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Feature Item: ***"Assessment of DOD's Reports on Status of Efforts and Options for Improving Homeland Missile Defense."*** A U.S. Government Accountability Office (GAO) report; GAO-16-254R; Published February 17, 2017; Publicly Released February 17, 23016; 15 pages.

http://www.gao.gov/products/GAO-16-254R

http://www.gao.gov/assets/680/675263.pdf

The Department of Defense's (DOD) August 2015 and September 2015 homeland missile defense reports generally met most of the required reporting elements from section 238 of the National Defense Authorization Act for Fiscal Year 2014 (FY14 NDAA) and section 1665 of the National Defense Authorization Act for Fiscal Year 2015 (FY15 NDAA), such as including descriptions of:

the current and future ballistic missile threat assessment;

current homeland ballistic missile defense capabilities; and

planned improvements to current homeland ballistic missile defense.

However, DOD's reports generally did not meet the requirements to include an evaluation of options for improving homeland missile defense and were not submitted by the required deadlines. Rather than including in its reports the required evaluation of options, DOD referred the congressional defense committees to a separate, ongoing study being performed by the department to assess future homeland missile defense options and committed to providing them with results when the study is completed.

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The National Interest – Washington, D.C.

Revealed: Flying America's Mighty B-2 Stealth Bomber

By Kris Osborn

April 26, 2016

Air Force pilots of the 1980s-era stealthy B-2 Spirit bomber plan to upgrade and fly the aircraft on attack missions against enemy air defenses well into the 2050s, service officials said.

"It is a dream to fly. It is so smooth," Maj. Kent Mickelson, director of operations for 394th combat training squadron, told Scout Warrior in an interview.

In a special interview designed to offer a rare look into the technologies and elements of the B-2, Mickelson explained that the platform has held up and remained very effective – given that it was designed and built during the 80s.

Alongside his current role, Mickelson is also a B-2 pilot with experience flying missions and planning stealth bomber attacks, such as the bombing missions over Libya in 2011.

"It is a testament to the engineering team that here we are in 2016 and the B-2 is still able to do its job just as well today as it did in the 80s. While we look forward to modernization, nobody should come away with the thought that the B-2 isn't ready to deal with the threats that are out there today," he said. "It is really an awesome bombing platform and it is just a marvel of technology."

The B-2 is engineered with avionics, radar and communications technologies designed to identify and destroy enemy targets from high altitudes above hostile territory.

"It is a digital airplane. We are presented with what is commonly referred to as glass cockpit," Mickelson said.

The glass cockpit includes various digital displays, including one showing Synthetic Aperture Radar (SAR) information which paints a rendering or picture of the ground below.

"SAR provides the pilots with a realistic display of the ground that they are able to use for targeting," Mickelson said.

The B-2 has a two-man crew with only two ejection seats. Also, the crew is trained to deal with the rigors of a 40-hour mission.

"The B-2 represents a huge leap in technology from our legacy platforms such as the B-52 and the B-1 bomber. This involved taking the best of what is available and giving it to the aircrew," Mickelson said.

The Air Force currently operates 20 B-2 bombers, with the majority of them based at Whiteman AFB in Missouri. The B-2 can reach altitudes of 50,000 feet and carry 40,000 pounds of payload, including both conventional and nuclear weapons.

The aircraft, which entered service in the 1980s, has flown missions over Iraq, Libya and Afghanistan. In fact, given its ability to fly as many as 6,000 nautical miles without need to refuel, the B-2 flew from Missouri all the way to an island off the coast of India called Diego Garcia – before launching bombing missions over Afghanistan.

"Taking off from Whiteman and landing at Diego Garcia was one of the longest combat sorties the B-2 has ever taken. The bomber was very successful in Afghanistan and very successful in the early parts of the wars in Iraq and Libya," Michelson added.

The B-2 crew uses what's called a "long-duration kit," which includes items such as a cot for sleeping and other essentials deemed necessary for a long flight, Mickelson explained.

B-2 Mission

As a stealth bomber engineered during the height of the Cold War, the B-2 was designed to elude Soviet air defenses and strike enemy targets – without an enemy ever knowing the aircraft was even there. This stealthy technological ability is referred to by industry experts as being able to evade air defenses using both high-frequency "engagement" radar, which can target planes, and lower frequency "surveillance" radar which can let enemies know an aircraft is in the vicinity.

The B-2 is described as a platform which can operate undetected over enemy territory and, in effect, "knock down the door" by destroying enemy radar and air defenses so that other aircraft can fly through a radar "corridor" and attack.

However, enemy air defenses are increasingly becoming technologically advanced and more sophisticated; some emerging systems are even able to detect some stealth aircraft using systems which are better networked, using faster computer processors and able to better detect aircraft at longer distances on a greater number of frequencies.

The Air Force plans to operate the B-2 alongside its new, now-in-development bomber called the Long Range Strike – Bomber, or LRS-B. well into the 2050s.

B-2 Modernization Upgrades – Taking the Stealth Bomber Into the 2050s

As a result, the B-2 fleet is undergoing a series of modernization upgrades in order to ensure the aircraft can remain at its ultimate effective capability for the next several decades, Mickelson said.

One of the key upgrades is called the Defensive Management System, a technology which helps inform the B-2 crew about the location of enemy air defenses. Therefore, if there are emerging air defenses equipped with the technology sufficient to detect the B-2, the aircraft will have occasion to maneuver in such a way as to stay outside of their range.

The Defensive Management System is slated to be operational by the mid-2020s, Mickelson added.

"The whole key is to give us better situational awareness so we are able to make sound decisions in the cockpit about where we need to put the aircraft," he added.

The B-2 is also moving to an extremely high frequency satellite in order to better facilitate communications with command and control. For instance, the communications upgrade could make it possible for the aircraft crew to receive bombing instructions from the President in the unlikely event of a nuclear detonation.

"This program will help with nuclear and conventional communications. It will provide a very big increase in the bandwidth available for the B-2, which means an increased speed of data flow. We are excited about this upgrade," Mickelson explained.

The stealth aircraft uses a commonly deployed data link called LINK-16 and both UHF and VHF data links, as well. Michelson explained that the B-2 is capable of communicating with ground control stations, command and control headquarters and is also able to receive information from other manned and unmanned assets such as drones.

Information from nearby drones, however, would at the moment most likely need to first transmit through a ground control station. That being said, emerging technology may soon allow platforms like the B-2 to receive real-time video feeds from nearby drones in the air.

The B-2 is also being engineered with a new flight management control processor designed to expand and modernize the on-board computers and enable the addition of new software.

This involves the re-hosting of the flight management control processors, the brains of the airplane, onto much more capable integrated processing units. This results in the laying-in of some new fiber optic cable as opposed to the mix bus cable being used right now – because the B-2's computers from the 80s are getting maxed out and overloaded with data, Air Force officials told Scout Warrior.

The new processor increases the performance of the avionics and on-board computer systems by about 1,000-times, he added. The overall flight management control processor effort, slated to field by 2015 and 2016, is expected to cost $542 million.

B-2 Weapons Upgrades

The comprehensive B-2 upgrades also include efforts to outfit the attack aircraft with next generation digital nuclear weapons such as the B-61 Mod 12 with a tail kit and Long Range Stand-Off weapon or, LRSO, an air-launched, guided nuclear cruise missile, service officials said.

The B-61 Mod 12 is an ongoing modernization program which seeks to integrate the B-61 Mods 3, 4, 7 and 10 into a single variant with a guided tail kit. The B-61 Mod 12 is being engineered to rely on an inertial measurement unit for navigation.

In addition to the LRSO, B83 and B-61 Mod 12, the B-2 will also carry the B-61 Mod 11, a nuclear weapon designed with penetration capabilities, Air Force officials said.

The LRSO will replace the Air Launched Cruise Missile, or ALCM, which right now is only carried by the B-52 bomber, officials said.

Alongside its nuclear arsenal, the B-2 will carry a wide range of conventional weapons to include precision-guided 2,000-pound Joint Direct Attack Munitions, or JDAMs, 5,000-pound JDAMs, Joint Standoff Weapons, Joint Air-to-Surface Standoff Missiles and GBU 28 5,000-pound bunker buster weapons, among others.

The platform is also preparing to integrate a long-range conventional air-to-ground standoff weapon called the JASSM-ER, for Joint Air-to-Surface Standoff Missile, Extended Range.

The B-2 can also carry a 30,000-pound conventional bomb known as the Massive Ordnance Penetrator, Mickelson added.

"This is a GBU-28 (bunker-buster weapon) on steroids. It will go in and take out deeply buried targets," he said.

Kris Osborn became the Managing Editor of Scout Warrior in August of 2015. His role with Scout.com includes managing content on the Scout Warrior site and generating independently sourced original material.

Scout Warrior is aimed at providing engaging, substantial military-specific content covering a range of key areas such as weapons, emerging or next-generation technologies and issues of relevance to the military. Just prior to coming to Scout Warrior, Osborn served as an Associate Editor at the Military.com. This story originally appeared in Scout Warrior.

http://nationalinterest.org/blog/the-buzz/revealed-flying-americas-mighty-b-2-stealth-bomber-15935?page=show

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People's Daily Online – Beijing, China

China and Russia Urge US to Drop THAAD Proposal

(CRI Online)

April 29, 2016

Russia is joining with China in opposing any US plans to establish a missile system in South Korea.

Russia's opposition to any deployment of the THAAD system is being voiced following a meeting between Chinese Foreign Minister Wang Yi and Russian Foreign Minister Sergey Lavrov.

"Countries shouldn't be using Pyongyang's acts as pretext to increase their military presence on the Korean Peninsula. We believe the possible deployment of the THAAD anti-missile system won't resolve this problem. We hope the six-party talks can be resumed as early as possible, as we have built-up experience in resolving the nuclear issue through negotiations in the past."

Meeting with Lavrov on the sidelines of the now-concluded Conference on Interaction and Confidence Building Measures in Beijing, Wang Yi says the THAAD system represents a potential threat.

"Both sides are gravely concerned about the possible deployment of the THAAD, or Terminal High-Altitude Area Defence system in South Korea by the US, because it goes beyond the actual defence demands of relevant countries. The deployment of the system will directly harm the strategic interests of China and Russia."

The US and South Korean governments have been discussing the potential deployment of the anti-missile system around Seoul and locations in-range of North Korean short-range missiles.

However, the THAAD system has the potential to fire missiles which could hit targets in China and Russia's far-east.

http://en.people.cn/n3/2016/0429/c90000-9051735.html

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Sputnik International – Russian Information Agency

Russia-China Computerized Missile Defense Drills to Be Held in May
Russia and China will hold their first joint computerized missile defense drills.
29 April 2016

MOSCOW (Sputnik) — Russia and China are set to hold their first ever joint computer-aided command-staff missile defense exercises in May 2016, the press service of the Russian Defense Ministry said Friday.

"The main objective of the exercise is to develop cooperation between the missile defense groups being set up by Russia and China to their territories from accidental and provocative ballistic and cruise missile strikes," the press service said in a statement.

It was noted in the statement that the planned drills are not directed against any third party.

Russia and China have stepped up their defense cooperation in recent months. The countries have already held joint training exercises this year, while top defense officials met for talks on international and regional security, as well as bilateral military-technical cooperation.

According to Russian Deputy Defense Minister Anatoly Antonov, Moscow and Beijing have a united stance on regional peace and international security.

http://sputniknews.com/military/20160429/1038829146/drills-russia-china-computers.html

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Sputnik International – Russian Information Agency

Russia's 'Revolutionary' Hypersonic Weapons Second to None

23 April 2016

The development of hypersonic weapons in Russia is something that makes US defense officials feel extremely uneasy, according to the American news website Washington Free Beacon.
US defense officials are alarmed that Russia has continued to develop hypersonic weapons while the US has lagged behind, the American news website Washington Free Beacon reported.

The remarks came after a source said that the Russian Strategic Missile Forces had carried out a successful intercontinental ballistic missile (ICBM) launch involving a hypersonic glide vehicle.

The test launch was performed earlier this week using an RS-18A (NATO codename: SS-19 Stiletto) strategic ballistic missile from a missile deployment area in the Orenburg Region in the country's east.

"Russia conducted a flight test of a revolutionary hypersonic glide vehicle that will deliver nuclear or conventional warheads through advanced missile defenses," the Washington Free Beacon quoted US military officials as saying.

