its own threats. But Landau points out that Iran made plenty of threats against the more friendly Obama administration as well.

Ironically then, Iran's threat to leave the deal both exposes its true desire to milk the deal for the benefits it offers economically without permanent limits on its nuclear abilities, and signals that Iran has not given up on its nuclear ambitions long-term.

<http://www.jpost.com/Middle-East/Iran-News/How-serious-are-Iranian-nuclear-threats-503276>

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TASS (Moscow, Russia)

US Statements on Chemical Weapons in Syria May Pursue Goal of Stepping Up Interference

Author Not Attributed

August 23, 2017

"Various sources indicate that the inhumane action affected up to 1,400 persons," the Russian Foreign Ministry said

Moscow doesn't rule out Washington plotted its latest accusations of Damascus with using chemical weapons for the purpose of a possible interference in Syria's domestic affairs, the Russian Foreign Ministry said on Tuesday.

It recalled that the nerve gas Sarin was used in Eastern Guta, a suburb of Damascus on August 21, 2013.

"Various sources indicate that the inhumane action affected up to 1,400 persons," the commentary said. "A special UN mission led by Dr. Ake Sellstrom from Sweden did not track down the culprits of the crime. In essence, it confirmed the Russian experts' conclusions on the provocative character of the use of improvised Sarin by extremist groupings against peaceful population."

"Russia finds the hypocrisy of the White house, the Department of State and the U.S. mission to the UN to be disdainful," the ministry said. "After a whole four years, they have been accused in unison the Bashar al-Assad government of a terrorist act in Eastern Guta."

"The ungrounded charges with the use of chemical weapons on April in Khan Sheykhun, which the U.S. has apportioned to Damascus virtually on behalf of the entire world community are also causing concern," the commentary said.

Thus the Syrian government is profiled as a party guilty of concealing some amounts of the nation's arsenal of chemical weapons, which would mean a direct encroachment on the Convention for the Prohibition of Chemical Weapons. More than that, Washington accuses it of using chemical weapons against peaceful civilians.

"This causes absolute unacceptance, as the most competent international agency, the Organization for the Prohibition of Chemical Weapons (OPCW) has confirmed Syria fully destroyed its arsenal of chemical weapons under international control," the commentary said.

Also, the joint mechanism formed by the organization and the UN to investigate the incident has not passed its verdict yet on who is the guilty party in it, the ministry indicated.

"Washington is again trying to use the events in Khan Sheykhun to justify its strike on the territory of Syria, a sovereign nation, on April 7," the ministry said. It indicated that the strike had been delivered in bypass of the UN Security Council and in violation of the provisions of international and humanitarian law.

"We don't rule out the very regrettable official comments (from Washington) are composed to offer grounds for a possible future intensification of interference in Syria's domestic affairs," the commentary said.

<http://tass.com/politics/961472>

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PRESS TV (Tehran, Iran)

Iran Criticizes IAEA For Holding Talks with US Envoy About JCPOA

Author Not Attributed

August 23, 2017

US Ambassador to the United Nations Nikki Haley has held talks with the head of the International Atomic Energy Agency (IAEA) over Iran's nuclear deal, a move Tehran says is aimed at manipulating the agency against the agreement.

During the talks in Vienna on Wednesday, Haley and IAEA chief Yukiya Amano "discussed US concerns about ensuring Iran strictly adheres to its obligations."

She also "praised the IAEA's technical expertise and its credibility, professionalism and seriousness in conducting its monitoring and verification work in Iran," adding that "IAEA reports (about Iran's adherence to the accord) can only be as good as the access Iran grants to any facility the IAEA suspects of having a nuclear role," read parts of a communique released by Haley's office after the meeting.

A few hours after the meeting, Iranian Foreign Minister Mohammad Javad Zarif criticized Haley's trip and described it as an attempt to press and manipulate the IAEA.

Zarif noted that the move is aimed at destroying the nuclear deal by raising doubts about the agreement's stability and sustainability, stating that Haley's trip violates the deal's mandate for confidentiality.

The IAEA did not make any comments after Wednesday's meeting.

Arms Control Association analyst Kelsey Davenport told AFP, "The Trump administration needs a wake-up call on the costs of sabotaging the nuclear deal with Iran." "Hopefully visiting the IAEA will allay concerns about monitoring the agreement and demonstrate to Haley that the deal put Iran's nuclear program under a microscope and keeping it there is the best way to guard against any illicit nuclear activity," she said.

The IAEA monitors the technical aspects of the deal — officially titled the Joint Comprehensive Plan of Action (JCPOA) — and regularly reports Iranian compliance. It has consistently confirmed Iran's compliance with its end of the bargain in several reports so far.

The nuclear deal, which was reached between Iran and world powers in 2015, put limits on Iran's nuclear activities in exchange for, among other things, the removal of all nuclear-related bans against the Islamic Republic.

The administration of US President Donald Trump has been skeptical of the deal, however, and while it has twice certified Iranian commitment in notifications to the US Congress, it has reportedly been seeking ways to potentially avoid future certification. The agreement is being reviewed by the US State Department every 90 days to declare whether Tehran was abiding by it.

The US has also said that it is conducting a review of the deal to see whether continued sanctions relief — a US commitment under the agreement — is in the US's national interest. This is while the IAEA has time and again reported that Iran has been abiding by the terms of the nuclear deal.

