



USAF Center for Unconventional Weapons Studies (CUWS) Outreach Journal

Issue No. 1154, 27 February 2015

Welcome to the CUWS Outreach Journal! As part of the CUWS' mission to develop Air Force, DoD, and other USG leaders to advance the state of knowledge, policy, and practices within strategic defense issues involving nuclear, biological, and chemical weapons, we offer the government and civilian community a source of contemporary discussions on unconventional weapons. These discussions include news articles, papers, and other information sources that address issues pertinent to the U.S. national security community. It is our hope that this information resource will help enhance the overall awareness of these important national security issues and lead to the further discussion of options for dealing with the potential use of unconventional weapons. **All of our past journals are now available at http://cpc.au.af.mil/au_outreach.aspx.**

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Feature Item: *"Details of an Underground Top-Secret Site Currently Used By the Iranian Regime for Research and Development with Advanced Centrifuges for Uranium Enrichment"*. The report is authored and published by the

National Council of Resistance of Iran (NCRI); Tuesday, February 24, 2015, 10 pages.

<http://freebeacon.com/wp-content/uploads/2015/02/NCRI-REVEALS-LAVIZAN3-24February2015-Final.pdf>

"Since 2008, the Iranian regime has engaged in research and uranium enrichment with advanced IR-2m, IR-3 and IR-4 centrifuges under the cover of an Intelligence Ministry center."

NCRI claims the report "information is the result of a decade-long, detailed, risky and complex effort by the network of the NCRI's main component the Mujahedin-e (MEK) inside Iran."

"The MEK has obtained this intelligence from highly placed sources within the Iranian regime as well as those involved in the nuclear weapons projects. The process of vetting and corroborating this information involves multiple sources, acting independent of one another over a span of many years. The vetting and verification process has just been completed enabling us to reveal this information now."

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The Daily Mail.com – London, U.K.

Cold War-Era B-52 Bomber Resurrected from Air Force's Desert 'Boneyard' to Fly again after Seven Years on the Scrapheap

- *Bomber, which first saw service in 1962, flew again earlier this month*
- *Aircraft, nicknamed Ghost Rider, revived to replace plane damaged in fire*
- *Flew around 1,000 miles from Tucson, Arizona, to Shreveport, Louisiana*
- *Will undergo further restoration before rejoining 76-strong B-52 fleet*
- *Bombers can deliver 70,000lbs of conventional and nuclear weapons*

By Kieran Corcoran for Dailymail.com
21 February 2015

An enormous Cold War-era bomber which first flew in 1962 has been resurrected from the Air Force's scrap heap to serve the nation once more.

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The B-52, nicknamed Ghost Rider, was mothballed seven years ago at the Davis-Monthan Air Force Base in Tucson, Arizona - the so-called boneyard where decommissioned planes are kept in storage.

It took to the skies once more on February 13 after months of painstaking restoration, which saw damaged parts such as the fuel lines and hydraulic steering systems replaced to make her airworthy once more.

The hot, dry conditions in the desert mostly helps preserve the aircraft, but also had the effect of bleaching Ghost Rider's grey hull to an almost white white.

She was flown from Tucson to another base in Shreveport, Louisiana, where it will be tested and receive further repairs before rejoining the fleet.

When fully functional, Ghost Rider will be capable of unleashing 70,000lbs of weapons, conventional or nuclear, almost anywhere on the planet.

The plane, which will be one of 76 kept flying the the Air Force, has a range of 8,000 miles on one fuel tank, and can travel 650mph at altitudes as high as 50,000ft.

However, for its first flight since being decommissioned in 2008, Ghost Rider was limited to 288mph and did not rise above 23,000ft. It also kept its landing gear down the whole way.

Air Force chiefs say they waited until after the flight had ended to announce it due to safety concerns.

In a published report on the restoration, Colonel Keith Schultz, who piloted Ghost Rider, said: 'I've been flying the B-52s since the 80s and it surprised me that after almost seven years...she cranked up just fine and we had no issues with the flight control systems.

'It took a little under three hours for the flight and we were fortunate to have had good weather the entire trip as the inertial and navigational equipment had not been installed.'

The flight was the first time a B-52 has been brought back to duty after being retired.

Ghost Rider was needed once more to replace a B-52 which caught fire and was left with a burned-out cockpit, according to the Shreveport Times.

The plane was so badly damaged that Air Force engineers decided it would be cheaper to bring back an old plane than try to fix that one.

<http://www.dailymail.co.uk/news/article-2963435/Cold-War-era-B-52-bomber-resurrected-Air-Force-s-desert-boneyard-fly-seven-years-scrapheap.html>

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The Chosun Ilbo - Seoul, South Korea
February 24, 2015

U.S. Seeks Compromise over Missile Defense System

The U.S. is trying to figure out a compromise so it can indirectly extend its controversial missile shield to South Korea.