Recalling that this was the second such test in Russia, the Washington Free Beacon quoted Pentagon spokeswoman Lt. Col. Michelle Baldanza as saying that "the Department of Defense has nothing to offer on this."

Apart from Russia, China and the United States are also developing hypersonic missiles, including gliders and "jet-powered vehicles that travel at extreme speeds."

While China successfully conducted six tests of its DF-ZF hypersonic glider, "a US Army hypersonic missile blew up shortly after launch in August 2014," according to the Washington Free Beacon.

"Hypersonic missiles are being developed to defeat increasingly sophisticated missile defenses. The weapons are designed for use in rapid, long-range strikes," the website said.

It also cited Russian Deputy Prime Minister Dmitri Rogozin as saying that hypersonic weapons are of paramount importance and that "whoever is first to achieve" more progress in their development would "overturn the principles" of how wars are waged.

Additionally, the Washington Free Beacon referred to Rep. Mike Rogers, Chairman of the Subcommittee on Strategic Forces, who voiced concern about the matter.

"I'm troubled that Russia and China continue to outpace the US in the development of these prompt global strike capabilities," he said.

He was echoed by former Pentagon strategic forces policymaker Mark Schneider, who said that the US hypersonic weapons program compares poorly to the Russian one in terms of scale and technological characteristics.

"US programs involving hypersonic vehicles are modest by comparison. I would be surprised if we actually deploy one. If we do, it will likely be conventional. Russian hypersonic vehicles will likely either be nuclear armed or nuclear capable…," he pointed out.

He also quoted Russian state media as saying that a hypersonic cruise missile is now being developed for Russian naval vessels, such as the fifth generation Husky missile submarine, which has yet to be constructed.

The Russian hypersonic anti-ship missile Tsirkon is due to enter service already by 2018, Rogers said, adding that the yet-to-be-completed Russian next-generation stealth bomber PAK DA will also be armed with air-launched hypersonic missiles.

According to the Washington Free Beacon, hypersonic speed ranges between Mach 5 and Mach 10, or 3,836 miles per hour to 7,673 miles per hour, something that will certainly pose a serious challenge for arms manufacturers.

http://sputniknews.com/world/20160423/1038490289/russia-hypersonic-glide-vehicle.html

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International Business Times – London, U.K.

Bomb-Sniffing Drones: US Scientists Develop UAV Nuclear Weapon Detection Sensors

By Mary-Ann Russon

April 25, 2016

US scientists have found a way to miniaturise the sensor technology used to help detect nuclear and chemical weapons so that it can be attached to a drone, which could potentially make it much easier to detect dangerous explosives.

Researchers and graduate students from the University of Wisconsin-Madison's Fusion Technology Lab have developed a system that can be attached to an unmanned aerial vehicle (UAV). A vehicle is driven out to the location of the hidden explosives laden with several drones.

One drone, known as the relay drone, hovers in the air. A device on the vehicle generates electricity and converts it into radio waves, which are beamed up to the relay drone. The relay drone then converts the radio waves back to electricity, and then back to radio waves again, before beaming them down to power a neutron drone.

The neutron drone, which is hovering close to the ground, irradiates the target area with neutrons, after which sensor drones begin searching for gamma rays or other particles that have the signature of specific chemical and explosive materials. If any evidence of this is found, the sensor drones send an alert back to mission control.

A cheaper and safer way to detect explosives

At the moment, similar sensors are used at security checkpoints in airports to scan luggage, and the same sensors are included in detectors used by UN weapons inspectors and military bomb disposal specialists to locate weapons of mass destruction and roadside bombs, but current solutions require closer contact with the hidden explosives, which is dangerous.

Of course, it is possible to use special tracked vehicles designed to roll right up to a suspicious package or bump in the road and attempt to detonate any possible explosives, but this is expensive. Using a system of drones would likely be cheaper and the UAVs can instantly establish whether the package is safe, rather than law enforcement having to take the precaution of safely exploding all potentially suspicious packages.

It could take about a year for the technology to come onto the market, but there are also concerns about how much radiation the drones use when scanning the target area. However, the researchers say that the radiation levels are minimal – the radiation that a person standing in the target area will absorb is approximately equivalent to the amount of radiation a traveller absorbs from spending 10 minutes in an aeroplane flying at 30,000ft.

#US is developing bomb sniffing drones, that could detect terrorists IEDs & active land

Warfare Worldwide (@WarfareWW) April 24, 2016

Drones cannot yet detect explosives in the sea

The US military is very interested in the development of this bomb sniffing drone technology, and in fact the US Navy was hoping to be able to use the drones to detect mines located at the bottom of the sea, but unfortunately, this is not possible at the moment.

The hydrogen in water slows down the neutrons beamed into the target area by the neutron drone, which makes it impossible for the system to detect explosives unless a potential mine is located within 3ft of the water's surface.

"[The students] did something that has never been done before," Jerry Kulcinski, an emeritus professor of nuclear engineering and the lab's director told local Wisconsin newspaper The Journal Times.

"One of the ways to get around the drones is to bury (explosives) very deep, but if you bury them very deep they won't create the damage they'd create if they were a foot or so below the ground. So if you can get the bad guys to bury everything six feet down, then you're making some progress."

http://www.ibtimes.co.uk/bomb-sniffing-drones-uavs-carry-nuclear-weapon-detection-sensors-1556679

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The Diplomat – Tokyo, Japan

China Tests New Weapon Capable of Breaching US Missile Defense Systems

Beijing has successfully tested a new hypersonic missile.

By Franz-Stefan Gady for *The Diplomat*

April 28, 2016

Last week, China has yet again successfully tested the developmental DF-ZF (previously known as WU-14) hypersonic glide vehicle (HGV), Bill Gertz over at *The Washington Free Beacon* reveals.

The test of the high-speed maneuvering warhead took place at the Wuzhai missile test center in central China's Shanxi Province, some 250 miles (400 kilometers) southwest of Beijing.

"The maneuvering glider, traveling at several thousand miles per hour, was tracked by satellites as it flew west along the edge of the atmosphere to an impact area in the western part of the country," Gertz reports.

China has now tested the new weapon a total of seven times. The last launch of the DF-ZF– an ultra-high-speed missile purportedly capable of penetrating U.S. air defense systems based on interceptor missiles–occurred in November in November 2015 (See: "China Tests New Hypersonic Weapon").

The DF-ZF HGV can allegedly reach speeds between Mach 5 and Mach 10, or 6,173 kilometers (3,836 miles) per hour and 12,359 kilometers (7,680 miles) per hour. I previously explained the sequence of a DF-ZF HGV launch:

The DF-ZF warhead is carried to the boundary between space and Earth's atmosphere, approximately 100 km above the ground, by a large ballistic missile booster.

Once it reaches that height, it begins to glide in a relatively flat trajectory by executing a pull-up maneuver and accelerates to speeds of up to Mach 10.

The gliding phase enables the HGV not only to maneuver aerodynamically – performing evasive actions and evading interception – but also extends the range of the missile.

U.S. defense officials confirmed in June 2015 that the DF-ZF performed "extreme maneuvers" during a flight test.

What makes the DF-ZF particularly dangerous is that as of now there is no adequate defense against the new hypersonic weapon as I reported last year:

[U]nlike conventional reentry vehicles, which descend through the atmosphere on a predictable ballistic trajectory, hypersonic glider vehicles are almost impossible to intercept by conventional missile defense systems, which track incoming objects via satellite sensors and ground and sea radar.

Once deployed, the DF-ZF warhead mounted on intercontinental ballistic missile (e.g., the DF-41) would give the PLA a global strike capability. The HGV could also be mounted on short and intermedium-range anti-ship ballistic missiles capable of penetrating the layered air defenses of a U.S. carrier strike group.

A weakness in high-performance computing is allegedly plaguing China's DF-ZF program and slows down Chinese efforts to design hypersonic weapons, according to some media reports:

[T]he lack of computing power slowed down scientists' effort to create and verify innovative designs for hypersonic weapons (…). A good supercomputer could be used as a "digital wind tunnel" to quickly develop prototypes for test flights and help the decision on the choice of models for production.

U.S. super computers are currently ten times faster than their Chinese counterparts. "Without faster computers, Chinese researchers would have to waste time breaking down sophisticated calculations into smaller jobs so they could be run on less advanced machines," the *South China Morning Post* reported last year.

Experts assume that that China is still about two decades away from fielding a missile with an operational DF-ZF warhead capable of hitting a moving target, although some analysts believe that the new weapon could be deployed as early as 2020.

http://thediplomat.com/2016/04/china-tests-new-weapon-capable-of-breaching-u-s-missile-defense-systems/

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The Korea Times – Seoul, South Korea

'N.Korea Makes Progress in SLBM Tech'

By Jun Ji-hye

April 24, 2016

North Korea is believed to have made progress in acquiring some technologies necessary for the development of a submarine-launched ballistic missile (SLBM), South Korea's Ministry of National Defense and military experts said Sunday, following the North's latest test-fire one day earlier.

The ministry said that the North would be able to operationally deploy the SLBMs in three or four years, adding that should the Kim Jong-un regime make a concentrated effort on the development, the new weapon may enter service earlier than estimated.

According to the Joint Chiefs of Staff (JCS), the North launched what appeared to be a ballistic missile from a 2,000-ton Sinpo-class submarine in the East Sea at 6:30 p.m. Saturday.

The JCS downplayed the test, saying the missile flew only about 30 kilometers, well short of the minimum SLBM range of 300 kilometers.

However, on Sunday, the North said it successfully launched an SLBM, claiming that the missile was launched from its maximum underwater depth, and that its "cold launch" ejection mechanism and high-performance engine using solid fuel worked without a hitch, along with its flight controls and warhead release systems, according to the state-run Korean Central News Agency (KCNA).

A cold launch is a complicated technology involving hurtling a missile out of the water to put it on trajectory for a designated target, necessary for SLBM development.

The ruling Workers' Party's official newspaper, the Rodong Sinmun, also released a number of photos, including one showing the missile bursting out of the water.

The ministry said, after its analysis of photos released by the North, that the North is believed to have made progress in acquiring technologies necessary to launch the missile from underwater, but still failed to prove that the projectile's ballistic trajectory can follow a parabolic path.

"The North's SLBM test-fire was a clear provocative action that violated U.N. resolutions. We strongly condemn the action," ministry spokesman Moon Sang-gyun said.

Foreign ministry spokesman Cho June-hyuck also criticized the North in a rare statement, saying that the repressive state will face harsher sanctions if it continues to take provocative actions.

It was the first time that the foreign ministry spokesman issued a statement regarding the North's SLBM test, apparently indicating that the government is taking the progress of Pyongyang's SLBM technology seriously.

Experts also say the latest test-fire should not be characterized as a failure simply because its range fell short.

Kim Dong-yup, professor at the Institute for Far Eastern Studies (IFES), a research arm of Kyungnam University, said the North test-fired the SLBM in an area adjacent to land, which apparently means the purpose of the test was not to prove its range.

"In my opinion, letting the SLBM fly about 30 kilometers could have been enough to see its engine working well, the missile fixing its angle and flying, and after some period of time, the warhead detaching from the rocket," Kim said. "If the North's claims were all true, the latest test carries great significance."

Jung Young-tae, a professor at Dongyang University and a military commentator, called the test a "half success," saying that the North appeared to succeed in two stages _ launching a "capsule" containing the missile underwater, and then having the capsule open in the air so that the missile can be launched.

"To call the test a complete success, the range needs to be about 300 kilometers," he told reporters.

Other experts also paid attention to photos released by the North showing that the missile soared almost vertically toward the sky this time, while one test-fired in May last year was tilted at about a 74 degree angle to the surface of the sea when it was launched.

They say this showed that there has been improvement in the North's capability of launching the missile from underwater.

The KCNA said North Korean leader Kim Jong-un was present for the SLBM launch and stressed that Pyongyang now has the capability to strike its opponents in South Korea and the United States, with the least warning and at anytime it pleases.

Kim also said that with the SLBM launch, the North now possesses a powerful nuclear arsenal and a credible delivery system, the news agency said.

"He noted with great satisfaction that Juche Korea had access to one more means for a powerful nuclear attack as required by the strategic intention of the Party Central Committee," the KCNA report said.