<http://www.presstv.com/Detail/2017/08/23/532718/Haley-US-concerns-UN-nuclear-IAEA-Iran>

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INDIA/PAKISTAN

The Washington Post (Washington, DC)

The Potential Conflict Between Nuclear Powers That Trump Barely Acknowledges

By Adam Taylor

August 18, 2017

The two most populous countries in the world are dangerously close to armed conflict. Both are fast-growing and ambitious nations with something to prove — and they have nuclear weapons. Yet you'll find surprisingly little discussion of the issue in Washington, where President Trump's ongoing controversies and the threat of terrorist attacks (more on the horrific attack in Barcelona later in the newsletter) continue to dominate the discussion.

The military standoff between India and China over a remote plateau in the Himalayas has been going on for months now. This week, The Post's Annie Gowen and Simon Denyer took a look at the complicated dispute, which was sparked by China's move to build a road in territory claimed by Bhutan, a close ally of India that does not have formal diplomatic relations with Beijing.

Territorial disputes between in the area are far from new — India and China briefly went to war over contest territory in 1962. And much of the present dispute dates back to an 1890 border agreement made between British India and China's Qing Dynasty, one of a number of lingering problems caused by colonial cartographers.

But experts say the current standoff is the worst in decades and has taken on a different tone than previous flare-ups. "It would be very complacent to rule out escalation," Shashank Joshi, an analyst with the Royal United Services Institute in London, told The Post. "It's the most serious crisis in India-China relations for 30 years."

Both India and China are speaking openly and seriously of armed conflict, with Beijing's state media striking a intransigent and at times uncharacteristically vulgar tone. An English-language video posted by the Xinhua news agency Wednesday accused India of "trampling international law" and "inventing various excuses to whitewash its illegal moves" — before showing a Chinese actor in a Sikh turban who spoke in an insulting Indian accent.

If India and China were to go to war, it would be no small matter. Over 2.6 billion people live in the two nations. Between them, they are estimated to have 380 nuclear weapons (though both China and India subscribe to a "no first use" policy, which should — hopefully — mean they wouldn't be used in such any conflict).

In a briefing last month, the U.S. State Department urged restraint. During a press briefing last week, spokeswoman Heather Nauert said, "It's a situation that we have certainly followed closely. And as you know, we have relationships with both governments. We continue to encourage both parties to sit down and have conversations about that."

The dispute centers not only on the territory in question — an obscure, 34-square-mile area known as the Dolam Plateau that is claimed by both Bhutan and China — but a narrow strip of strategically important Indian land called the Siliguri Corridor. This tract, unaffectionately nicknamed the "chicken's neck," connects the bulk of the India with its remote east. Delhi has long feared Chinese troops could cut across the corridor if war broke out, effectively cutting the country in half. It's not

an unreasonable fear, given that the region is just 14 miles wide at its thinnest point; Ankit Panda of the Diplomat once dubbed it a “terrifyingly vulnerable artery in India’s geography.”

It is widely assumed that Washington would side with India in the dispute. Trump is a frequent critic of China, and some in his administration have pushed for tough responses to other territorial claims made by Beijing, such as the ongoing disputes in the South China Sea. Trump called Indian Prime Minister Narendra Modi on India’s Independence Day this week, which some media outlets interpreted as a gesture of support for New Delhi.

And yet, there is a nagging sense among some in India that Trump won’t have Modi’s back if push comes to shove. “If ever there was a war with China, America would never come to our rescue,” one government official told Indian journalist Barkha Dutt recently, according to a story Dutt wrote for The Post’s Global Opinion section.

Washington also may be diplomatically limited in the region: A number of key State Department positions that would have responsibility for handling an India-China crisis remain unfilled. Another part of the problem is simply the complexity of the issue, which could prove hard to communicate to a leader with seemingly limited knowledge of the world and a notoriously short attention span.

There is also an argument that perhaps Trump should keep his nose out of this. The Post’s Jackson Diehl wrote he didn’t find much enthusiasm for U.S. involvement in the dispute while in Delhi last week. The U.S. president has gained a reputation there for being hotheaded and impulsive — even the drawdown in tensions with North Korea seems to have happened in spite of his involvement, not because of it.

Diehl noted that Modi had sought a closer relationship with the United States in the hope that Trump would be tough on China and terrorism while forging closer ties to Russia, an old Indian ally. Instead, as Diehl writes, the Indians have received “contradictions and chaos,” with some wondering if the White House currently is even capable of handling complicated geopolitical situations.

To be fair, Trump is not alone in being more interested in the standoff with North Korea or terrorist attacks like the one that took place Thursday in Barcelona. He’s also in the midst of his own domestic crises.

However, Bruce Riedel of the Brookings Institution noted recently that the 1962 Indo-Chinese war was resolved with the help of President John F. Kennedy, who used military support for India and clever diplomacy to limit the scope of the conflict. Remarkably, this all happened at the same time as the Cuban missile crisis, the “most dangerous moment in human history.” Given that, what is Trump’s excuse?

<https://www.washingtonpost.com/news/worldviews/wp/2017/08/18/the-potential-conflict-between-nuclear-powers-that-trump-barely-acknowledges/>

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Modern Diplomacy (Brussels, Belgium)

The Enduring Hypocrisy of Nuclear No First Use

By Ashan Zahid and Hasan Ehtisham

August 22, 2017

In realist paradigm of International relations, one shall not solely trust the words of another state when it is a matter of a threat to national security. States can abrogate even a mutual pact when it is

conflicting with their national interests. For instance, in December 1940, several sources warned Stalin about the imminent threat of a Nazi invasion, but he remained oblivious and assumed that Hitler would abide by the Molotov-Ribbentrop pact.