Seoul is reluctant to permit the Terminal High-Altitude Area Defense system to be deployed here because it is chiefly aimed at containing China, an increasingly vital regional partner.

The THAAD system in question was to come with a radar with a 1,800-2,000 km range, which is capable of monitoring and intercepting Chinese ballistic missiles.

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But there is a shorter-range option. "The high-performance X-Band radar system consists of two models -- an early warning radar with a long range and a phased-array radar with a short range of less than 1,000 km," a government source said Monday.

"Apparently the U.S. Forces Korea now wants to deploy only the phased-array radar."

The effective range for a phased-array radar is about 600 km, shorter than the 900 km of the Israeli-made Green Pine early warning radar which the South Korean military uses to detect North Korean missile launches.

The two THAAD radar models use such different software that it would take considerable time and money to switch from one to the other.

"It'll be hard for Beijing to continue opposing the plan with a shorter-range radar that's permanently turned toward North Korea," the source added.

The government here officially denies that any plans for THAAD deployment exist.

It intercepts incoming ballistic missiles in the upper tier of the terminal phase, when the missile turns toward the target.

A THAAD battery consists of six launch pads, each with eight missiles, a radar, and control and communication equipment. It costs about W1 trillion (US\$1=W1,110).

http://english.chosun.com/site/data/html_dir/2015/02/24/2015022400979.html

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Hankyoreh – Seoul, South Korea

US Official Says Continental Missile Defense Has Limited Objective

Frank Rose also said that China's missile defense system should have similarly limited aims

By Park Hyun, Washington correspondent

February 24, 2015

A senior US State Department official stated that the missile defense system that has been implemented in the continental US has the limited objective of blocking ballistic missile attacks from North Korea and Iran and said that China's missile defense system should have the same limited objective.

The comments were made by Frank Rose, Assistant Secretary of State for Arms Control, Verification, and Compliance, during a speech before the Federation of American Scientists (FAS) on Feb. 20.

"Our homeland BMD [ballistic missile defense] capabilities provide for defense of the US homeland from limited ICBM attack, and are purposely not intended to affect Russia's or China's strategic deterrent. [. . .] GMD is designed to protect the US homeland only from limited ICBM attacks from states such as North Korea and Iran," Rose said.

The US currently has 30 interceptor missiles deployed in the states of Alaska and California as part of its ground-based midcourse defense (GMD) system.

Rose continued by addressing China's increasing efforts to develop its own GMD in response to American expansion of its continental missile defense network.

"Given these factors, we could potentially expect a notional Chinese equivalent to the GMD system to provide at most a limited defense of the Chinese homeland, which would not counter the US strategic deterrent and therefore would not undermine strategic stability," the official said.

Rose's remarks are believed to be aimed at discouraging China from investing in an aggressive missile defense system. China has tested such missiles on three occasions, in 2010, 2013, and 2014.

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Rose also openly criticized China's plans to develop anti-satellite (ASAT) weapons.

"On July 23, 2014, the Chinese Government conducted a non-destructive test of a missile designed to destroy satellites in low Earth orbit. However, China publicly called this ASAT test a 'land-based missile interception test.' [. . .] A previous destructive test of the Chinese system in 2007 created thousands of pieces of debris, which continue to present an ongoing danger to the space systems - as well as astronauts - of all nations, including China," he said.

"It is important that we [the US and China] have frank and open dialogue about how our nations define and view strategic stability and how we perceive our nuclear postures and policies impacting this balance. As part of these discussions, the United States is willing to discuss all issues, including missile defense, space-related issues, conventional precision strike capabilities, and nuclear weapons issues."

"One of my biggest priorities as assistant secretary is [. . .] developing a stable strategic relationship with China, while at the same time reassuring our allies," Rose said at the conclusion of his speech.

http://english.hani.co.kr/arti/english_edition/e_international/679478.html

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POLITICO – Arlington, VA

Ash Carter Warns Russia on Nukes

"U.S. responses must make clear to Russia that if it does not return to compliance, our responses will make them less secure than they are today."

By Philip Ewing

February 23, 2015

Ash Carter has quietly thrown down the gauntlet in a lingering dispute with Russia: If President Vladimir Putin continues to violate the Intermediate-Range Nuclear Forces Treaty, the U.S. could respond in kind.

"The range of options we should look at from the Defense Department could include active defenses to counter intermediate-range ground-launched cruise missiles; counter-force capabilities to prevent intermediate-range ground-launched cruise missile attacks; and countervailing strike capabilities to enhance U.S. or allied forces," Carter told senators in little-noticed written answers to follow-up questions from his confirmation hearing.

The defense secretary's bottom line: "U.S. responses must make clear to Russia that if it does not return to compliance, our responses will make them less secure than they are today."