It added that the leader praised the officials, scientists and technicians in the fields of national defense science and munitions factories for having successfully developed the technology for the underwater missile launch from a submarine.

http://www.koreatimes.co.kr/www/news/nation/2016/04/116_203274.html

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The Korea Herald – Seoul, South Korea

U.S. Confirms N. Korea's Submarine Missile Launch

April 24, 2016

The U.S. Defense Department confirmed North Korea's launch of a submarine missile Saturday, saying the firing did not pose a threat to North America.

"The U.S. Strategic Command (USSTRATCOM) systems detected and tracked what we assess was a North Korean submarine missile launch" at 4:29 a.m. CDT, the Pentagon said in a statement. "According to North American Aerospace Defense Command, the missile launched from North Korea did not pose a threat to North America.

"The men and women of USSTRATCOM, NORAD, and U.S. Northern Command and U.S. Pacific Command remain vigilant in the face of North Korean provocations and are fully committed to working closely with our Republic of Korea and Japanese allies to maintain security," it said.

Earlier, South Korea's Joint Chiefs of Staff said that the North fired what was believed to be a submarine-launched ballistic missile (SLBM) around 6:30 p.m. (Korean time) in the East Sea, but it flew for only about 30 kilometers, well short of the minimum SLBM range of 300 km.

U.S. State Department spokesman John Kirby declined comment on whether the launch was successful but stressed that any "launches using ballistic missile technology are a clear violation of multiple U.N. Security Council resolutions."

"We closely monitor North Korean activities and the situation on the Korean Peninsula, especially North Korean military activities," he told Yonhap News Agency. "We call on North Korea to refrain from actions that further destabilize the region and focus instead on taking concrete steps toward fulfilling its commitments and international obligations."

Kirby also said that the U.S. remains steadfast in its commitments to the defense of allies and will continue to coordinate closely with the ROK, Japan, and other allies and partners. (Yonhap)

http://www.koreaherald.com/view.php?ud=20160424000243

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RT (Russia Today) – Moscow, Russia

N. Korea Vows to Stop Nuke Tests if US Ends Military Drills with Seoul

24 April 2016

Pyongyang said it will stop conducting nuclear tests if the US puts an end to its annual military drills in the South, North Korea's foreign minister told AP on Saturday.

"Stop the nuclear war exercises in the Korean Peninsula, then we should also cease our nuclear tests," Foreign Minister Ri Su Yong said in his first-ever interview with Western media. *"If we continue on this path of confrontation, this will lead to very catastrophic results, not only for the two countries but for the whole entire world as well."*

At the same time, Ri stressed that his country has the right to maintain a nuclear deterrent and will not be bullied by international sanctions.

Korea's foreign minister asserted that it was the US that had pushed the North to develop nuclear weapons as a self-defense strategy, adding that the only thing that could dissuade the country from carrying out its tests, would be for the US to halt its military exercises with Seoul.

"It is really crucial for the United States government to withdraw its hostile policy against the DPRK [Democratic People's Republic of Korea] and as an expression of this stop the military exercises, war exercises, in the Korean Peninsula. Then we will respond likewise," he said in Korean.

If the drills were to be stopped *"for some period, for some years, new opportunities may arise for the two countries and for the whole entire world as well,"* he observed.

Ri arrived in New York on Friday for an official UN ceremony, where over 160 countries signed on to a climate change deal reached last year.

In response to Ri's comments, a US official told AP that participating in military exercises in South Korea demonstrates the US' commitment to the region and provides an opportunity to update existing military techniques.

"We call again on North Korea to refrain from actions and rhetoric that further raise tensions in the region and focus instead on taking concrete steps toward fulfilling its international commitments and obligations," said the official on condition of anonymity.

Pyongyang views American exercises in the South as a rehearsal for an actual invasion of the North. This is not the first time such a proposal has been made, but the US continues to insist that North Korea must make the first move by giving up its nuclear ambitions.

Tensions between Pyongyang and Seoul recently escalated after the North conducted a hydrogen bomb test in early January and successful put a satellite into orbit a month later, going against several UN Security Council resolutions.

North Korea stated on Sunday that its most recent submarine-launched ballistic missile test, which was overseen by the country's leader, Kim Jong Un, had been a *"great success,"* providing *"one more means for powerful nuclear attack,"* the North Korean news agency, KCNA, reported.

"It fully confirmed and reinforced the reliability of the Korean-style underwater launching system and perfectly met all technical requirements for carrying out... underwater attack operation," the news agency said.

A submarine-launched ballistic missile (SLBM) was fired on Saturday from the Sea of Japan (also known as the East Sea) in open waters at about 6:30 pm local time (0930 GMT), Seoul's Joint Chiefs of Staff (JCS) said.

The missile flew *"for a few minutes,"* Yonhap agency reported, citing a military source.

https://www.rt.com/news/340745-north-korea-nuclear-us-drills/

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The Korea Times – Seoul, South Korea

Obama Dismisses N. Korea's Offer to Halt Nuclear Tests

April 25, 2016

U.S. President Barack Obama on Sunday rejected North Korea's offer to halt nuclear tests if the United States suspends joint military exercises with South Korea, saying he doesn't take the proposal seriously and will continue to take steps to defend the Asian ally.

Pyongyang's Foreign Minister Ri Su-yong made the proposal in a media interview on Saturday, renewing the North's long-running claims that the country was compelled to develop nuclear weapons to cope with what it calls U.S. nuclear threats and hostile policy toward Pyongyang.

"We don't take seriously a promise to simply halt until the next time they decide to do a test these kinds of activities," Obama said at a joint news conference with German Chancellor Angela Merkel, according to a White House transcript.

Obama also said that if North Korea shows seriousness in denuclearizing the Korean Peninsula, the U.S. will be prepared to "enter into some serious conversations with them about reducing tensions and our approach to protecting our allies in the region."

"But that's not something that happens based on a press release in the wake of a series of provocative behaviors. They're going to have to do better than that," Obama said. "Until they do, we're going to continue to emphasize our work with the Republic of Korea and Japan, and our missile defense mechanisms, to assure that we're keeping the American people safe and we're keeping our allies safe."

The communist nation made the same proposal in the past, but the U.S. rejected it as an "implicit threat," stressing that the North is banned from nuclear tests under U.N. resolutions and that joint military exercises with South Korea are purely defensive.

The latest offer came amid growing concern that the North could carry out yet another nuclear test soon, just a few months after its fourth nuclear blast in January, in the runup to next month's Workers' Party Congress that would be convened for the first time in 36 years.

On Saturday, the North test-fired what was believed to be a submarine-launched ballistic missile (SLBM), but the launch was assessed as a failure as it flew for only about 30 kilometers. Still, Pyongyang claimed Sunday that the test was successful.

Referring apparently to the SLBM test, Obama said that the U.S. is "analyzing and assessing with precision the activities that North Korea engaged in over the last several days."

"What is clear is that North Korea continues to engage in continuous, provocative behavior; that they have been actively pursuing a nuclear program, an ability to launch nuclear weapons," Obama said. "Although more often than not they fail in many of these tests, they gain knowledge each time they engage in these tests. And we take it very seriously."

Obama said that it is because of the North's provocative behavior that the U.S. has mobilized the international community to isolate the country, to "crank up the sanctions that impose a cost on Kim Jong-un and Pyongyang."

The U.S. has also sought cooperation with China to increase pressure on the North, Obama said.

"And although it is not where we would completely like it to be, I will say that we've seen the Chinese be more alarmed and take more seriously what North Korea is doing, and they have been willing to be more forward-leaning in exacting a price on North Korea's destructive behavior," he said. (Yonhap)

http://www.koreatimes.co.kr/www/news/nation/2016/04/485_203310.html

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Yonhap News Agency – Seoul, South Korea

N. Korea Aims to Build New 3,000-ton Sub Armed with 3 SLBMs: Experts

April 25, 2016

SEOUL, April 25 (Yonhap) -- North Korea may be in the process of developing a 3,000-ton submarine that can provide a stable platform to launch three submarine-launched ballistic missiles (SLBM) as the country is scurrying to enhance its nuclear delivery capability, military experts here said Monday.

Local military observers said to meet such a goal, Pyongyang may move to test-fire SLBMs until it is confident in launching a missile that can fly as far as 2,000 kilometers, the experts also predicted.

On Saturday, North Korea fired a SLBM from a 2,000-ton Sinpo-class submarine in the East Sea in its latest SLBM test-firing after the country first publicized it carried out a SLBM ejection test in May 2015.

After soaring from the water, the ballistic missile flew some 30 kilometers.

Although the flight distance fell far short of a regular SLBM that could fly several thousand kilometers, South Korean experts assessed that the North has made progress in advancing its technology from the initial ejection test stage to the flight test phase.

With the recent progress, North Korea may have already embarked on a project to build a larger submarine that could carry a number of SLBMs, an armament substantial enough to pose tangible threats to the United States, according to the experts.

North Korea's current 2,000-ton submarine can embark and launch one SLBM from about 10 to 15 meters below the water's surface. This shallow depth puts the submarine at greater risk of detection compared with bigger SLBM-equipped submarines that could go down some 50 meters, the experts said.

They also stressed that the communist country would continue to make efforts to increase its SLBM range to the extent that their submarine missiles could pose threats to the United States from very far away.

"If the missile flew 30 kilometers in the initial flight test, it means progress has been made to some extent," one expert well versed on submarines said.

To counter North Korea's growing submarine threats, Seoul is gearing up to deploy bigger submarines with greater offensive capabilities.

Under the project dubbed KSS III, South Korea plans to deploy a new fleet of nine 3,000-ton submarines in the 2020s.

The first batch will include three submarines, each equipped with six vertical missile launch tubes, and their deployment will come in the early 2020s, military sources said.

An additional three submarines to be deployed from 2025 under the same project will be equipped with 10 vertical launch tubes that can fire missiles in response to any North Korean provocations, according to sources.

http://english.yonhapnews.co.kr/northkorea/2016/04/25/0401000000AEN20160425007651315.html

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Defense One – Springfield, VA

Intelligence Chief: We Don't Know If North Korea Has a 'Boosted Bomb'

Pyongyang's bomb-making capabilities remain opaque even to the nation's top spy.

By Patrick Tucker

April 25, 2016

"We don't really know" if North Korea tested a "boosted" nuclear device this year, the U.S. intelligence chief said Monday.

A boosted nuclear weapon is sometimes described as an intermediary point between a fission bomb and a much more destructive hydrogen bomb.

The seismic data from the Jan. 6 underground bomb test, which produced a 5.1-magnitude quake, indicates that the yield was about 6 kilotons (possibly 10), in line with a conventional fission device, not a thermonuclear bomb, which can have a yield between 15,000 and 50,000 kilotons.

On Monday, Director of National Intelligence James Clapper echoed what most other experts have said: "It was much more modest than they claimed," he said. "It's hard to say what they are trying."

Some have argued that a so-called boosted bomb would represent a significant increase in North Korean capability. In a boosted bomb, fissile material such as plutonium (of which North Korea has a small stockpile) or highly enriched uranium is put into a fissile chain reaction. The reaction fuses deuterium and tritium, two hydrogen isotopes, that have been thrust into the bomb's core.

"While the fusion reaction does somewhat increase the explosive yield, the main purpose of this reaction is to release lots of neutrons that would then cause many additional fission reactions," Charles D. Ferguson, the president of the Federation of American Scientists, wrote in January.

Bottom line, it's not exactly a mega-destructive hydrogen bomb, but it does allow you to get a lot bigger explosion out of much less fissile material. That means you can make smaller bombs that can fly farther atop a given missile.

"A boosted fission bomb alone…would mean that North Korea is well on its way to making nuclear bombs that are small enough and lightweight enough to fit on ballistic missiles," wrote Ferguson.

That's far more concerning in the wake of the most recent demonstration of a submarine-launched missile, even though the missile flew only about 19 miles. (A successful test would have flown closer to 200 miles.)

"In the case where North Korea does not need to produce a much bigger explosive yield per bomb, but is content with low to moderate yields, it can make much more efficient use of its available fissile material…and have much lower weight bombs," Ferguson wrote. He said North Korea probably has enough fissile material to make as many as "a few dozen" bombs. U.S. capabilities for detecting or analysing different tests are limited. Besides seismic tests, the Air Force Technical Applications Center, or AFTAC, at Patrick Air Force Base, Florida, can probe the atmosphere for different isotopes with sensors aboard a Boeing WC-135 Constant Phoenix plane. The presence of tritium would be a more conclusive evidence of a boosted bomb blast. Clapper's response suggests that AFTAC has yet to detect any telltale tritium.