Keeping this in mind, how one can believe that a state having nuclear weapons will keep its words not to use these weapons in the time of crises? India's pledge of No First Use (NFU) must be seen in the same limelight.

Since the inception of nuclear thinking in South Asia, Pakistan always questions the credibility about Indian nuclear doctrine and in recent years, there is a debate emerging within India to rethink the policy of NFU. BJP let the cat out of the bag by questioning NFU in its 2014 election manifesto and suggested the need to revise the nuclear doctrine because "the strategic gains acquired by India during the Atal Bihari Vajpayee regime on the nuclear programme have been frittered away by the Congress." Then after 2 years of silence on the subjected former defence minister Manohar Parrikar stirred up a hullabaloo and challenged the pledge of NFU. Parrikar said, "Why a lot of people say that India has No First Use policy. Why should I bind myself to a...? I should say I am a responsible nuclear power and I will not use it irresponsibly."

Most Recently, Vipin Narang a nuclear strategist from the Massachusetts Institute of Technology said that India would preempt Pakistan's first use doctrine and the preemptive first strike will aim for counterforce targets. He strengthens his argument by referring a book of Shivshankar Menon, who was National Security Adviser to Prime Minister Manmohan Singh. Whereas, Menon in an interview with Ajai Shukla said "India's nuclear doctrine has far greater flexibility than it gets credit for".

The revelations of Menon and Narang do not come as a surprise to Pakistan academic circles. Dr Mansoor Ahmed, postdoctoral Research fellow at Belfer Center of Harvard Kennedy School, already in June 2016 pointed out the transformation in New Delhi nuclear doctrinal thinking. He linked specific pattern of India's force modernization with India willingness to preempt Pakistan's tactical first use by counterforce strategy. Mansoor deliberated the developing tendencies in India strategic thinking and branded Pakistani tactical nuclear weapons TNWs as a force multiplier for India to rethink its dubious NFU and comprise flexible response options in its nuclear strategy.

Dubious History of Indian Bomb

India always has had a perplexing association with nuclear weapons. Since 1947, the leaders of India especially Jawaharlal Nehru, was reluctant to pursue nuclear weapons and supported the cause of nuclear disarmament. Despite this stringent stance, on 18 May 1974, India conducted its first nuclear explosion with the code name "Smiling Buddha". After this test, India marched towards an openly declared and operational nuclear capability and finally, on 14 May 1998 India tested five nuclear devices under code name "Operation Shakti".

In a Statement to the parliament regarding Operation Shakti on May 27, 1998, former Prime Minister Atal Behari Vajpayee categorized India as a responsible nuclear weapon power with the objective to use these weapons against aggressions from any country. He subjected these weapons for self-defense and displayed intend to not get involved in any arms race. Later, in December 1998, PM again addressed the parliament to elaborate some significant facets of country's nuclear policy and formally announced a policy of No first use and non-use against non-nuclear weapon state. He added that India is not going to enter into any arms race with any country. India nuclear policy will be a minimum credible deterrent, which will safeguard India's security, the security of one-sixth of humanity, now and into the future."

Foreign Minister of Vajpayee government Jaswant Singh in an interview clarified the concept of a minimum credible deterrent. He said that the word minimum in defining credible deterrence is not

constant in terms of physical calculation. This type of policy approach will always be dictated by determining security environment, in the context of emerging threats. Therefore, minimum demand will be reassessed and altered according to needs of the security establishment. The only principle to determine the policy regarding nuclear weapons is “national interests.”

In 1999, the National Security Advisory Board (NSAB) was the group responsible for creating the Indian nuclear policy generated a doctrine. This group was comprised of non-governmental experts. The government of India then declared the recommendations given by experts as an unofficial doctrine. The advisory board recommended credible minimum nuclear deterrence and adhered a policy of NFU. The drafted report had legitimated a reserved right of using nuclear weapons against those non-nuclear weapons state allied to adversaries containing nukes. Meanwhile, the report depicts that, “India will not resort to the use or threat of use of nuclear weapons against States which do not possess nuclear weapons, or are not aligned with nuclear weapon powers.” The angle of using nukes against non-nuclear states was a close copy of concept related to negative security assurances of U.S. presented in the 1980s.

In December 2002, the NSAB was praising a comprehensive desertion of NFU by New Delhi. However, in January 2003 the Cabinet Committee on Security (CCS) had reviewed India’s nuclear doctrine with respect to operational arrangements. The CCS recommended credible minimum deterrent and allowed NFU posture. Whereas, the committee explicitly stated that India would not use nuclear weapons against non-nuclear weapon states unless a major biological or chemical weapons attack took place against Indian forces anywhere will invoke a retaliating with nuclear weapons.

A critical analysis of 2003 CCS recommendations reveals numbers of important shifts in India’s nuclear policy. First, there was a major swing from strict minimum posture to a more flexible approach of credible nuclear deterrence. Including the word “credible” in deterrence posture means that India in future will review its nuclear arsenal size accordingly to the strategic environment and postures of India’s nuclear neighbours. Second, India claims of following a strict unconditional NFU policy fell apart when NSAB allowed First Use of nuclear weapons against any non-nuclear weapon country who are not aligned with a country possessing nuclear weapons. Third, alteration in India’s nuclear policy was the clear stance to use nuclear weapons first in response to biological or chemical weapons attack.