Obama administration officials believe Russia began testing what they call its illegal cruise missile as long ago as 2008, predating the current crisis in Europe over Moscow's military incursion into Ukraine. And they have accused Russia of violating the 1987 INF treaty under which the U.S. and then-Soviet Union agreed to pull back land-based missiles deployed around Europe that many feared could escalate a crisis too quickly for either side to control.

Now, with Putin still pressing into Ukraine, some members of Congress are even more eager to push back on what they see as Russia's violations of the INF treaty. And Carter's endorsement of new "counter-force capabilities," following his cautious support for arming Ukraine's government against the Russian invaders, puts him on the hawkish side of the spectrum as President Barack Obama and his advisers weigh how to resolve the standoff.

The Russian president may have secretly been developing a new intermediate missile even as diplomats were negotiating the New Strategic Arms Reduction Treaty that the Senate approved in 2010, a breach of faith that hawks say deserves a serious answer. Carter would appear to agree. In his written answers to Sen. Jim Inhofe (R-Okla.), he said Putin had imperiled a cornerstone of global stability since the Cold War.

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“Russia’s continued disregard for its international obligations and lack of meaningful engagement on this particular issue require the United States to take actions to protect its interests and security, as well as those of its allies and partners,” Carter said. “U.S. efforts should continue to remind Russia why the United States and Russia signed this treaty in the first place and be designed to bring Russia back into verified compliance with its obligations.”

Critics in Congress, meanwhile, call the violation of the INF agreement just another broken Russian promise.

“Within the last year, Mr. Putin has flagrantly and deliberately violated the 1987 Intermediate-Range Nuclear Forces Treaty, the Budapest Memorandum, and the Minsk Protocol,” said Rep. Mike Turner (R-Ohio), long a top congressional delegate to NATO. “In order to change Putin’s calculus, President Obama must stop stalling and listen to his own secretary of defense, members of Congress in his own party and dozens of military and civilian leaders who have all recommended actions to empower the Ukrainian army so they can successfully confront the growing Russian threat.”

Another Republican, Alabama Rep. Mike Rogers, said during an Armed Services Committee hearing earlier this month that there’s no reason for Washington to continue to honor the deal.

“If we’re the only team that’s sticking to the treaty,” he complained, “then I don’t know why we’re sticking with the treaty, since they are flagrantly violating it.”

Russian leaders, however, may already feel the U.S. and Europe have violated the treaty, said Hans Kristensen, director of the Nuclear Information Project at the Federation of American Scientists. Moscow points to the U.S.-backed Aegis Ashore system, which the Obama administration is fielding in Romania this year in place of former President George W. Bush’s previously planned ballistic missile defense system.

Weapons don’t need to be nuclear to violate the INF agreement. Between Aegis Ashore and Lockheed Martin’s Joint Air-to-Surface Standoff Missile, which Poland is buying, Russia most likely feels it has both cause and cover to field a new intermediate-range missile, Kristensen said. Plus, the U.S. plans to field an extended-range JASSM, a new anti-ship missile and new ways to use weapons that exist in its stockpile.

For example, the Navy and Air Force have demonstrated their ability to launch a Raytheon-built Tomahawk cruise missile and then retarget it in flight. The pilot of an Air Force F-22 Raptor redirected one missile launched from a Navy submarine, and last month, the crew of a Navy F/A-18 Super Hornet directed a Tomahawk launched from a destroyer onto a target vessel at sea.

“This is potentially a game-changing capability for not a lot of cost,” Deputy Defense Secretary Bob Work said at a trade show in San Diego this month.

In view of these developments, Russian commanders most likely believe their work is entirely appropriate. They’re believed to want a weapon that could defeat NATO’s formidable air defenses and enable them to hit targets the way the U.S. uses its precision strike missiles and bombs, Kristensen said.

“This is a political show,” Kristensen said. “One side does something, so other side has to do it too.”

<http://www.politico.com/story/2015/02/ash-carter-russia-vladimir-putin-defense-115421.html>

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TASS Russian News Agency – Moscow, Russia

Prototype of Russia's new 100-ton Ballistic Missile to Be Built in May-June — Source

The prototype will have precisely the same size and mass as the future combat version
February 24, 2015

MOSCOW, February 24. /TASS/. A prototype of the Sarmat heavy intercontinental ballistic missile will be built in May or June, a source in the defense industry has told TASS, adding that up to 30% of components of the new generation 100-ton missile have already been manufactured at the Krasnoyarsk machine-building plant.

"The manufacturer will finalize a prototype of the Sarmat missile in two or three months' time. The first pop-up test will follow," the source said. If it is successful, no more pop-up tests (checks of the missile's individual stages) will be made.

"In 2016 the phase of flight tests will begin," he said. The purpose is to check the operation of the powder pressure accumulator and the missile's operation during liftoff and immediately after it leaves the silo.

"The prototype will have precisely the same size and mass as the future combat version. Instead of a MIRV warhead the prototype will carry a dummy. The booster will not be turned on. Sarmat will rise several dozen meters above the silo to fall nearby," the source said.