Other experts were more confident that North Korea had tested a boosted bomb. "Given Kim Jong-un's desire to claim North Korea had mastered H-bomb technology, North Korea likely did test a

boosted weapon in January," Bruce Bennett, a senior defense analyst with the RAND Corporation, told *Defense One*. "According to the web site 38 North, the fourth nuclear test was buried about twice as deep as the third nuclear test, suggesting that North Korea was seeking a 50 kiloton or so weapon yield. It got 10 kilotons. From just measuring the weapon yield, we cannot tell whether any of this explosion was due to fusion—the 'h-bomb' component of the explosion. But if North Korea had gotten 50 kilotons, it would almost certainly be the case that fusion was a part of the explosion. I think Kim wanted that proof, and likely was very unhappy that he did not get it," said Bennett.

If North Korea developed a boosted bomb, how soon could they upgrade to a full hydrogen bomb? Clapper would not say.

"Aspirationally, the current regime in North Korea, which is one guy, is very determined to portray to the world that North Korea is a nuclear power and he wants recognition of that," the U.S. intelligence chief said. "Despite some of the failure that they've recently incurred they will continue to press on to develop nuclear capabilities, which I think, ultimately, aspirationally, would include a hydrogen bomb capability. But I certainly can't prescribe a timeline," he said. "if you think about it, the North Koreans have achieved an objective there because they've created at least the psychology of deterrence."

"it has taken the big countries 10 years or less to go from first fission test to first significant (beyond boosted) fusion test. On the other hand, the US and Soviet nuclear programs were massively staffed, and the North Korean program is not as well staff or financed," said Bennett.

"I don't know if it is possible within five years," Ferguson told *Defense One* in an email. "It seems reasonably clear that they want such a capability. If they had outside help, they might be able to speed up the development process. Even more advanced states such as India and Pakistan have struggled to develop H-bomb capabilities. There are still some who doubt whether those two countries really have such capability. Recall that the United States, Russia, China, France, and the UK made many tests (in the case of the United States more than 1,000) to develop more advanced nuclear weapons. So, North Korea would not be much different," he said.

http://www.defenseone.com/technology/2016/04/intelligence-chief-we-dont-know-if-north-korea-has-boosted-bomb/127782/

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Yonhap News Agency – Seoul, South Korea

Short-Range in N. Korea's SLBM Test Doesn't Signal Failure: U.S. Expert

By Chang Jae-soon

April 26, 2016

WASHINGTON, April 25 (Yonhap) -- North Korea's latest submarine missile test suggests the communist nation has shifted to developing a solid-fuel missile after repeated failures with a liquid-fuel engine, and the short flight distance in the latest test does not mean it's a failure, a U.S. expert said Monday.

The North conducted the submarine-launched ballistic missile (SLBM) test on Saturday in the latest in a series of weapons tests aimed at defying international pressure over its nuclear and missile programs. The launch was seen as a failure because the missile flew only about 30 kilometers.

But John Schilling, an expert on North Korean missile capabilities, said that the missile could have been carrying fuel only for that distance. More importantly, the launch showed that Pyongyang has switched to development of a solid-fuel missile, he said.

"North Korea has revealed images of a submarine-launched ballistic missile test indicating that it has abandoned the liquid-fuel design that has consistently failed in the past and switched to a more robust solid-propellant system that will have a better chance of actually working in an operational environment," Schilling said in an article carried by 38 North.

"The new design is still in the earliest stages of testing, and much work, including development of a full-scale motor, needs to be done. Nevertheless, the simpler design is likely to be less troublesome to develop and could be ready by 2020," he said.

Images the North released after last year's SLBM test showed yellow-orange streak of fire from the missile's tail, a key sign that the missile runs on liquid fuel. But images of the latest test show "an almost incandescent white plume," suggesting it's using solid fuel, Schilling said.

With regard to the flight distance, the expert said that flying 30 km is not an easy job.

"In order to fly even 30 km, a ballistic missile has to not only launch successfully but accelerate well past the speed of sound. For a single-stage missile, those are the hard parts. Once accomplished, the safe bet is that the missile will continue to accelerate until it runs out of fuel," he said.

"If the missile flew 30 km, there is a good chance it was only carrying fuel for 30 km. To be fair, after four failed test launches, one can understand the test crew not wanting to have a full 10 to 20 tons of rocket fuel falling on their heads, expensive barges or submarines," he said.

Compared with a liquid-fuel missile, a solid-fuel missile has much less range, Schilling said. He added, however, that the reduced range still represents a serious threat.

If equipped with a liquid-fuel engine, the North's SLBM, also known as KN-11, would have flown 1600 km with a 650 kg warhead, but a single-stage solid-propellant version will probably be good for only 900 km, he said.

"This range is still enough to reach all of South Korea and parts of Japan from North Korean territorial waters. If the boat ventures even a little ways into the Sea of Japan, it can reach targets anywhere in Japan," he said.

"And the ability of North Korea's submarine force to reach targets further afield has always depended on the ability of the submarines to reach the open sea, not on the range of the missiles. If a North Korean submarine can escape the Sea of Japan and come within 1600 km of Guam, or Hawaii, it can almost certainly cover an extra 700 km," he added.

http://english.yonhapnews.co.kr/northkorea/2016/04/26/0401000000AEN20160426000351315.html

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The Korea Herald – Seoul, South Korea

Former U.S. Official Says U.S. Does Not Rule Out First-Use Nuclear Option against N.K.

April 26, 2016

The United States has not ruled out the option of using nuclear weapons "first," due in part to North Korea's potential threat to South Korea, a former senior U.S. official said Tuesday, stressing that America's security commitment to its Asian ally remains credible.

During an interview with reporters at a forum, Robert Einhorn, former special adviser for nonproliferation and arms control at the U.S. State Department, also underscored the role of China in the successful implementation of international sanctions on the North.

"One reason we have not ruled it out is because of the potential threat that North Koreans pose against South Korea," he said, pointing out that the U.S. has never adopted a "no-first-use" policy.

"So the U.S. has said that it is prepared if necessary to use nuclear weapons first -- whether in Europe or in East Asia -- to support South Korea and Japan. This remains U.S. policy," he added during the interview on the sidelines of the Asan Plenum 2016, an annual forum hosted by the Seoul-based Asan Institute for Policy Studies.

Einhorn made the remarks amid growing concerns here over America's security commitment to the South in the face of an increasingly provocative North Korea that has threatened the South and the U.S. through its evolving nuclear and missile programs.

The concerns escalated further after U.S. Republican presidential contender Donald Trump indicated the possibility of the withdrawal of American troops from the peninsula due to heavy costs for the upkeep of such forces.

"The U.S. has 28,500 military personnel here in South Korea. We have the Combined Forces Command. We exercise jointly frequently. The military interactions between our two governments are intimate and they are stronger than ever," he said.

"So, I think the U.S. nuclear umbrella is credible today, and it would remain credible in the future -- as long as our alliance is strong and as long as the U.S. forces are deployed here."

Pointing out that diplomacy cannot succeed without pressure, Einhorn called for a dual-track approach that mixes diplomacy with pressure to persuade Pyongyang to renounce its nuclear ambitions.

In applying the pressure, China is the "key," he stressed.

"Unless China implements conscientiously and vigorously, then sufficient pressure will not be placed on North Korea to give it incentives to negotiate seriously and to limit and eventually give up its nuclear capabilities," he said.

Commenting on President Park Geun-hye's planned trip to Iran, Einhorn, who also served as a U.S. negotiator on the Iranian nuclear issue, said that there are several messages the president needs to convey to the Islamic republic. Park is set to visit Tehran from May 1-3 with a focus on bolstering bilateral economic ties.

"Park should urge Iranians to show restraint in the ballistic missile activity area," he said, calling Iran's missile tests "destabilizing activities."

He also said that Park should emphasize to the Iranian leadership that South Korea's security could be adversely affected by collaboration between North Korea and Iran on either nuclear or missile technologies. (Yonhap)

http://www.koreaherald.com/view.php?ud=20160426001018

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Yonhap News Agency – Seoul, South Korea

Lack of Activity at N.K. Nuclear Test Site Could Suggest Test Preparations Complete: ISIS

April 26, 2016

WASHINGTON, April 26 (Yonhap) -- Activity at North Korea's nuclear test site has significantly decreased in a possible indication that the communist nation has completed all preparations for a fifth nuclear test, a U.S. think tank said Tuesday.

"Since North Korea announced plans for a 'nuclear warhead explosion test' in mid-March, which could imply a fifth nuclear test, a significant number of vehicles and equipment have reportedly been spotted at the Punggye-ri test site," the Institute for Science and International Security (ISIS) said in a report.

However, none of these signs are present now, the institute said, citing satellite imagery taken of the site between Friday and Monday. That is consistent with recent South Korean news reports highlighting the lack of activity at the site, it said.

"The reporting stated that North Korea had completed all activities necessary for its fifth nuclear test. No test has occurred so far but a fifth nuclear test remains of concern," it said.

The only noteworthy sign in Monday's image is the presence of carts on the tracks to the North Portal's spoil pile. In theory, the presence of these carts could indicate that excavation activities are taking place, but there is no evidence that the carts are being used, ISIS said.

Concerns also persist that Pyongyang could carry out yet another nuclear test just a few months after its fourth test in an effort to project an image of Kim Jong-un as a strong leader in the lead-up to the Workers' Party Congress next month.

The North has also conducted a series of weapons tests, including the first-ever test launch of the intermediate-range mobile missile Mususan earlier this month and Saturday's firing of a submarine-launched ballistic missile.

http://english.yonhapnews.co.kr/northkorea/2016/04/26/0401000000AEN20160426011700315.html

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Xinhua News – Beijing, China

Constitution Does Not Ban Chemical, Biological Weapons: Japanese Gov't

Source: Xinhua

April 26, 2016

TOKYO, April 26 (Xinhua) -- The Japanese governemnt said on Tuesday that the country's constitution does not ban chemical or biological weapons, triggering outrages among people.

In a response to a lawmaker's inquiry, the government said in a statement that the Article 9 of Japan's Constitution does not ban Japan from having minimum armed forces needed for self-defense and thus does not specifically ban chemical or biological weapons if such weapons are within the minimum limits.

But the statement also noted that Japan will not use chemical or biological weapons as it has joined the Biological Weapons Convention (BWC) and Chemical Weapons Convention (CWC).

The Japanese government has made a similar reply earlier this month on nuclear weapons, claiming that the Constitution does not necessarily ban Japan from owning or using nuclear weapons.

The government's interpretation of the constitution has caused outrages from many people.

"The Article 9 of Japan's Constitution vows to forever renounce war as a sovereign right of the nation and gives up maintaining land, sea and air forces, as well as other war potential," said Keiichirou Ichinose, lawyer and director of non-governmental research group "Information Center on Unit 731 and Germ War."

It was outrageous and intolerable that the government claimed that the Constitution allows using weapons of mass destruction, such as chemical or biological weapons, he said.

"Japan used chemical and biological weapons and caused many sufferings to the people in other Asian countries during WWII. Japan shall apologize and make compensations for its past wrongdoings instead of take any action that might trigger wars." he said.

http://news.xinhuanet.com/english/2016-04/26/c_135314373.htm

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Global Times – Beijing, China

First NK Party Congress in 36 Years Shows Kim Has Consolidated Power

1st meeting in 36 years shows Kim has consolidated power

By Ding Xuezhen; Source: *Global Times*

April 28, 2016

North Korea's ruling Workers' Party is set to hold a congress for the first time in 36 years, a sign that the young leader Kim Jong-un's grip on power has consolidated, analysts said.

On Wednesday, Chinese foreign ministry spokesperson Hua Chunying declined to directly answer questions on whether the Communist Party of China (CPC) was invited and whether Chinese leaders would attend it.

"That is a major event in the political life of the Party and people of the North Korea," Hua said.

"Compared with his father Kim Jong-il, who did not convene a congress of the Workers' Party of Korea (WPK) during his 17-year rule, Kim Jong-un is eager to establish the leadership system centered on himself," Lü Chao, a research fellow at the Liaoning Academy of Social Sciences, told the Global Times on Wednesday.