First Use versus No First Use

A nuclear doctrine defines a specific framework for a country that entails a set of contingency plans for the use of nuclear weapons in harmony with the changed strategic environment, both internationally and regionally. In the broader context, a nuclear doctrine could be separated into two main categories “the first use” and “NFU” of the nuclear arsenal, in order to guarantee the existence and augmentation of credible deterrence. Although NFU comprises a persuaded instinctive moral appeal, Pakistan is unconvinced to this type of nuclear policy thinking. All other nuclear nations, with the exception of India and China, has a policy of first use of nuclear weapons as a reaction to any crisis or any misadventure against their sovereignty.

The major difference of nuclear doctrines between India and Pakistan can be quantified by answering one question; how these rivals will use nuclear weapons whenever a crisis emerge? Pakistan corresponded with the policy of using nuclear weapons first. Whereas India responded this question with NFU pledge.

Utilizing nuclear arsenals to compensate with conventional asymmetry is not something new and it has been obvious with policies of many nuclear weapons states. Using nuclear weapons first to balance conventional asymmetry was a long-standing nuclear policy of NATO amid the Cold War.

When USSR disintegrated and with inferior conventional forces, Russia emerged on the world map; Moscow expressly renounced the NFU promise guaranteed by the USSR. Whereas, France holds a strategy of calculated ambiguity with respect to the first use of nuclear weapons. The more accurate instance of using nuclear weapons to offset the misbalance in conventional strength is Pakistan and it took the path similar to NATO, Russia and France.

Islamabad seems to view its strategic weapons as a balance to India's huge conventional gains. Whereas, even Israel may fall into the classification of using nuclear weapons to counter conventional superiority of rival states. Despite the fact that Israel still not in a position to categories as an inferior state compared to its neighbours in the military sense, but it is encompassed by threatening states who are much bigger and possibly more intense, particularly in the event of alliance formation against Tel Aviv.

Hypothetically, the first use of nuclear weapons will probably prompt an uncontrolled escalation of events to the extent that rivals could decimate each other. Notwithstanding the will to employ nuclear weapons 'first' can be used as a deterrent against conventional and nuclear aggressions from a hostile state. It is very difficult to develop a proportional conventional symmetry to compete with a rival, who has larger resources to feed its conventional forces; in this sense, the will of early utilization of nuclear weapons is a compensation to inferior conventional forces.

The threat of using nuclear weapons cannot be simply eradicated by a declared policy of NFU. However, the uncertainty and trust deficit related to NFU would perhaps have some deleterious impact on deterrence. While NFU has an assured innate fascination for strategists, it is a flawed idea. First, nuclear deterrence can only be established when there is a considerable threat of nuclear escalation during any crisis. Second, NFU is a dangerous deception and there is no assurance that even a country that has given such a pledge will not use nuclear weapons in a crisis. For instance, the Soviet Union in June 1982, had taken a unilateral pledge for not relying on the first use of nuclear weapons. Nevertheless, the Warsaw pacts records related to military accords fell into German hands clearly demonstrate that Russians were at the onset of their operation plans in using nuclear and chemical weapons against Germany. Similarly, Barkha Dutt in her book revealed that despite NFU, India had been threatening Pakistan with the use of nuclear weapons during Kargil conflict.

Even many who considered the first use of nuclear weapons as unwise and unnecessary by any state still oppose the NFU's commitment to the grounds that it would reduce enemy's uncertainties. For example, Seth Corpse, argues against the dependence of nuclear weapons or the use of it, however, asserts that U.S. should not rule out the use of nuclear weapons altogether. Uncertainty about U.S. nuclear retaliation still forces an adversary to ruminate seriously and this argument has some merit.

Deterrence is psychological approach and envisioning threat of First Use as a nuclear warfighting doctrine is an effort to oversimplify the situation. Whereas, the signaling to use nuclear weapons first will certainly demotivate a rival to initiate a conventional attack. Critical analysis of historical conflicts manifested that nuclear weapons have no practical utility and these weapons thwarted many conventional wars and nuclear attacks.[xxvi] In this context former Air Force Chief of Staff, General Larry Welch adeptly summed up that "I would argue that we have used the nuclear forces every second of every day for 50 years."

Conclusion

There is a constant debate persists within India to depart from the strict nuclear NFU policy and to adopt a doctrine that comprises the obvious threat of first use, especially to address the asymmetry with China and for countering Pakistani TNWs. There was a pressure building up on Indian

government since 2002 to reject the assurance of NFU. The board, headed by C V Ranganathan, recommended in 2002 “India must consider withdrawing from this commitment as the other nuclear weapons’ states have not accepted this policy.” If India reconsiders its nuclear posture then this will not be the first time that a state altered its nuclear doctrine. For instance, two nuclear states Russia (in the 1990s) and India (in 2003), have already changed their NFU doctrinal proposal as compared to their initial policy position regarding nuclear weapons.

The idea to exploit nuclear weapons as a deterrent against conventional attack is the more honest one than the hypocrisy of NFU pledge. The NFU is merely a pretext to portray an image of responsible nuclear state since no state actually wants to start a nuclear war. No matter how one will elaborate this concept, under a “no-first-use” commitment, the deterrence will be effective when a state will admit that the use of nuclear weapons is indispensable be it a second strike.