On February 21 Deputy Defense Minister Yuri Borisov said Sarmat will have several configurations. The warhead will have a mass of ten tons. Its likely flight paths towards potential targets will lie over the North or South pole.

The new-generation liquid propellant ICBM Sarmat is to replace the world's largest strategic missile R-36M2 Voyevoda, which is close to the life cycle expiration date. Earlier, strategic missile force commander Sergey Karakayev said the strategic missile Sarmat was being developed by a group of defense industry enterprises under the Makeyev State Missile Center.

<http://tass.ru/en/russia/779301>

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Sputnik International – Moscow, Russia

US Could Enhance Missile Systems to Oppose Alleged INF Violations - Experts

Experts say that the United States could bolster missile defense systems in Europe and deploy offensive capabilities in response to Russia's purported violations of the Intermediate-Range Nuclear Forces Treaty INF.

25 February 2015

WASHINGTON (Sputnik) — The United States could bolster missile defense systems in Europe and deploy offensive capabilities in response to Russia's purported violations of the Intermediate-Range Nuclear Forces Treaty (INF), experts told Sputnik.

"Options include increased SM-3 [ship-based] and Vertical Launch System-based missile defense deployments in Eastern Europe and elsewhere," International Security Fellow at the Center for Strategic and International Studies (CSIS), Thomas Karako, told Sputnik on Tuesday. "They could also include a wide variety of offensive strike forces."

Karako recommended increasing the range of rocket artillery, converting air-and sea launched missiles to land and restoring nuclear sea-launched cruise missiles, as potential offensive options.



David Karn, Professor of Government at St. John's University, told Sputnik that the United States had sea-based weapons systems that could be deployed relatively quickly to defend US assets in Europe and potentially deter Russia.

"One of the particularly valuable assets that we have come to find is the four Ohio class submarines that we've turned into guided missile cruisers, the SSGNs," Karn explained. "They've been predominately deployed to the Pacific, but in terms of being a signal of resolve and also having a capability, they would be effective."

The missile cruisers, according to Karn, carry a couple hundred vertical-launched tomahawk missiles. Although they are scheduled to be phased out within the next few years, Karn added, the subs represent one of the best readily-available options the United States has in its arsenal.

Wilson Center scholar Michael Kofman told Sputnik that the most likely option for the United States would be reinforcing missile defense systems. Even if there is not any direct linkage with Russia's specific violations, the announcement of a more robust missile defense posture in Europe would concern Moscow.

"I think the US could bolster missile defense, or possibly shift the basing for its very limited tactical nuclear arsenal that remains in Europe," Kofman said.

On Friday, a US House Armed Services committee staffer told Sputnik that Congress would actively consider Pentagon recommendations for a possible military response to Russia's alleged violations of the INF.

Beginning in July 2014, the United States announced Russia had violated the treaty by testing a prohibited ground-launched cruise missile, according to the US State Department. Russia has denied the US claim, pointing, in turn, to US INF violations.

The United States and the Soviet Union signed the INF Treaty in 1987 banning nuclear and conventional ground-based cruise and ballistic missiles with a range of 310 miles (498km) to 3417 miles (5499km).

<http://sputniknews.com/analysis/20150225/1018712562.html>

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Military Times.com – Tysons Corner, VA

Air Force Secretary: Morale, Empowerment Programs Working

The Associated Press (AP)

February 22, 2015

MINOT AIR FORCE BASE, N.D. — Programs aimed at empowering airmen and boosting morale are making headway at the Minot Air Force Base, Air Force Secretary Deborah Lee James said in her fourth visit to the base in the past year.

James and Air Force Chief of Staff Gen. Mark Welsh visited the base Friday along with other top generals for a quarterly meeting of the Nuclear Oversight Board, as the military works to address problems in the nation's nuclear force.

Board members normally meet in Washington, D.C., but got a firsthand look this week at the Minot base's B-52 bomber and intercontinental ballistic missile missions. Both are part of the nuclear force.

Then-Defense Secretary Chuck Hagel ordered a top-to-bottom overhaul of the force last November, just days before he announced his resignation. Air Force officials and Pentagon civilian leaders acknowledged in December that problems in the force run deep and wide. That occurred after a series of Associated Press stories revealing that the nuclear force is suffering from years of neglect, mismanagement and weak morale.



The Air Force instituted the Force Improvement Program last year to foster a culture of empowerment among nuclear enterprise airmen and help restore the nation's trust in the Air Force's management of the nuclear missile system.

"My impression from this trip is we're moving very much in the right direction and our airmen are telling us that there are many positive changes in the works so I'm very, very encouraged by that," James said at a news conference on Friday.

The Minot base has had its share of missteps, including a 2007 incident in which a bomber was mistakenly armed with nuclear weapons and flown across the country to a base in Louisiana.