The WPK decided Tuesday to convene its seventh congress in Pyongyang on May 6, North Korea's official Korean Central News Agency (KCNA) reported Wednesday. It did not specify how long the congress would last.

The report said delegates and observers to the upcoming congress were elected and nominated in previous WPK provincial conferences. Nearly 3,000 people are expected to attend the congress, the Xinhua News Agency reported Wednesday.

"Unlike his father Kim Jong-il who put the military first, Kim Jong-un intends to maintain social stability by promoting the building of the WPK," Cui Zhiying, director of the Korean Peninsula Research Center at Tongji University, told the Global Times.

Kim Jong-un proposed the policy of simultaneously pursuing economic development and nuclear weapons in 2014, attaching more importance to economic progress.

Kim probably would try to make some adjustments to its economic structure such as expanding economic development zones and establishing a taxation system, Lü said, noting that "the country's openness would be more or less increased."

Enhancing social unity

The congress' timing might be "a passive choice" of Pyongyang, Da Zhigang, director of the Institute of Northeast Asian Studies at the Heilongjiang Provincial Academy of Social Sciences, told the Global Times on Wednesday.

"Kim Jong-un needs to take the chance to enhance social unity and mobilize the people to get psychologically prepared for possible economic plight," Da said.

In February, Pyongyang launched the "70-day Battle" campaign that ends on May 2, to encourage party members and laborers to work harder and show loyalty to the WPK and the country, Xinhua reported.

Da warned that North Korea might have formulated a plan for a mid- to long-term fight against UN sanctions.

The country's current external economic environment would also force Kim to deepen economic reforms, especially in fields vital to the country's economy and its people's livelihood, including the agriculture, power and steel industries, Da noted.

Toning down nuke stance

Analysts said the North Korean foreign minister's previous proposal to halt nuclear tests if the US and South Korea stop their military exercises was only meant to win international sympathy ahead of its seventh congress.

Rodong Sinmun, a newspaper affiliated with the WPK, said Wednesday in a commentary that if the US continues its "hostile policy" toward North Korea, the latter would be compelled to take the countermeasures for self-defense, KCNA reported.

The words at least implied that under certain conditions, North Korea is open to abandoning its nuclear pursuits, Lü said, adding that "Pyongyang might tone down its stance on nuclear weapons in the upcoming congress."

Pyongyang test-fired a ballistic missile from a submarine off its east coast on Saturday, two days after Chinese and US diplomats reiterated their firm opposition to North Korea's "irresponsible and provocative" moves.

Pyongyang's nuclear and missile tests have in the past few years chilled relations between China and North Korea.

All the analysts the Global Times had contacted declined to comment on China's attendance at the congress.

In 1980, China sent a high-profile delegation led by Li Xiannian, then vice chairman of the CPC Central Committee, to the WPK's sixth congress, which included 177 delegates from 118 countries.

During the meeting, Li extended brotherly congratulations for the congress' success and the 35th anniversary of the party on behalf of the CPC during an assembly to welcome the visiting Chinese delegate in Hamhung, Xinhua reported.

Hamhung is among the eastern cities in North Korea used for missile tests since the UN adopted tougher sanctions in March.

http://www.globaltimes.cn/content/980516.shtml

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South China Morning Post – Hong Kong, China

China Won't Allow Chaos or War on the Korean Peninsula: Xi Jinping

Beijing fully backs UN sanctions against Pyongyang as it casts a shadow on bilateral ties

By Liu Zhen

Thursday, 28 April, 2016

China will not allow chaos and war to break out on the Korean peninsula, President Xi Jinping told a group of foreign ministers from Asia and the Middle East at a regional security summit in Beijing on Thursday.

China would continue to pursue its programme to denuclearise North Korea through dialogue and consultation, and would not allow the Korean peninsula to fall into war or chaos, Xi said.

"Once such a situation happens, it would not do anyone any good," he warned in a speech at the Conference on Interaction and Confidence Building Measures in Asia (CICA).

Xi said China has also "fully and completely" implemented UN sanctions against North North Korea's bid to develop a nuclear weapons capability – in defiance of United Nations' resolutions – has angered China amid growing tensions in the region.

Korea, which were imposed last month. He urged all sides to exercise restraint and return to the negotiating table.

Pyongyang conducted its fourth nuclear test in January and followed that with tests of various missiles that could deliver such a potent weapon.

The isolated state is expected to conduct another nuclear test before a rare congress of its ruling party, beginning on May 6, where young leader Kim Jong-un is likely to make a play for cementing his leadership.

China is North Korea's sole major ally but strongly disapproves of its nuclear ambitions.

Senior Chinese diplomats have repeatedly warned Pyongyang against its nuclear sabre-rattling.

Nearly 30,000 US troops are based in South Korea, and the two Koreas are still technically at war after the 1950-53 conflict ended in an armistice, not a treaty.

An online commentary published in social media by *People's Daily*'s overseas edition earlier this month criticised North Korea for failing to trust China and Russia to ensure its security and instead placing its faith in nuclear weapons.

China and North Korea signed their Treaty of Friendship, Cooperation and Mutual Assistance 55 years ago, under which Beijing pledged to assist Pyongyang in the event of an attack.

Observers said the strained ties between the nations over North Korea's nuclear ambitions cast uncertainty over the treaty's future.

CICA involves 26 members, including Russia and many countries from Central Asia and the Middle East. The United States and Japan are among the 12 observers.

Additional reporting by Reuters

http://www.scmp.com/news/china/diplomacy-defence/article/1939570/china-wont-allow-chaos-or-war-korean-peninsula-xi

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The Hankyoreh – Seoul, South Korea

North Korea Fails again to Launch Musudan Missile

By Park Byong-su, senior staff writer

April 29, 2016

For now North Korea's longest-range missile taps out at 1,300 km, with only Korea and Japan in range

North Korea attempted to launch what appeared to be a Musudan intermediate-range ballistic missile (IRBM) that crashed immediately on the morning of Apr. 28, the South Korean Ministry of National Defense said.

"At around 6:40 am today [Apr. 28], a projectile believed to be a Musudan was launched in the area of Wonsan, North Hamgyong Province, but it is believed to have failed," a senior South Korean military officer said.

"The projectile appears to have crashed seconds after launch," he added.

North Korea attempted its first test launch of the Musudan - also unsuccessful - on Apr. 15.

With a range of 3,000 to 4,000 km, the Musudan could pose a threat to US military bases on Guam. The South Korean military previously believed the missile to have been in position since 2007 without any test launches.

But with the latest suspected launch failure coming on the heels of the unsuccessful attempt on Apr. 15, a reappraisal of its combat capabilities now appears inevitable.

Both the Musudan and the KN-08 intercontinental ballistic missile (ICBM) are believed to have incorporated old Soviet Union R-27 (SS-N-6) technology, which is completely different from the kind used in the North's existing Scud and Nodong missiles. If the Musudan is confirmed to lack combat capabilities, that would mean the Nodong - with a maximum range estimated at 1,300 km - remains the farthest-reaching of the missiles North Korea currently has in place. In that case, its actual missile strike capabilities would only extend as far as the Korean Peninsula and Japan.

"In the case of the Naro [South Korea's first satellite launch vehicle], it took several months to make corrections and conduct another launch after the initial failure," a military officer said.

"It looks like they were rushing to make up for the previous failure after [North Korean leader] Kim Jong-un's orders on Mar. 15 to 'launch a variety of different ballistic rockets,' and they ended up failing again," the officer added.

http://english.hani.co.kr/arti/english_edition/e_northkorea/741856.html

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RT (Russia Today) – Moscow, Russia

Uranium Season: 2nd Group of Isotope Smugglers Busted in Georgia in 10 Days

28 April 2016

Georgia's security service says it has detained a group of five Georgian citizens, alleged to have been trying to sell radioactive Uranium for $3 million. The group was caught in possession of Uranium-238 and Uranium-235, Reuters reports.

"Officers of Georgia's State Security Service detained five Georgian citizens, who were trying to sell uranium," security service investigator Savle Motiashvili said.

found at the apartment of one of those arrested on Thursday.

"Given the gamma ray emission, the identity of the source and radiological expertise report, the seized substance endangers life and health," he said, as cited by Reuters.

Uranium-238 is a highly radioactive substance and an important component in the manufacturing of armor-piercing weapons.

In January, Georgia's security service said it had foiled a plot to sell radioactive cesium. The agency said three men were arrested in the capital Tbilisi for trying to peddle Cesium-137 for $100,000.

Cesium-137, obtained as a by-product from nuclear reactors, can be utilized for medical and industrial purposes. However, it can also potentially be used by terrorists who want to create a dirty bomb as it would disperse deadly radiation after detonation.

Uranium-238 is the most common natural uranium isotope. Although it can't undergo a nuclear chain reaction, it can be used to produce plutonium 239, which can be exploited for the production of nuclear weapons.

https://www.rt.com/news/341222-georgia-uranium-illegal-sellers/

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FARS News Agency – Tehran, Iran

Saturday, April 23, 2016

Spokesman: Iran in Final Stage of Talks on Exporting Heavy Water

TEHRAN (FNA) - Spokesman of the Atomic Energy Organization of Iran (AEOI) Behrouz Kamalvandi announced that the country is in final stage of talks with a number of countries to export its heavy water.

"Considering the strategic, economic and trade issues, we have studied different countries and are in the final stages of talks with a number of them to sell our excess heavy water to them," Kamalvandi said in an interview with state TV on Saturday.

In relevant remarks in Vienna on Friday, Iranian Deputy Foreign Minister for Legal and International Affairs Abbas Araqchi said that Iran would sell 32 metric tons of heavy water to the United States.

He confirmed that the AEOI and a US company reached an agreement on heavy water sale on Friday before a joint commission meeting between Iran and the G5+1 group of countries (the US, Russia, China, Britain and France plus Germany).

He added that the agreement was signed following three months of negotiations.

Araqchi and Helga Schmid, who represents the G5+1 countries, held four-hour talks in Vienna on Friday for the first time after Iran and the six world powers started implementing the nuclear agreement, dubbed the Joint Comprehensive Plan of Action (JCPOA), on January 16.

During the meeting, Araqchi and Schmid discussed the process of the JCPOA implementation and obstacles in this regard as well as the lifting of sanctions against Iran.

Iran and the five permanent members of the UN Security Council plus Germany signed the JCPOA on July 14, 2015 following two and a half years of intensive talks.

Under the JCPOA, all nuclear-related sanctions imposed on Iran by the European Union, the Security Council and the US would be lifted. Iran has, in return, put some limitations on its nuclear activities.

Meantime, a US State Department of Energy spokeswoman said on Friday that the agency will buy 32 metric tons of heavy water from Iran for $8.6 million.

"The United States will not be Iran's customer forever," the spokeswoman said, adding that the department plans to sell the heavy water to commercial and research entities, including a national lab, inside the US.

Meanwhile, State Department Spokesman John Kirby said Iran's compliance with the landmark nuclear agreement meant that the heavy water had already been removed from Iran.

"Our purchase of the heavy water means that it will be used for critically important research and non-nuclear industrial requirements," Kirby added.

The JCPOA allows Iran to sell its enriched uranium material - called UF6 - and to buy natural uranium or “yellow cake” in return.

http://en.farsnews.com/newstext.aspx?nn=13950204001220

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Tasnim News Agency – Tehran, Iran

US Hindering Fulfillment of JCPOA: EU Official

April 24, 2016

TEHRAN (Tasnim) – The vice president of the European Parliament's Delegation for Relations with the United States said Washington is "obstructing" the full implementation of a lasting nuclear deal between Tehran and world powers.

"Europe is being taken hostage by American policy," Marietje Schaake said as quoted by the New York Times.

"We negotiated the nuclear deal together, but now the US is obstructing its execution," she added.

According to Cyrus Razzaghi, the chief executive officer of Ara Enterprise, a Tehran-based consultancy, if the current banking obstacles are not removed, the deal will be jeopardized.

"The question is, now that the nuclear sanctions are lifted, what status quo will emerge when it comes to doing business with Iran?" said Razzaghi.

"Now everything is ambiguous. If the situation doesn't change for the better — banking, more deals — for Iran this will be a growing risk for the deal."

While the nuclear deal, known as the Joint Comprehensive Plan of Action (JCPOA), came into force in January, some Iranian officials have complained about the US failure to fully implement the accord.