In near future, this is highly possible that India vacates its pledge of NFU against Pakistan and China. In spite of India’s pledge of NFU, Indian domestic politics and changing strategic dynamics are contemplating an alarming change in the strategic thinking of India to shift its approach towards NFU. Whereas, Pakistan’s nuclear weapons policy, in spite of any claim tossed by its authorities, will remain intricately associated with India’s strategic thinking. Therefore, any alteration in India military or nuclear posture will directly effect on Pakistan security doctrine.

http://moderndiplomacy.eu/index.php?option=com_k2&view=item&id=2876:the-enduring-hypocrisy-of-nuclear-no-first-use

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Outlook India (New Delhi)

Why Brahmos Sale to Vietnam is No Violation of Missile Technology Control Regime Commitments

By Rajeswari Rajagopalan

August 22, 2017

Brahmos is a ramjet supersonic cruise missile, developed by Russia’s NPO Mashinostroeyenia and India’s DRDO.

India expressed interest in selling Brahmos anti-ship cruise missiles to Vietnam in 2011 and six years later, it is possible that New Delhi has finally done it. A few days ago, a Vietnamese news report suggested that Vietnam had taken possession of Brahmos missiles from India. The Vietnam foreign ministry spokesperson Le Thi Thu Hang, when asked on the purchase, said it was “in line with Vietnam’s peaceful national defense policies aimed at protecting the country”. However, a day later the Indian Ministry of External Affairs spokesperson Raveesh Kumar said “it is not correct” and that the Vietnam’s Foreign Ministry had rejected the report. It is somewhat strange that Vietnam makes claims of taking possession of the missiles and on the other hand, the Indian Ministry of External Affairs denies them.

Brahmos is a ramjet supersonic cruise missile, developed by Russia’s NPO Mashinostroeyenia and India’s Defense Research and Development Organization (DRDO). With a flight range of up to 290 km, and at supersonic speed all through the flight (and thus shorter flight time), it is considered as the world’s fastest anti-ship cruise missile. Brahmos carries a conventional warhead of 200-300 kg and can be launched from multiple platforms including submarines, ships, aircraft and land.

India and Russia are now considering joint development of the next generation of Brahmos missiles with a longer range of around 600 km in addition to improving the accuracy of the missile. The

existing stock of missiles will also be upgraded. An upgraded missile with the extended range was successfully tested in March 2017. Former President and scientific adviser to Defense Minister Dr. APJ Abdul Kalam argued in 2011 for developing “a hypersonic version of BrahMos which can be reused...meaning that the missile should be able to deliver its payload and return to base.”

While the discrepancy in the public statements of Indian and Vietnamese officials needs to be addressed, a more important misperception has to be dispelled. There are some questions if India’s sale of Brahmos missiles to Vietnam will be violation of MTCR commitments. The answer would appear to be no.

The Missile Technology Control Regime (MTCR), an informal group of like-minded countries, seeks to control the proliferation of missiles and missile technology, specifically those that are relevant as delivery vehicles for weapons of Mass Destruction (WMD). While addressing the concern that the MTCR may be used to constrain national space technology development or international cooperation in space activities, the MTCR Guidelines categorically states that the regime will not impede programs as long as such programs do not contribute to delivery systems for weapons of mass destruction.

MTCR Chairs have reiterated this point as well on multiple occasions. The MTCR Chair’s statement at the induction of India into the MTCR in 2016 is a good example, stating that Indian membership “will strengthen the international efforts to prevent proliferation of delivery systems (ballistic missiles or unmanned aircraft) capable of delivering weapons of mass destruction.”

Ambassador Piet de Klerk, the MTCR Chair, while speaking at the 23rd Asian Export Control Seminar, Tokyo, in 2016, stated that “The MTCR aims to prevent proliferation of unmanned delivery systems (missiles or unmanned aircraft) capable of delivering weapons of mass destruction, by seeking to coordinate national export licensing efforts.” Similarly, speaking at the 22nd Asian Export Control Seminar in Tokyo a year earlier, Ambassador Roald Næss, then MTCR Chair, said, “it has been the mission of the MTCR from its origin in 1987 to coordinate national export licensing efforts aimed at ‘preventing proliferation of unmanned delivery systems capable of delivering nuclear weapons.’ In 1992, the scope of the Regime was extended to include delivery means for all WMD.” Explaining the expansion of the scope of the MTCR in 1992, Amb. Klerk said, “Initially the MTCR looked only at missiles as delivery vehicles for nuclear weapons. This is also where threshold of a 500 kg payload over a range of 300 km stems from . . . In 1992 it was decided to enlarge the scope to not only missiles but all unmanned delivery vehicles, for all weapons of mass destruction, including chemical and biological weapons.” He added that the MTCR was one of the four export control regimes with the Australia Group and the Nuclear Suppliers Group focusing on controlling the flow of WMD itself and the MTCR is meant specifically for “non-proliferation of their means of delivery.” Ambassador Klerk makes it abundantly clear that the MTCR is not concerned about unmanned delivery vehicles in general, “but such vehicles in relation to weapons of mass destruction.” Thus it is clear that the MTCR only prohibits transfer of delivery vehicles if they could contribute to WMD proliferation.

India’s potential sale of Brahmos missiles to Vietnam is thus not in violation of any MTCR rules or any commitments that India made when it became an MTCR member in June 2016. For one, Vietnam is not a country of concern from a WMD perspective. Vietnam does not have and is not thought to have had at any time any WMD programs. Therefore, there is no reason why the transfer of Brahmos to Vietnam would violate the MTCR rules. Secondly, the fact that Vietnam is not an MTCR member is also irrelevant. The MTCR Guidelines make no distinction between exports to member states and to non-member states. In addition, MTCR does not make a decision as a group on any sale/ transfers – it is up to the individual member states to make decisions whether a particular transfer or sale will contribute to WMD proliferation cause. Preventing WMD

proliferation is the key guidepost for any of these transactions. The only activity that is strictly prohibited by the MTCR Guidelines “is the export of production facilities for Category I MTCR Annex items.” There may be political and strategic (or other) reasons to object to India supplying Brahmos, but it is difficult to see any legal obligations to the MTCR being a problem.