About two years ago, the AP disclosed an internal email from the 91st Missile Wing's deputy operations group commander that decried "rot" in the ranks, including a disregard by some for safety and security rules and what he considered a lack of professional pride.

In addition to discussing the progress of its programs, James also said she wanted to touch of the dangers of sequestration, or automatic spending cuts. She said the recent Air Force budget given to Congress is about \$10 billion more than what would be available if sequestration cuts return in 2016.

<http://www.militarytimes.com/story/military/pentagon/2015/02/22/air-force-secretary-morale-empowerment-programs-working/23838929/>

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Yonhap News Agency – Seoul, South Korea

S. Korea, Russia Hold Talks on N. Korea's Nuke Issue

February 24, 2015

MOSCOW, Feb. 24 (Yonhap) -- South Korea's top nuclear envoy met with his Russian counterpart in Moscow on Tuesday to explore ways to resume the long-stalled six-party talks on ending North Korea's nuclear program, officials said.

The meeting between Hwang Joon-kook and Russian Deputy Minister of Foreign Affairs Morgulov Igor came amid a flurry of diplomatic efforts by five countries -- South Korea, the United States, China, Japan and Russia -- to reopen the denuclearization talks.

The six-party negotiations, which also involve North Korea, have been dormant since late 2008. Hwang left for Russia Monday for a three-day visit.

North Korea has demanded the resumption of the six-party talks without preconditions, but Seoul and Washington have said that the North should first demonstrate its seriousness about denuclearization.

North Korea has increasingly grown closer to Russia in recent months, apparently because its relations with China, the North's long-time ally, have been strained following its nuclear test in 2013.

Russia's top diplomat Sergey Lavrov said on Feb. 8 that Moscow's move to improve ties with North Korea will be made in a way not to hamper interests of other neighboring countries. Russia said it will do its part to lead the North to give up its nuclear program.

Hwang and his counterparts from Washington and Tokyo held talks in Japan last month and the Korean envoy also held talks with China's top nuke negotiator Wu Dawei earlier this month.



He told reporters in Beijing that the two sides have narrowed differences on conditions about restarting negotiations over the North's nuclear issue but added Pyongyang has yet to show its sincerity toward denuclearization.

<http://english.yonhapnews.co.kr/search1/2603000000.html?cid=AEN20150224006100315>

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The Korea Times – Seoul, South Korea

N. Korea's Nuclear Stockpile Could Expand to 100 Weapons: US Expert

February 25, 2015

WASHINGTON (Yonhap) — North Korea's nuclear stockpile could expand to as many as 100 weapons by 2020, a U.S. expert said Tuesday, calling for greater international attention and efforts to stop the communist regime from its nuclear rush.

Joel Wit, the chief analyst running the website 38 North at Johns Hopkins University, announced the projections during a seminar, saying Pyongyang is currently believed to have 10-16 nuclear weapons, six to eight of them based on plutonium and four to eight based on weapons-grade uranium.

Wit also said the North is believed to have miniaturized the plutonium-based weapons enough to be mounted on medium-range Nodong missiles, which can strike South Korea and Japan, and on Taepodong-2 missiles that can achieve intercontinental ranges.

He also stressed the North can significantly expand its arsenal without additional nuclear tests.

"Our fixation with when these tests happen really is not the right way to view this issue. Tests could happen. They may never happen again. If they never happen again, it doesn't mean that North Korea isn't the threat or isn't a problem," Wit said.

"Even as we are sitting here, I'm willing to bet they're producing fissile material for nuclear weapons even though they haven't conducted a test," he said.

North Korea has conducted three nuclear tests, in 2006, 2009 and 2013. The provocative nation has also carried out a series of long-range missile or rocket launches in an effort to develop nuclear-tipped intercontinental ballistic missiles capable of reaching the U.S.

Wit put forward three scenarios of the North's nuclear arsenal expansion, with the minimal growth scenario forecasting the stockpile to expand to 20 weapons and the moderate growth scenario predicting an arsenal of 50 weapons by 2020.

Should the North remain on its current trajectory, the moderate growth scenario would be the case, he said.

The worst case scenario of 100 weapons could happen when significant advances are made in weapons designs allowing the North to deploy battlefield and tactical weapons if it chooses to do so. The average stockpile yield in that case could increase to 20 or more kilotons, with an increasing number having yields of 50 kilotons, he said.

In addition, a one stage thermonuclear device with a yield of 100 kilotons can be tested, he said.

Nuclear proliferation is also a key concern, he said.

"If their stockpile grows, both nuclear and missiles, the possibility is definitely going to increase that know-how and technology may go abroad for the right price," he said.

The expert called for the U.S., South Korea and Japan to "wake up" and focus on efforts to cope with the North's increasing nuclear stockpile. Wit said in particular that South Korea appears to be putting too much emphasis on preparations for unification.