Last month, Leader of the Islamic Revolution Ayatollah Seyed Ali Khamenei said Americans have yet to fulfill what they were supposed to do as per the nuclear deal.

Iran still has problems in its banking transactions or in restoring its frozen assets, because Western countries and those involved in such processes are afraid of Americans, Imam Khamenei said, criticizing the US for its moves to prevent Iran from taking advantage of the sanctions removal.

http://www.tasnimnews.com/en/news/2016/04/24/1056908/us-hindering-fulfillment-of-jcpoa-eu-official

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Trend News Agency – Baku, Azerbaijan

Iran, China to Cooperate in Configuration of Arak Heavy Water Reactor

By Khalid Kazimov, *Trend*

24 April 2016

Iran and China are expected to sign a document on cooperation for redesigning Arak heavy water reactor within the next couple of months, Iranian atomic spokesperson said.

Atomic Energy Organization of Iran's Spokesman Behrooz Kamalvandi has said that Tehran selected China for cooperation in Arak due to political reasons, Fars news agency reported.

Elaborating on the reasons for selecting China, Kamalvandi said that Beijing is more independent and it is unlikely to be impacted by the Westerners.

Explaining about technical procedure for the reconfiguration of Arak heavy water reactor, he said that Iran will redesign the facility and China will confirm the plan.

Director of the Atomic Energy Organization of Iran Aliakbar Salehi in February said that Iranian experts, with the contribution of foreign companies, will redesign controversial Arak nuclear facility.

Earlier in January, Iran removed the core of the Arak heavy-water nuclear reactor and filled it with cement as agreed under a nuclear deal between Tehran and the world's major powers.

Under the terms of the deal, Iran agreed that the heavy-water reactor would be reconfigured so it will be incapable of yielding material for a nuclear weapon.

According to the landmark nuclear deal clinched in July 2015, removing the core of the heavy water reactor to produce less plutonium was a crucial step before Iran's relief from economic sanctions agreed under the deal.

After a number of nuclear talks between Tehran and the P5+1 group of countries, the EU High Representative Federica Mogherini and Iran's Foreign Minister Mohammad Javad Zarif announced Jan. 16 about the implementation of the JCPOA, aka nuclear deal, and the removal of economic sanctions on Iran.

http://en.trend.az/iran/nuclearp/2524231.html

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Mehr News Agency – Tehran, Iran

Iran, S Korea Confer on Expanding Nuclear Coop.

Monday, 25 April 2016

TEHRAN, Apr. 25 (MNA) – In a Sun. meeting in Tehran, South Korean delegation headed by deputy minister of Trade, Industry and Energy stressed continuation of talks on expansion of nuclear cooperation with Iran .

The meeting was held in Tehran on Sunday with Behrouz Kamalvandi, AEOI legal and Parliamentary deputy-head, as well as a number of relevant officials. During the meeting, the two sides expressed interest and satisfaction with the increasing trend of nuclear cooperation between Iran and South Korea, highlighting serious determination on both parts for further expansion of bilateral cooperation.

The Korean official noted the development of cooperation between the two countries in economic, cultural and industrial fields, saying nuclear safety and issues related to safeguards can serve as the first steps toward accelerating nuclear cooperation between Tehran and Seoul.

He also expressed hope Iran-South Korea's nuclear cooperation will further expand in the future.

Also on Sunday, Japan's newly-appointed ambassador to Tehran held a meeting with AEOI Head Ali Akbar Salehi. In the meeting, the two sides conferred on expansion of ties, and expressed keen interest in developing cooperation in various nuclear areas, particularly in the field of nuclear safety .

According to Kamalvandi, the AEOI head is expected to visit Czech Republic and Slovakia next week to step up cooperation on construction of nuclear power plants.

South Korean President Park Geun-hye is slated to visit Iran from May 1-3 to discuss ways to promote business ties between the nations, leading a delegation of some 200 businesspeople from such areas as construction, energy and finance.

http://en.mehrnews.com/news/116084/Iran-S-Korea-confer-on-expanding-nuclear-coop

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Tasnim News Agency – Tehran, Iran

US Seizure of Iran's Assets Flagrant Breach of JCPOA: Senior Lawmaker

April 26, 2016

TEHRAN (Tasnim) – A senior Iranian legislator denounced the US decision to seize nearly $2 billion of the Central Bank of Iran's assets as a clear violation of the July 2015 nuclear deal between Tehran and six world powers, also known as JCPOA.

"The US administration's move to seize $2 billion of Iran's blocked assets is definitely considered a breach of the Joint Comprehensive Plan of Action (JCPOA)," Gholam-Ali Haddad Adel, who is also a member of the country's Expediency Council told the Tasnim News Agency on Tuesday.

He further emphasized that Washington has regarded the nuclear negotiations with Tehran as a tool for interfering in the internal affairs of the Islamic Republic and other regional countries.

The parliamentarian went on to say that as it has previously announced, the US is trying to change Iran's behavior toward regional issues as well as its internal policy through putting the country under economic pressures.

On Wednesday, the US Supreme Court upheld the Congress and President Barack Obama's actions to hold Iran financially responsible for the 1983 bombing that killed 241 Marines at their barracks in the Lebanese capital, Beirut.

The ruling allows the families of the Marines and victims of other attacks that courts have linked to Iran to seize some $2 billion in assets held in New York's Citibank, belonging to the Central Bank of Iran (CBI), which has been blocked under US sanctions.

In 2012, the US Congress passed a law that specifically directed the American bank to turn over the Iranian assets to victims' families. Obama also entered the battle in an effort to force the payments on Iran.

http://www.tasnimnews.com/en/news/2016/04/26/1059048/us-seizure-of-iran-s-assets-flagrant-breach-of-jcpoa-senior-lawmaker

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Trend News Agency – Baku, Azerbaijan

Iran in Talks with Russia on Heavy Water Sales

26 April 2016

Iran is holding talks with Russia to sell it about 40 tonnes of heavy water from its nuclear program, Iran's deputy foreign minister was quoted as saying by the Fars news agency, Reuters reported.

Under last year's landmark nuclear deal between Iran and world powers, Tehran is responsible for reducing its stock of heavy water which is a component of making nuclear weapons and producing nuclear energy.

It is not radioactive and the nuclear deal gives Iran the right to sell, dilute or dispose of it under certain conditions.

Abbas Araqchi, who is also a top nuclear negotiator, was quoted by the Fars agency as saying late on Sunday that the United States had been the first buyer of Iranian heavy water and some other world powers, including Russia, were now showing an interest.

"We are negotiating with Russia to sell 40 tonnes of heavy water," he said.

The Russian Foreign Ministry later confirmed Moscow was considering the purchase.

In January Iran removed the core of its Arak heavy water nuclear reactor and filled it with cement as required under a nuclear deal. The United States, Russia and China have agreed to participate in the redesign and the construction of a modernized reactor.

http://en.trend.az/iran/politics/2524898.html

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Press TV – Tehran, Iran

Iran Capable of Producing Inter-Continental Missiles: Diplomat

Wednesday, April 27, 2016

A senior Iranian diplomat says the country's scientific power has made it capable of producing inter-continental missiles, stressing that Iran's military doctrine is based on defense.

"Our country's power is increasing, and today we have no restrictions in defense fields, as in our missile program, we have no technical limits anymore," Hamid Baeidinejad said in remarks published on the Basirat website.

Baeidinejad is the Iranian Foreign Ministry's director general for political affairs and the Basirat website is affiliated to the Islamic Revolution Guards Corps (IRGC).

"Today, our scientific power has provided us the opportunity to even produce intercontinental missiles," he said.

"Unlike the military policies of other countries in the region and major powers in the world, our military doctrine is not after an escalation of threats in the region or the world," Baeidinejad said.

He noted that Iran's military power is aimed at neutralizing enemy threats, and is defined "within the framework of the defensive doctrine."

The high-ranking diplomat further said that Iran's enemies are "seeking to pit military elements of the country's security against its economic elements" by making the country's defense progress costly.

"Therefore, against the will of the enemy, we should make efforts to progress the two parts and make them fit well together."

Baeidinejad, who was addressing a gathering of IRGC experts, said the "unparalleled" experiences of the IRGC in various fields of security have made it distinct from other countries' armed forces.

"The IRGC, as the backbone of the country's military security since the Islamic Revolution [in 1979] and the Iraqi-imposed war on Iran and as a historical necessity for the continued existence of the country, has had a matchless role in ensuring the security of the country," he said.

In recent years, Iran has made great achievements in its defense sector and reached self-sufficiency in producing essential military equipment and systems.

The Islamic Republic has repeatedly assured other nations, especially regional neighbors, that its military might poses no threat to other countries, stating that its defense doctrine is merely based on deterrence.

Iranian police forces killed

In a separate development, three Iranian police forces were killed in an attack carried out by armed gangs in the southeastern part of the country.

The forces lost their lives on Tuesday after armed gangs launched a raid on a police checkpoint in the town of Khash in Sistan-and-Baluchestan Province, which borders Pakistan.

"Efforts are continuing to arrest the armed gangs," provincial police chief Brigadier General Hossein Rahimi said on Wednesday.

http://www.presstv.com/Detail/2016/04/27/462806/Iran-Baeidinejad-missile-IRGC/

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Tasnim News Agency – Tehran, Iran

Iran's President Pledges Push to Recover Money Seized by US

April 28, 2016

TEHRAN (Tasnim) – Iranian President Hassan Rouhani on Thursday said his administration will spare no effort to get back the Central Bank of Iran's assets that the US has recently seized under an "illegal" court ruling.

The president held the US government accountable for violating the rights of the Iranian nation and government, after Washington's recent decision to seize nearly $2 billion of the Central Bank of Iran's assets on baseless charges of Tehran's role in a bombing that killed US Marines in Lebanon more than 30 years ago.

Iran's chief executive underscored that the financial sources belonging to the central banks of countries should be immune from seizure, stressing that any ruling issued by a foreign court on those assets is "definitely illegal".

Pledging efforts to return Iran's money, President Rouhani said the cabinet has set up a task force to address the issue and let people know about the results.

On Wednesday, the president had also denounced the US move as "a blatant robbery and a major legal scandal for the US."

Last Wednesday, the US Supreme Court upheld the Congress and President Barack Obama's actions to hold Iran financially responsible for the 1983 bombing that killed 241 Marines at their barracks in the Lebanese capital of Beirut.

The ruling allows the families of the Marines and victims of other attacks that courts have linked to Iran to seize some $2 billion in assets held in New York's Citibank, belonging to the Central Bank of Iran (CBI), which has been blocked under US sanctions.

In 2012, the US Congress passed a law that specifically directed the American bank to turn over the Iranian assets to victims' families. Obama also entered the battle in an effort to force the payments on Iran.

http://www.tasnimnews.com/en/news/2016/04/28/1060789/iran-s-president-pledges-push-to-recover-money-seized-by-us

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International Business Times – New Delhi, India

INS Arihant Likely to Be Inducted in May: Report

By Aditya Bhat

April 25, 2016

INS Arihant is more likely to be inducted into the Indian Naval fleet around the time Prime Minister Narendra Modi completes his two years in office on May 26, Business insider India reported, citing top government sources.

"The submarine has passed all deep water and other tests and is ready for induction. It is just a matter of time that its formal induction (which is closely being monitored by the Prime Minister's Office) will be announced," said the source.

Currently, the 6,000-odd tonner is undergoing sea trials and weapon and missile tests. The submarine's induction is something that will be closely watched by India's friends and adversaries.

The submarine will be a shot in the arm for the Indian Navy's fast depleting submarine fleet and will add the component of having credible nuclear deterrent against aggressors. INS Arihant will let India launch submarine-based nuclear missile with its new K-4 missiles that have 3,500 kms of operational range and shorter range missiles, like K-15 (750 kms).

This will be the first time India would showcase the world its ability to build and operate its own nuclear-powered submarine.

This yet-to-be-inducted submarine is the work of several agencies like the Defence Research and Development Organisation (DRDO), the Department of Atomic Energy (DoE) and the Submarine Design Group of the Directorate of Naval Design, in addition to participation of some private companies like Larsen & Toubro (L&T). The report noted that Russian design bureaus were also consulted in building the submarine.

Currently, India operates a Russian leased nuclear-powered submarine, INS Chakra, an Akula-class submarine, from 2012. However, this submarine does not carry any nuclear weapons and is used for training purposes.

http://www.ibtimes.co.in/ins-arihant-likely-be-inducted-may-report-676156

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The National Interest – Washington, D.C.