<https://www.outlookindia.com/website/story/why-brahmos-sale-to-vietnam-is-no-violation-of-missile-technology-control-regime/300671>

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COMMENTARY

Bloomberg (New York, NY)

Better Nukes Mean a Safer World

By The Editors

August 17, 2017

A \$1 trillion nuclear modernization project is underway. Here's how the U.S. can spend that money wisely.

As usual, Donald Trump was overstating things when he bragged on Twitter that he has made the U.S. nuclear arsenal “far stronger and more powerful than ever before.” The U.S. does have the world’s largest collection of its most dangerous weapons, but the work of modernizing it predates and will outlast his presidency.

The Pentagon is in the early stages of a planned \$1 trillion overhaul of the so-called nuclear triad -- air-, land- and sea-based weapons -- that began under President Barack Obama. It’s necessary from both a military standpoint, as much of the arsenal is so old as to be beyond repair, and a strategic one: Without a credible U.S. nuclear deterrent, the global arms race could well intensify.

It’s not only that many aspects of the U.S. nuclear-weapons program are outdated. It’s that threats are on the rise: Russia is renovating its Soviet-era arsenal and has deployed a ground-launched nuclear-capable cruise missile the U.S. rightly says is in violation of a treaty. China is building nuclear-armed submarines (it already has nuclear-tipped intercontinental ballistic missiles). And North Korea has the world on edge with its missile tests.

There should be no debate about whether America’s nuclear-weapons systems need to be kept up to date. The issue will be whether Congress can push the Pentagon to be as efficient as possible. As with all defense outlays, members of Congress will undoubtedly weigh the effect of local jobs against the interests of national security.

So what is the best way to spend this trillion-dollar windfall, which will be parceled out over the next several decades? There is justified consensus that the Navy’s planned fleet of up to 12 next-generation Columbia-class submarines, armed with improved Trident missiles, be the centerpiece of the modernization effort. The sea leg of the nuclear triad is the stealthiest and most flexible, and the accuracy of its missiles is now on a par with ICMBs.

The Air Force is moving ahead with a new long-range strike bomber, the B-21 Raider, which it says will be able to fly in contested airspace, where its aging B-1, B-2 and B-52 aircraft are increasingly vulnerable. The Air Force also wants a new nuclear-capable cruise missile that can be launched from the air outside a combat zone, which will only destabilize the nuclear balance. Many feel the

same way about an improved version of the B-61 atomic bomb, which has a “dial-a-yield” feature that can make it far less powerful than the weapon dropped on Hiroshima 72 years ago this month.

There is an argument that this modernization program would make the world a more dangerous place. In terms of quality and quantity, the U.S. is already the world’s nuclear superpower, and its efforts to upgrade could create some tension among other nuclear states. At the same time, a strong U.S. arsenal could aid nonproliferation efforts. Without the promise of nuclear protection, U.S. allies such as Japan and Saudi Arabia might be tempted to join the nuclear club.

At the very least, one benefit of strengthening nuclear deterrence is to gain leverage in nonproliferation negotiations. The New START Treaty, which vastly lowered caps on long-range nuclear missiles, is due for an extension in 2021. And there is the matter of Russia and North Korea’s nuclear adventurism. Diplomacy may seem an unlikely solution to these problems at the moment, but it will be far more so if the U.S. is not negotiating from a position of strength.

Trump’s unpredictability may make diplomatic progress less likely and nuclear conflict less unthinkable. Fortunately, U.S. nuclear policy is far more deliberate than his Twitter feed.

<https://www.bloomberg.com/view/articles/2017-08-17/better-nukes-mean-a-safer-world>

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The Delaware Gazette (Dover, DE)

John Yoo: The new weapons we need

By John Yoo

August 22, 2017

With threats, bribes, diplomacy and sanctions, American presidents of both parties have sought for 25 years to try to halt, or at least slow, North Korea’s quest for a nuclear arsenal — to no avail.

Though the brinkmanship of the last few weeks has subsided, President Donald Trump still faces the prospect of a madman — Kim Jong Un — in control of a nuclear arsenal. What the U.S. and its allies must now do is find options between conventional war, or even nuclear holocaust, on the one hand, and appeasement on the other. The answer could be robotic, cyber and space weapons — if we have the will to deploy them.

Three types of technology hold promise for facing down North Korea and similar threats.

First, drones and robots. They already have been used for pinpoint strikes on terrorist leaders and insurgent forces in the Mideast. More advanced drones could potentially locate and destroy Pyongyang’s nuclear arsenals, research centers and missile sites. Robotic naval vessels could blockade North Korea, and manned and unmanned forces could form a layered anti-missile shield.

The United States should also unleash cyber capabilities it has steadily built over the last decade. Computer viruses alone can’t prevent North Korea from launching nuclear missiles, but they could degrade the Kim regime’s ability to conduct research and development, test and control weapons and gather intelligence. Cyberwarfare could also complement economic sanctions by freezing North Korean offshore bank accounts, paralyzing communications and disrupting Chinese companies that continue to trade with Pyongyang.