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"Why does anyone think that a North Korea with 50 to 100 nuclear weapons is going to be interested in reunification with South Korea on any terms but its own? It's just not going to happen. So we need to purge our policies of fantasies and focus on reality," he said.

Meanwhile, the U.S. think tank Heritage Foundation said it also believes the North "has likely already achieved warhead miniaturization, the ability to place nuclear weapons on its medium-range missiles, and an ability to reach the continental United States with a missile."

The assessment was included in the foundation's "2015 Index of U.S. Military Strength" report.

"Enough information is available to conclude that North Korea has likely already achieved the ability to deliver nuclear weapons by means of its Nodong medium-range missile," the report said, adding that Pyongyang has pursued nuclear and missile programs for decades and could have won cooperation from Pakistan and Iran.

As to the North's missile capabilities, the report said the country has deployed about 800 Scud short-range ballistic missiles, 300 Nodong medium-range missiles and 50 Musudan intermediate-range ballistic missiles.

"Pyongyang continues its development of the Taepo-dong series of ICBMs, at least some of which have a range sufficient to hit parts of the U.S.," the report said.

<http://www.koreatimesus.com/n-koreas-nuclear-stockpile-could-expand-to-100-weapons-us-expert/>

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The Korea Herald – Seoul, South Korea

N. Korea's Possible Nuke Test Forecast to Be More Powerful: Seoul

February 25, 2015

North Korea has continued high-explosive detonation tests and its possible nuclear test is forecast to be much more powerful both in scale and yield than previous ones, Seoul's intelligence authorities said Wednesday.

"North Korea has been carrying out high-explosive tests at a test site in Pyongyang to secure technology for weapons miniaturization and stronger explosive power," an official said, requesting anonymity.

"Should the North conduct a fourth round of nuclear test, its explosion would have a yield of at least 10 to 15 kilotons with a larger scale compared to the previous ones," he added.

The North's initial underground test in 2006 was measured at 3.9 on the Richter scale with a yield of less than 1 kiloton. In May 2009, Pyongyang carried out the second test that created a 4.5-magnitude tremor with a yield of 3 to 4 kilotons.

During the third and the latest test in February 2013, the figures jumped to 4.9 on scale and 6-7 kilotons, according to South Korean and the U.S. authorities.

"No unusual signs have been detected in and around its nuclear test site of Punggye-ri in North Hamkyong Province. But Pyongyang has been ready to carry out a fresh test round whenever it wants," the official noted.

The communist country has repeatedly vowed to develop its economy and nuclear arsenal in tandem under the notion that the destructive weapons programs are a deterrent against what it claims is the U.S.' hostile policy against it. Last year, it threatened to conduct a "new form" of nuclear test.

The provocative regime was also estimated to have increased its nuclear stockpile.

"North Korea has revved up efforts to secure more weapons-grade plutonium and to have the highly enriched uranium program, though the exact amounts are not known," another Seoul official said on condition of anonymity.



In its 2014 white paper, Seoul said the North is presumed to have secured some 40 kilograms of weapons-grade plutonium, "but the figure is literally nothing but a presumption," he said.

On Tuesday, Joel Wit, the chief analyst running the website 38 North at Johns Hopkins University, said Pyongyang is currently believed to have 10-16 nuclear weapons -- six to eight of them based on plutonium and four to eight based on weapons-grade uranium -- and its nuclear stockpile could expand to as many as 100 weapons by 2020. (Yonhap)

<http://www.koreaherald.com/view.php?ud=20150225000797>

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The Yonhap News Agency – Seoul, South Korea

N. Korea Yet to Miniaturize Nukes: Seoul

February 26, 2015

SEOUL, Feb. 26 (Yonhap) -- North Korea does not appear to have miniaturized nuclear warheads to fit on its ballistic missiles despite having advanced its technology to "a considerable level," Seoul's defense ministry said Thursday.

Officials and experts from South Korea and the United States have said the communist country is believed to have the technology to build nuclear-tipped missiles, though Pyongyang has yet to demonstrate the miniaturization capability.

"Despite its significant technology level, we don't think the North is capable of making such nuclear weapons," ministry spokesman Kim Min-seok said at a regular press briefing.

Touching on an analysis by U.S. expert Joel Wit that Pyongyang is currently believed to have 10-16 nuclear weapons -- six to eight of them based on plutonium and four to eight based on weapons-grade uranium, Kim said it is "simply a presumption without any evidence."

Asked about the expected timing of the North's next nuclear test, Kim said, "No such signs have been detected."

Earlier in the day, South Korea's daily Segye Times reported that the communist country has prepared to carry out the fourth detonation test in May, citing government sources.

"As we've repeatedly said, North Korea seems to be fully prepared for a test whenever it wants. But it should be determined to face a significant level of political pressure, such as sanctions from the United Nations," Kim said.