OPINION/The Buzz

Modern Command & Control Critical to Maintaining U.S. Nuclear Deterrence

By Constance Baroudos

April 25, 2016

According to the U.S. National Security Strategy, the potential use of nuclear weapons poses the greatest danger to U.S. security. The U.S. strategic deterrent exists to deter a nuclear attack or blackmail against the United States and its allies. If deterrence were to fail, the president would make the decision whether to launch nuclear weapons based on information provided by the Nuclear Command and Control System (NCCS), and would communicate his decision through the system. NCCS must be modernized to provide survivable and reliable support of that process.

The NCCS depends on a collection of activities, processes, and procedures performed by military commanders to communicate leadership decisions to nuclear forces. Military and commercial satellite sensors transmit and receive voice, video and data through the NCCS via land-based secure and non-secure phone lines, undersea cables, and airborne relay like the E-4B National Airborne Operations Center (NAOC) and E-6B Airborne Command Post planes. The system is utilized by stakeholders at the White House, Department of Defense, Department of State, Department of Homeland Security, and other federal agencies.

The Nuclear Command and Control (NC2) is a survivable network of communications and warning systems that ensures connectivity from the president to nuclear forces provided by NCCS personnel, procedures, facilities, equipment and communications. The five functions of NC2 include force management, planning, situation monitoring, decision making, and force direction. Included in NC2 is the Integrated Tactical Warning/Attack Assessment (ITW/AA) System that evaluates details using surveillance, correlation, and warning along with independent sources of information to ensure credible assessments of ballistic missile, space and air attacks on North America and its interests.

NC2 can be transferred to the E-4B NAOC and E-6B Airborne Command Post if fixed command centers are destroyed as a result of an attack. A NAOC aircraft is ready to launch within minutes from random basing locations, ensuring the survivability of the aircraft and the mission while the E-6B serves as an airborne command post and an aerial backup of the Global Operations Center (GOC) with two additional missions: launch Minuteman III intercontinental ballistic missiles, a standby to the land-based launch control facilities, and relay presidential nuclear control orders to Navy nuclear submarines and Air Force nuclear missiles and bombers.

The nuclear command, control, and communications system is the network that moves trusted data and advice to presidential advisors, the president, the National Military Command System, and nuclear weapons delivery platforms. It provides national leaders with situational awareness, advanced warning and command and control capabilities to ensure authorities have the maximum

amount of time to make decisions, strengthening the Air Force's ability to respond and employ forces against a target.

While the information and communication lines within NCCS are critical to the safety of the U.S. and its interests, the system needs to be modernized to ensure survivability and operate with current technology. To avoid the interruption or destruction of sensitive electronics of the system, NCCS facilities need to be built to resist the effects of a nuclear explosion and an electromagnetic pulse attack. Modern systems must also be able to operate on internet-like networks to provide survivable and reliable support, and must be protected against cyber attacks and network intrusions.

The Air Force in particular needs more money to modernize nuclear networks since they have been in place since the Cold War. Admiral Cecil D. Haney has confirmed mission success is increasingly at risk due to age and the growing complexity of the security environment. Upgrading the system will likely translate into lower costs for maintenance since new technology is less extensive to sustain. The Air Force is working towards upgrading the system to support the current intercontinental ballistic missile program as well as the future Ground-based Strategic Deterrent likely to be deployed circa 2030.

The Nuclear Command and Control System provides critical information and communication pathways to U.S. government officials, the president, and the U.S. strategic deterrent. The leader of the Free World is dependent on intelligence from NCCS to decide whether launching a nuclear weapon is the best course of action and the president will communicate his decision through the system. Since NCCS ensures crisis stability, deters attack against the U.S. and allies and maintains the safety, security, and effectiveness of the U.S. nuclear deterrent, it must be upgraded to operate with modern technology, protected against cyber attacks and network intrusions, and survive if a nuclear or electromagnetic pulse attack were to occur.

Constance Baroudos is Vice President of the Lexington Institute. Her current research interests include ballistic-missile defense, nuclear strategy, European security, and the Greek financial crisis.

http://nationalinterest.org/blog/the-buzz/modern-command-control-critical-maintaining-us-nuclear-15918

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38 North.org – Baltimore, MD

OPINION/Analysis

A New Submarine-Launched Ballistic Missile for North Korea

By John Schilling
25 April 2016

Summary

North Korea has revealed images of a submarine-launched ballistic missile test indicating that it has abandoned the liquid-fuel design that has consistently failed in the past and switched to a more robust solid-propellant system that will have a better chance of actually working in an operational environment. The new design is still in the earliest stages of testing, and much work, including development of a full-scale motor, needs to be done. Nevertheless, the simpler design is likely to be

less troublesome to develop and could be ready by 2020. The solid-propellant missile would have reduced performance, with a range of 900 km compared to 1600 km for a liquid-propellant version, but is still likely to meet North Korean requirement to pose a challenging threat to US allied defenses, primarily in Northeast Asia.

The New SLBM Test

On April 23, North Korea tested a submarine-launched ballistic missile (SLBM) for probably the fifth time and shown us pictures for the third time. They're clearly learning from their mistakes. Unfortunately, part of what they are learning is to carefully frame the pictures they release so that we can't be sure what they might have been hiding. The last time the North showed the world an SLBM test, it accidentally let slip a few frames of video that suggested the test was from a submerged barge rather than a submarine, and a few more showing that the missile had exploded shortly after launch. Pyongyang then made a clumsy cut to stock footage of a completely different missile flying into the heavens. This time, the pictures show what seems to have been a successful launch, but without enough detail to verify more than a few basic facts.

The US Strategic Command has confirmed that it detected a launch on April 23, with South Korean sources indicating that the missile had achieved a range of only 30 km. If all three governments say the missile was launched, we can conclude that a missile was launched. Almost certainly the US would detect and track such a launch by satellite, and it is possible that the South Korean Navy would have had a ship in place to track it by radar. But what are we to make of the short range?

In order to fly even 30 km, a ballistic missile has to not only launch successfully but accelerate well past the speed of sound. For a single-stage missile, those are the hard parts—once accomplished, the safe bet is that the missile will continue to accelerate until it runs out of fuel, and coast on a ballistic arc to its maximum range. There's still the matter of arranging for the warhead to come down intact and close to the intended target, which isn't trivial. But if the missile flew 30 km, there is a good chance it was only carrying fuel for 30 km. To be fair, after four failed test launches, one can understand the test crew not wanting to have a full 10 to 20 tons of rocket fuel falling on their heads, expensive barges or submarines.

Looking at the pictures we have, in last year's test, the exhaust plume emerges from the nozzle in a narrow and almost translucent state that only 2 to 3 meters downstream develops into the classic yellow-orange streak of fire. The plume never expands much wider than the missile's body, and dissipates about 20 meters downstream. This is a classic liquid-rocket plume, probably from an engine burning kerosene, and from the size, very likely North Korea's Nodong engine.

The most recent test shows an almost incandescent white plume emerging fully-formed from the missile's base, expanding significantly, and ultimately leaving a trail of light grey smoke. This looks like the same missile, but they clearly are not the same engines. It is very much like a classic solid rocket motor exhaust plume. And guess what? Just last month, North Korea showed the world a ground test of a solid-fuel rocket motor. Note the similar shape and color of the plume.

The motor from last month's test, about 1.25 meters in diameter and 3 meters long, is too small for this missile. The KN-11 SLBM is 1.5 meters in diameter and a bit over 9 meters long, probably weighing almost 15 tonnes. This motor, as far as we know, the largest solid-fuel rocket motor North Korea has ever built, would probably get the KN-11 into the air, but it wouldn't get it very far. A quick calculation suggests that such a combination would have a maximum range of about 30 km.

So why the switch, and what is the point of testing a missile with such a short range? To begin with, let's note that the original configuration with the Nodong engine was perhaps the worst possible way to build an SLBM. It is what North Korea had when they began this program. If the North Koreans had kept at it, they would have probably found a way to make it work. The Russians,

eventually made something similar work back in the 1960s, and we know the North Koreans hired some of the Russian engineers who did that. But liquid-fuel rockets and submarines are a bad mix, and the Nodong was never designed for that application.

In particular, when a missile is ejected from a submarine launch tube, any liquid propellant is going to slosh violently in the tanks, possibly with enough force to tumble the missile or rupture the tanks. And if the fuel inlet is uncovered for even an instant, the high-performance fuel pump of a typical liquid-fuel rocket will overspeed and destroy itself trying to suck air. Very likely, the rocket will explode shortly after igniting the engine. We have seen that at least once in the case of North Korea and it may have happened several other times we haven't seen.

It is possible to overcome these challenges, as the Russians did with their R-27 submarine-launched ballistic missile. There is evidence that the North Koreans obtained this technology, and maybe even surplus missiles, from Russia. Earlier this month, the North displayed footage of a ground test of what appeared to be a pair of R-27 missile engines clustered together. And the R-27 missile was almost exactly the right size to fit in the launch tubes of North Korea's GORAE-class missile submarine. So why not just use that missile the way it was meant to be used?

The obvious answer is that the last of those missiles were built over 30 years ago, and any that might have reached North Korea have probably endured some rough handling and careless storage along the way. While Pyongyang has never successfully flown a missile based on the R-27., there were reports of a failed launch earlier this month, which may have been a North Korean derivative called the Musudan. So, even if the North Koreans can make the engines work in a test stand, there's still a lot of engineering to be done before the missiles can fly. There may also be a limited supply of ex-Soviet hardware to work with. And Kim Jong Un may want to show his submarine launching missiles this year, not 5 or 10 years from now.

Which brings us to what sensible engineers have been doing for years—if you want to launch ballistic missiles from submarines, it is almost certainly best to use solid-propellant motors. And not just because of the propellant slosh problem. Storable liquid rocket propellants are intensely corrosive, and if they leak, the fumes are extremely toxic—not a good combination in an enclosed space. Only the Russians ever made liquids work in that context and even they are now using solid propellant on their latest submarine-launched missiles.

North Korea presumably started down the path of making liquid-propellant submarine-launched ballistic missiles because, at the time, it couldn't make solid-propellant motors big enough for the job but it did have Russian technical expertise in liquid-propellant missiles. But the North hasn't had much success with the liquid-propellant option, and over in another corner of the DRPK's arms industry, other scientists seem to have been making real progress in solid-fuel motors. So the North made the sensible engineering decision to cut its losses, stop trying to do things the hard way and go back to the drawing board with a new propulsion system, if not an entirely new missile.

What does this mean in terms of capabilities? First, if the North is switching from liquid to solid propellant, the missile is pretty entirely new even if it looks the same from the outside. Therefore, much of the progress the North has made so far will have been wasted effort. And second, the North Koreans probably still don't have a motor that is really suitable for this missile. But they have likely already been working towards such a motor, because the one tested last month was clearly meant to be part of a two-stage system. So North Korea will lose some ground redesigning the missile, and may have to wait a year or two for a full-sized motor. But if it is already at the point of using the small motor to test the launch system, Pyongyang will probably be able to catch up pretty quickly. Last time I looked at North Korea's SLBM program, I estimated they might have an operational

system by 2020. If they've gone back to the drawing board, but settled on a simpler configuration and are already in early testing, that's probably still a reasonable estimate.

In terms of performance, they probably will lose a bit. Liquid-propellant rocket engines, when they work, are lighter and more efficient than solids. And the KN-11 is probably not long enough to incorporate a second stage to make up the lost performance. In short, a liquid-propellant KN-11 missile would have probably flown 1600 km with a 650 kg warhead. A single-stage solid-propellant version will probably be good for only 900 km.

This range is still enough to reach all of South Korea and parts of Japan from North Korean territorial waters. If the boat ventures even a little ways into the Sea of Japan, it can reach targets anywhere in Japan. And the ability of North Korea's submarine force to reach targets further afield has always depended on the ability of the submarines to reach the open sea, not on the range of the missiles. If a North Korean submarine can escape the Sea of Japan and come within 1600 km of Guam, or Hawaii, it can almost certainly cover an extra 700 km.