Third, with launch costs falling (thank you SpaceX), and the capabilities of precision-guided munitions improving, the United States could rush the development of a space-based anti-missile system. Though still on the drawing board, space weapons will someday be able to target

intercontinental ballistic missiles during their initial boost phase, when the large plume of their engines makes them easiest to detect and their slow upward ascent makes them most vulnerable.

Using advanced technology should appeal to a commander in chief who rails against the “waste” of American blood and treasure expended abroad and at the same time deplores “the very sad depletion of our military.” “Fire and fury” and “America first” mesh poorly, unless technology is employed to resolve the paradox.

The potential is clear. In the Kosovo air war, the U.S. Air Force dropped graphite bombs to disable the Serbian electrical grid; in the Iraq invasion, allied air power crippled Saddam Hussein’s military and civilian transportation network. New technologies can create those pressures — and more — with far greater effect, less permanent damage and less risk to troops. They can be deployed quickly and precisely in a crisis, and they provide strategic deterrence as well.

The main obstacle to deploying such weapons will be hearts and minds in the West. There are already calls to ban new weapons because they are destabilizing. United Nations officials, for example, attacked President Obama’s drone campaign because it made war too easy to wage. Elon Musk, founder of SpaceX, recently called artificial intelligence “the greatest risk we face as a civilization” and predicted that it could trigger wars. These critics fear a new technology arms race that will encourage the promiscuous use of these weapons.

Every advance in warfare has met with such arguments. The Catholic Church and European aristocrats tried to ban the crossbow. During World War I, it was argued that long-range artillery, aerial bombing and submarine attacks violated the laws of war by removing the face-to-face element of combat. This summer, 122 nations joined a treaty banning nuclear weapons, and the International Court of Justice has come close to declaring them a violation of international law.

And yet there is every reason not to limit our ability to bring dangerous nations to heel, not least because new technologies give the U.S. and its allies an opportunity to preempt looming threats or respond quickly with proportional force in a crisis.

The U.N. charter and modern warfare conventions frown on preemption; nations can use force only for self-defense or when authorized by the Security Council. But violations have been tolerated: President Reagan bombed Libya in retaliation for a terror attack on U.S. soldiers, Israel destroyed Iraqi and Syrian nuclear reactors, and President Clinton launched cruise missiles against Iraq for barring inspections of nuclear sites. Neither the Bush nor Obama administrations consulted the U.N. before launching the Stuxnet virus to disrupt Iran’s uranium processing facilities.

Developing and deploying more sophisticated robotic, cyber and space weaponry may amplify an arms race, but the key word is “amplify.” Our adversaries are already off and running — witness the Russian, Chinese and North Korean hacking of U.S. government and commercial systems. Our rivals are unlikely to obey a treaty limiting such weapons, except as a ruse. (They see cyber weapons, for example, as a counterbalance to our superiority in conventional and strategic weapons.) Treaty inspectors are unlikely to detect secret cyber or robotics programs, as we have learned from trying to monitor nuclear R&D programs.

High-tech weaponry challenges long-cherished arms control norms, but it is already too late to prevent our rivals from developing and using these technologies. Should sanctions, threats and diplomacy fail, the U.S. may need to strike first, but with the caution and precision afforded by new technology.

<http://www.delgazette.com/opinion/60219/john-yoo-the-new-weapons-we-need>

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The Washington Examiner (Washington, DC)

Nuke North Korea Now: It's the Only Option

By Kevin James

August 21, 2017

The U.S. can prevent a North Korean nuclear attack either by deterring one, or by eliminating the North Koreans' ability to launch one through military means. The foreign policy establishment's view is that because deterrence worked on the Russians it will also work on the North Koreans, making deterrence the obvious choice.

Yet given how deterrence with the Russians actually worked, it is doubtful that deterrence of North Korea is possible. It follows that military action will be required to avert or at least minimize the consequences of an inevitable nuclear war, and better sooner than later.

Even assuming that Kim Jong Un is fully rational, and that the logic of mutually assured destruction can prevent him from launching a nuclear attack on purpose, successful deterrence requires far more than that.

The U.S. and Russian experience shows that technical malfunctions, human error, and military misunderstandings will inevitably generate false alarms that an enemy attack is underway. The U.S. and Russia have avoided nuclear war (so far) only because each has developed a process that lets them vet apparent threats and identify false alarms before launching (what each would think is) a retaliatory strike. The false alarms and nuclear close calls have been many.

What's more, the vetting of these alarms requires time and military officers with an independence and a professional ethos that enables them to refuse to act upon an alarm that they believe is false no matter what official doctrine requires.

For example, in 1983, the officer in charge at the Soviet early warning center (Stanislav Petrov) received a satellite alarm indicating that the U.S. had launched a first strike. The satellite appeared to be working correctly. In this case, it was Petrov's duty to pass the warning on to his superiors, who were in turn obligated by Soviet doctrine to launch a nuclear counter-strike. Instead, Petrov independently decided that the alarm just had to be false. Absent either the time to think the situation through or a military ethos by which Petrov could exercise his independent judgement, it is highly likely that this incident would have led to the Soviets launching a first strike on the U.S.

To put this another way, deterrence "worked" against the rational Russians only because we were also enormously lucky.

So, can North Korea be deterred?

North Korea is a very small country on the ocean adjacent to the U.S. Navy and U.S. allies. These brute geographic facts mean that the North Korean officers in the nuclear command chain will need to respond almost instantly to any alarm they receive. The Kim regime perceives its biggest threat to be internal subversion, and so the very last thing that this regime will do is to train military officers to act independently upon their own judgement. In short, North Korea is structurally incapable of evolving a functional alarm vetting process.