North Korea has conducted three rounds of nuclear tests so far -- in 2006, 2009 and 2013. Last year, it threatened to conduct a "new form" of nuclear test, repeatedly vowing to develop its economy and nuclear arsenal in tandem.

<http://english.yonhapnews.co.kr/news/2015/02/26/0200000000AEN20150226007000315.html?input=www.twitter.com>

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The Korea Times – Seoul, South Korea

NK Nuke Test likely in October

By Jun Ji-hye

February 26, 2015

North Korea is likely to conduct its fourth nuclear test in October to celebrate the 70th anniversary of the foundation of the Workers' Party, according to analysts Thursday.



"The ability to place a nuclear weapon on a missile will be a banner event for the North Korean leadership," said An Chan-il, head of the World Institute for North Korea Studies. "The Kim Jong-un regime will highly likely utilize the anniversary as a chance to show off its nuclear prowess to its people, as well as the world.

"There is a greater possibility that the test will take place around that time." He said a test will be unlikely before that, given that Kim will visit Russia in May to attend a ceremony commemorating the 70th anniversary of the Soviet Union's part in the victory over Nazi Germany in World War II.

Shin In-kyun, president of the Korea Defense Network, echoed An's view, saying, "The North is highly likely carry out a fourth test this year." Shin said the possible test will take place at a time when the United States announces a plan to use ground forces to combat IS.

"Pyongyang probably wants to utilize that timing as it knows Washington has neither the time nor energy to focus on the North and the Islamic State's threat," he said.

Shin also noted the fourth test will have more destructive power than the third.

During the third test conducted on Feb. 12, 2013, seismologists here and around the world detected a seismic event with a magnitude ranging from 4.9 to 5.1 on the Richter scale.

The Ministry of National Defense at the time estimated the explosive power at 6 to 7 kilotons.

"It would be meaningless for the North to test the same power this time," he said. "And the power of the third test was considerably threatening."

The destructive power of the previous tests has consistently increased — 1 kiloton for the first test in October 2006, and 2 to 6 kilotons for the second in May 2009.

Earlier in the day, a vernacular newspaper, quoting unidentified government sources, raised another possibility of the North carrying out the test in late April or May when South Korea and the U.S. wrap up their joint military exercises — Key Resolve and Foal Eagle.

The speculation came a few days after Joel Wit, the chief analyst of 38 North which specializes in North Korea affairs, said that the secretive state could develop 100 nuclear weapons by 2020.

Ministry spokesman Kim Min-seok said Pyongyang's nuclear capability has reached the level that it can carry out a test at any time with a short period of preparation.

"Signs of such preparations are inevitably detected by satellite, and we have yet to see such signs so far," he said. "So, we cannot confirm the timing of the test."

The spokesman stressed that if the isolated state pushes for the fourth test, it will have to bear the international sanctions that will follow.

Kim Yong-hyun, a professor of North Korea Studies at Dongguk University, downplayed mounting speculation surrounding any test.

"The chance seems to be low as the fourth test will destroy Pyongyang-Beijing relations as well as Pyongyang-Moscow ties, which will not be good for the North," he said.

http://www.koreatimes.co.kr/www/news/nation/2015/02/116_174223.html

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Pravda.Ru – Moscow, Russia

Russia to Build Barguzin Rail-Mobile Missile Systems

By Vyacheslav Shpakovsky
24 February 2015

Russia's new rail-mobile missile system will be called "Barguzin." The new system will expand the line of existing missile systems of Russia and strengthen the defensive capability of our country. Missiles for the Barguzin complex will be built on the basis of the Yars ICBM.

First rail-mobile missile systems

It is hard to say, whose idea it was originally to put an artillery gun on a railway platform. However, it is well known that such weapons were used in the years of the American Civil War in 1861-1865. Later, the British used armored trains in Sudan and in the Anglo-Boer War.

The Germans used them against the French during the Franco-Prussian war. Afterwards, there was WWI and the Civil War in Russia, in which both Red and White troops used armored trains. The French, for example, during the First World War, put 520-mm howitzers on a railway platform, and it was truly an impressive weapon! However, back during those years, there were no missiles on railway platforms.

First missile-equipped armored trains were created in the USSR, when "Katyusha" launchers were mounted on several armored trains to significantly enhance their combat power.

The Germans, who created the world's first liquid-fuel ballistic missile V-2, were the first to think of a technology to launch missiles from submarines and railway platforms. There was a special project developed, according to which a missile would be mounted in one carriage, and tanks of liquid oxygen and kerosene would be placed in another carriage. A train of 20 carriages (plus one for personnel and control systems) could thus carry up to ten missiles aboard, although the Germans did not have time to materialize their plans.

Then came the arms race between the United States and the Soviet Union, when the Americans tested a rail-based system, although they never put it in service. The most impressive project called M-X (Rocket X) was also developed overseas, but the project never saw the light either, as the Americans decided that their famous nuclear triad was enough.