As with some of the other new technologies and systems North Korea has been introducing, a solid-propellant KN-11 SLBM is more likely to work reliably in an operational environment. Today, North Korea has an experimental testbed that reliably launched to a range of 30 km, maybe from a submarine or a submerged barge. We don't know. But it is increasingly clear a real, albeit limited, submarine missile threat from North Korea will probably emerge by the year 2020.

http://38north.org/2016/04/jschilling042516/

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The National Interest – Washington, D.C.

OPINION/Feature

These Russian Nukes Are Better Than America's

Moscow's new missiles leave Washington's in the dust.

By Leonid Nersisyan

April 25, 2016

U.S.-Russia relations (as well as Russia's relations with NATO) have reached a dangerously low point over the last two years—by far their lowest point since the Cold War. As a result, the issue of nuclear weapons has again come to the fore. It has repeatedly been stated, in extremely serious declarations, that both parties are rehearsing nuclear strikes against each other. For example, NATO Secretary General Jens Stoltenberg recently released his annual report, which claims Russia's air force conducted a training mission in 2013 that was actually a "simulated nuclear attack" on Sweden. The report also revealed that this mission involved Tu-22M3 Backfire long-range supersonic bombers, under cover of Su-27 fighters. Meanwhile, NATO member Turkey is just a few steps from war with Russia, which does not make the situation any simpler.

In this context it is instructive to evaluate the state of nuclear forces in both the United States and Russia. How is this situation affecting the strategic balance, and dissuading the parties from starting a conflict? And what are the prospects for these two superpowers' development of nuclear forces?

Both Parties Are Committed to the New Start Treaty

The New Start Treaty, signed on April 8, 2010, by Presidents Obama and Medvedev, reduces each country's number of nuclear warheads to 1,550. The number of deployed intercontinental ballistic

missiles (ICBMs) and heavy strategic bombers is limited to seven hundred. According to data published by the U.S. Department of State on April 1, both parties are at or near the stated figures. The United States possesses 741 deployed launchers equipped with 1,481 nuclear warheads, while Russia possesses 521 launchers equipped with 1,735 nuclear warheads. The difference is insignificant, and does not affect the strategic balance. Russia has fewer launchers at the moment, but this disparity is due to the fact that ICBMs that carry MIRVs (multiple independently targetable reentry vehicles) have a wider range of application—one ICBM can carry up to ten warheads.

U.S. Land-Based ICBMs Are Stuck in the 1970s

The only land-based ICBM in service with the United Stated is the LGM-30G Minuteman III. Each missile carries one W87 warhead with a capacity of up to three hundred kilotons (though it can carry up to three warheads). The last missile was produced back in 1978, meaning that the "youngest" is thirty-eight years old. The missiles have been upgraded many times, and are intended to be used until 2030.

The United States' new ICBM system, the GBSD (Ground-Based Strategic Deterrent), appears to be at a stalemate in the discussion phase. The U.S. Air Force is requesting $62.3 billion for the development and the production of new missiles, and hopes to receive $113.9 million in 2017. However, the White House does not support this request. In fact, many are opposed to this idea. The actual development was moved up a year, and the prospects may depend on the outcome of the 2016 presidential election.

It is worth noting that the U.S. government is going to spend an astonishing amount of money on nuclear weapons: around $348 billion by 2024, $26 billion of which is intended for ICBMs. And $26 billion is not enough for the GBSD. Actual costs may be higher, given that it has been a long time since the United States produced new land-based ICBMs. The latest missile, the LGM118A Peacekeeper, was deployed in 1986, but all fifty of them were removed from combat duty on a unilateral basis by 2005—and it is safe to say that the LGM118A Peacekeeper was an improvement in comparison with the Minuteman III, because the Peacekeeper could carry up to ten warheads. Despite the failure of the Start II Treaty, which banned the use of MIRVs, the United States gave up MIRVs on its own. Its credibility was lost because of the high price, and the scandal in which it was revealed that the missiles were lacking AIRS guidance systems for almost four years (1984–88). On top of that, the missile manufacturer tried to hide the delay in delivery—all while the Cold War was about to come to an end.

Russian Land-Based ICBMs: Emerging Missile Defense Technologies

Russia possesses a wide range of land-based ICBMs at the moment, including mobile launcher vehicles. In 2015, the Strategic Missile Troops of the Russian Federation (RVSN RF) acquired twenty-four new RS-24 Yars units (NATO reporting name: SS-27 Mod 2), in both silo-based and mobile versions. This missile can carry up three or four independently targetable warheads capable of penetrating missile-defense systems. It is safe to assume that that the volume of delivery in 2016 will be at least equal to the 2015 level. Russia will be able to replace the Topol missile (essentially equivalent to the Minuteman III) by 2020, with the newest missiles, which are specifically designed to penetrate enemy missile-defense systems.

Russia also possesses heavy land-based, liquid-fuelled ICBMs. The R-36M2 Voevoda (NATO reporting name: SS-18 Mod 5, Satan), which has been in service since 1988, is very well known. It can carry up to ten warheads with a capacity of up to 750 kilotons each. This year the test will be conducted on the RS-28 (also referred to as "Sarmat"), the newest development intended to replace

the Satan in 2020 and fully equipped to defeat missile defense systems. First of all, it is expected that the missile will have the ability to place the warhead in a suborbital trajectory (shorter than the circular orbit that is off-limits under the international agreement) and strike from literally anywhere, even from the South Pole. It forces the suspected enemy to build an integrated missile-defense system, which is extremely expensive, even for the United States. Moreover, the warheads will enter the atmosphere at hypersonic speed and move along a larger trajectory, maneuvering at a speed of 7 to 7.5 kilometers per second. Time of pre-launch preparation of the missile will be kept to a minimum: less than one minute after receiving the order.

Russia also has the mysterious RS-26 Rubezh. Not much information is available, but apparently it is a modification of the PS-24 Yars, with the ability to strike at intercontinental and medium range. Its minimum firing range is reportedly two thousand kilometers, which is enough to defeat the American missile-defense system in Europe. The United States opposes it, on the grounds that deploying the RS-26 is a violation of the Intermediate-Range Nuclear Forces Treaty. But this claim does not stand up to criticism: the RS-26's maximum firing range exceeds six thousand kilometers, which means that it is in fact an ICBM, not an IRBM.

Given the evidence, the United States lags far behind Russia in the development of land-based ICBMs. The United States has one, to be fair very outmoded, ICBM: the Minuteman III, capable of carrying only one warhead, and the prospects of developing a replacement are very indistinct. In Russia, the situation could not be more different. Land-based ICBMs are being renewed on a regular basis—in fact, the process of developing new missiles never really ends. Each new ICBM is designed to penetrate missile-defense systems, which makes the EuroPRO project and Ground-Based Midcourse Defense (the U.S. antiballistic system for intercepting incoming warheads) ineffective against Russia in the foreseeable future.

The next article in this series will discuss the balance of the submarine and bomber fleets of the United States and Russia. The final piece will draw conclusions based on the information that we have gathered.

Leonid Nersisyan is a military columnist for the REGNUM information agency, Moscow, Russia.

http://nationalinterest.org/feature/these-russian-nukes-are-better-americas-15926?page=show

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Nuclear Deterrence: Still Relevant Against Russia

(From the National Interest)

By Constance Baroudos, M.A.

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According to a new Gallup poll 18 percent of Americans view Russia as the top threat to the United States. This indicates that Russian President Vladimir Putin's aggressiveness in Ukraine has begun to scare the American public. While 18 percent may not seem like a significant portion of the population, there are plenty more reasons why citizens should view Moscow as a threat that underscores the need to enhance U.S. missile defenses and modernize the nuclear arsenal.

In 2000, Russia did away with its "no first use" nuclear weapons policy and added the option of "de-escalatory" nuclear strikes, placing these dangerous weapons at the center of its military doctrine.

De-escalatory nuclear strikes allow Russia to respond with a limited nuclear strike if confronted with a large-scale conventional attack that exceeds its defense capabilities. For the Russians, this strategy deters the U.S. and its allies from becoming involved in conflicts that Moscow wishes to dominate. For the rest of the world, it increases fear that deterrence will fail – Putin could miscalculate a threat and fire nuclear weapons due to miscommunication.

International agreements do not seem to carry much weight in Moscow. The recent annexation of Ukraine violated the 1994 Budapest Memorandum in which Kiev relinquished nuclear weapons that were acquired when the Soviet Union collapsed in exchange for protection by the signatories, Russia, the U.S., and the U.K. By developing an intermediate-range cruise missile Moscow ignored a second pact, the Intermediate-Range Nuclear Forces Treaty. This agreement was signed in 1987 by the U.S. and Soviet Union and eliminated intermediate-range missiles, between 500 and 5,500 km (300-3,400 miles). General Martin E. Dempsey, chairman of the Joint Chiefs of Staff, considers this a significant military breech and the Pentagon is considering re-deployment of nuclear cruise missiles in Europe among other options as a response.

Russia continues to modernize its nuclear triad of intercontinental ballistic missiles (ICBMs), bombers, and ballistic-missile submarines in spite of economic troubles at home. The Kremlin is updating its bomber fleet to include the capability of a new long-range, nuclear-armed cruise missile as well. A fresh generation of submarines will soon enter service and a new road-mobile ICBM is in development capable of carrying warheads with multiple independently-targetable reentry vehicles – both intended to penetrate enemy missile defenses. Road-mobile ICBMs are unsettling because they can be fired from any location, making it tougher for the U.S. to preempt.

Russian Foreign Minister Sergei Lavrov has stressed Russia has the right to place nuclear weapons in Crimea since it has become a part of a state that possesses such weapons. President Putin also announced in August 2014, "I think no one is thinking of unleashing a large-scale conflict with Russia. I want to remind you that Russia is one of the leading nuclear powers." In October 2014, Putin told the world to "remember what discord between large nuclear powers can do to strategic stability." Furthermore, General Nikolai Makarov, Russia's senior military commander in 2012, threatened NATO members who host anti-missile defense systems that "a decision to use destructive force preemptively will be taken if the situation worsens."

Some opponents claim that nuclear weapons are associated with outdated Cold War thinking and are irrelevant to contemporary politics, but they are mistaken. Nuclear weapons remain crucial to current affairs, particularly when a country that has over 2,000 nuclear weapons uses them rhetorically to gain advantage. If the U.S. were to eliminate its entire nuclear arsenal, armed states like Russia would utilize nuclear stockpiles as leverage to coerce or attack the U.S. and its allies. The best way to complicate the calculus of Russia (or that of any rogue nation that desires to launch a nuclear attack) is by boosting missile defenses of the U.S. homeland and maintaining an assured second-strike capability.

If deterrence were to fail, the U.S has no protection in place to protect its homeland from a large missile attack. The Ground-based Midcourse Defense (GMD) deployed on the West Coast can protect against a limited number of warheads, but that system should be the first step to developing a more robust missile defense with supplementary interceptors and additional locations to allow more time for identifying, tracking and intercepting incoming threats. Completing the European Phased Adaptive Approach by placing a missile defense interceptor site in Romania this year and placing an Aegis Ashore site in Poland in 2018 without delay would also protect the U.S. and its allies from nuclear launches originating in the region. Washington should continue to explore new

technologies to further amplify defenses such as the use of directed energy. Finally, America must remain committed to modernizing its nuclear forces to maintain a deadly second-strike capability that deters Russia and other rogue states from launching an attack. After all, Moscow and other nations continue to strengthen their nuclear force and capabilities, why should the U.S. passively sit back and allow the strategic balance to erode?

Not many options are left for the U.S. and NATO to develop a peaceful relationship with Russia. The West must tread carefully when confronting Moscow on issues such as the Ukrainian conflict lest it lead to the failure of deterrence and the use of nuclear weapons. But playing nicely with Russia has failed. Washington can continue to dream that Moscow will come to its senses and pursue a cooperative relationship, but the U.S. also has the obligation to guard its homeland and allies from nuclear strikes. Russia and rogue nations will be less likely to launch an attack against America and its allies with durable missile defenses and a powerful U.S. second-strike capability. Now is not the time to envision a world without nuclear weapons – now is the time to boost missile defenses and revamp the strategic nuclear force to protect our nation.

Constance Baroudos, M.A., is Vice President of the Lexington Institute. Her current research interests include ballistic-missile defense, nuclear strategy, European security, and the Greek financial crisis.

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USAF Center for Unconventional Weapons Studies

(CUWS) Outreach Journal

ABOUT THE USAF CUWS

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

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

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

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