North Korea's inability to reliably vet alarms, and a policy of confrontation that will surely produce false alarms in abundance, implies that a North Korean nuclear first strike on the U.S. is statistically inevitable — no matter how lucky we are.

A war with North Korea is coming either way.

And so the U.S. has two broad policy options to deal with this reality: It can respond after a North Korean nuclear strike triggered by a false alarm, or it can launch a pre-emptive strike that eradicates the Kim regime and degrades North Korea's ability to inflict harm upon the U.S. and its allies to the greatest extent possible.

Given North Korean defensive measures, this effort will almost certainly require the use of tactical nuclear weapons. As horrible as a war with North Korea will be, the war will undoubtedly be far less horrible if it begins with a U.S. pre-emptive strike rather than with a North Korean first strike. It is as simple as that.

The devastation that a North Korean first strike would potentially inflict becomes greater every day. And the extent to which a U.S. pre-emptive strike can degrade the North Koreans' ability to inflict harm becomes smaller each day. It follows that the best option the U.S. has to deal with the North Korean threat is to nuke North Korea now.

<http://www.washingtonexaminer.com/nuke-north-korea-now-its-the-only-option/article/2632108>

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Foreign Policy (Washington, DC)

Some Nuclear Ground Rules for Kim Jong Un

By Kevin James

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Washington and Pyongyang need to set new boundaries, even if they keep the deal under the table.

The time for denial is over. North Korea has — or will very shortly have — the capability to launch a nuclear weapon against the United States. In the coming decades, historians can assign blame. For now, it is the task of policymakers to ensure that historians will still be around in the future to dissect this failure.

While denuclearization should remain the international community's formal goal, it is no longer a practical policy. A freeze on missile and nuclear testing, which I advocated only seven months ago, has lost value as North Korea's capabilities have rapidly advanced. Analysts can happily theorize about a disarming preventative strike, but the risks — to both the United States and its allies — are so serious that no sane politician would authorize one. Instead, Washington should try to establish some basic rules of the road with a newly nuclear Pyongyang.

The first priority must be to create a plausible off ramp to the current standoff. Contrary to media reporting, North Korea has not backed off its threat to “bracket” Guam with missiles, and could enact its plan during U.S.-South Korea military exercises that begin next week. Before then, North Korea could agree not to conduct missile tests that overfly South Korea or Japan, in return for the United States ending strategic bomber training flights within an agreed distance of North Korean airspace.

The restriction on North Korea would preclude it from firing ballistic missiles anywhere near Guam. Given that Kim Jong Un would want to demonstrate to military and party elites, rather than the population at large, that he had won a concession in return, face-saving might not even require the agreement to be made public. Indeed, an unacknowledged agreement (officially shared only with the Japanese, South Korean, Chinese, and Russian governments) might be more palatable to all concerned.

More generally, an agreement over missile testing and bomber flights would exemplify how mutually agreed rules could reduce the likelihood of U.S.-North Korea crises in the future. Without an agreement regulating military activities, Pyongyang could interpret U.S. bomber training flights near its borders, especially at a time of heightened tensions, as the opening salvo of a sneak attack to destroy its nuclear forces or “decapitate” its leadership (especially given the inconsistent U.S. position on whether or not it seeks regime change). Meanwhile, North Korean missile tests over Japan or South Korea would be extremely provocative, regardless of the target, and create pressure within the “hub-and-spoke” alliance for a forceful response. Foreclosing these escalation pathways is in the interests of Washington, its allies, and Pyongyang.

Another immediate initiative should be a hotline between Washington and Pyongyang. Another immediate initiative should be a hotline between Washington and Pyongyang. Given how difficult it is to foresee exactly how and why future crises could arise, risk-reduction measures that are useful in a wide range of circumstances would be particularly valuable. A reliable communication channel would fit this bill.

In a narrow sense, the benefits of risk reduction would far outweigh any costs, which are likely to be modest. For example, keeping bomber training flights away from North Korea’s borders would not prevent the United States from conducting joint exercises with its allies, let alone from living up to its commitments to defend them. Moreover, the benefits extend beyond the obvious one of reducing the chance of nuclear war.

In particular, while allies fear that the United States might abandon them during a crisis, they also worry about the possibility of its dragging them into an unnecessary war of Washington’s own making. Especially at a time when the United States has given allies good reasons to question the prudence of its leadership, sensible risk reduction steps could help Washington go some way to reestablishing itself as a steady and trusted hand at the tiller of regional security.

In a broader sense, however, making concessions — albeit reciprocal ones — in the face of North Korean threats carries the obvious risk of encouraging more threats. Yet, amid a dangerous standoff that could plausibly escalate to a nuclear war, this concern should not stop the United States from proposing an agreement that would be a net plus for the security of itself and its allies. Indeed, if a similar fear had deterred President John F. Kennedy, in October 1962, from offering to remove U.S. missiles from Turkey in return for the removal of Soviet missiles from Cuba, the only saving grace for his legacy would have been the lack of any future historians to criticize him.

North Korea’s acquisition of a nuclear-armed intercontinental ballistic missiles is genuinely scary, and adjusting to it will be difficult for the United States and its allies. But the faster we make that adjustment, the safer we will be. Ultimately, the lives of millions of Americans — and Japanese and South Koreans and innocent North Koreans — depend on recognizing that, like elections, nuclear proliferation has consequences.

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ABOUT THE USAF CUWS

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

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

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

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