The essence of the project was to save their missiles from Soviet missiles. One of the options of the project was about an underground ring railway, on which a missile train was running. It would be impossible to see the missile from above, whereas the concrete roof was protecting the "ring" from a close nuclear explosion. To launch a rocket, special jacks would open the concrete roof from the inside and the rocket would rise for launch. The costly project did not have a chance to become reality. It became irrelevant after the collapse of the USSR.

In the Soviet Union, the story was developing differently. The order to design a mobile rail-based missile system (known for the Russian initials as BZHRK) with the RT-23 rocket was signed on January 13, 1969. The Soviet military assumed that the BZHRK would form the basis of a retaliation group, as the complex had increased vitality and could survive an enemy strike. The system was called BZHRK 15P961 "Molodets." Today, the system remains an exhibit at the Central Museum of the October Railway at the Varshavsky Railway Station in St. Petersburg.

During the time of "reconciliation" with the United States, the complex was eliminated. Today, however, "an armored train with missiles" does not seem to be a burden. Thus, the Russian Strategic Missile Forces (RVSN) will include not only mine and ground-based, but also rail missile systems.

Russian Strategic Missile Forces need more trains

Presently, the Russian Strategic Missile Forces have such ICBMs as Topol, Topol-M and Yars. State-of the-art Project 955 Borei-class submarines carry Bulava missiles. Topol missiles exist in mine and mobile design. The

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drawbacks of both of these forms of operation are obvious: the location of all mines is no secret, and the speed of mobile systems is not high at all. A train would be a considerable difference. At a speed of 100 km/h, a train can travel for 2,400 km a day. In addition, it would be very hard to detect a missile-equipped train among hundreds of other trains.

The "Barguzin" complex will remain in service at least before 2040. The starting weight of a new missile will not exceed 47 tonnes. The missile that will be developed on the basis of the Yars ICBM will be housed in a standard rail car. The new complex will look like a normal train with passenger and freight cars, in which all the necessary equipment will be installed.

The missiles that were used for "Molodets" complexes weighed more than 100 tons each. The cars with the launcher thus had to be equipped with special technology to distribute the weight load on nearby cars, which was, of course, problematic. The use of much lighter missile will cast all those problems aside.

As previously reported, the main element of the complex - the missile - will be developed on the basis of the Yars ICBM. The railway complex will be similar to the ground-based Yars, albeit with many missiles. If we take, for example, a 15-car train with five technical cars, Barguzin's one salvo will consist of ten missiles. A rail complex would be much cheaper than Borei submarines, even though a submarine of this class carries 16 missiles.

Today, the RS-24 Yars has three stages with the total length of about 23 meters. The starting weight is estimated at 45-49 tons. The maximum range - 11,000 km. Details of combat equipment are not available.

However, we know that the RS-24 rocket carries MIRV warheads with 3-4 individually guided combat blocks. That is, in the final stage, it divides into several combat units, including sham parts, with each of them flying to their targets.

The use of the extensive network of Russian railways makes such projects strategically mobile, as a missile train can be redeployed where necessary very quickly.

http://english.pravda.ru/russia/politics/24-02-2015/129887-russia_barguzin-0/

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The Times of Israel – Jerusalem, Israel

Arab Nations Said Deeply Worried by Iran Nuke Deal

Leaders of Egypt, Saudi Arabia, Qatar and UAE join Israel in conveying concerns to US over emerging accord with Tehran, Wall Street Journal reports

By Times of Israel staff
February 21, 2015

Arab nations have joined Israel in expressing concern over the emerging details of a US-led international nuclear deal with Iran, indicating in private talks with US officials that they are worried about the apparent terms of the agreement, the Wall Street Journal reported Saturday.

Though Arab officials have been careful not to side with Israel in their stated positions, their worries over the possibility of a nuclear-armed Tehran are in fact similar to those of Jerusalem, and their attitudes towards the current state of nuclear talks between Tehran and Western powers are similarly pessimistic, according to the report.

Leaders of Sunni states such as Egypt, Qatar, the United Arab Emirates and Saudi Arabia fear a bad deal with Tehran would allow it, with the removal of sanctions, to become a nuclear threshold state, the WSJ reported. They say it could also lead to a nuclear arms race in the region.

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“At this stage, we prefer a collapse of the diplomatic process to a bad deal,” an official from an unnamed Arab nation told the paper.

Arab officials have also reportedly held discussions with the US over the possibility of Washington placing their countries under its “nuclear umbrella” — a guarantee to take military, even nuclear, action to protect an allied state under certain circumstances.

The WSJ report came amid news that US President Barack Obama will meet next week with the leader of Qatar, Emir Sheikh Tamim bin Hamad Al Thani, to discuss shared concerns over stability and prosperity in the Middle East.

Obama, meanwhile, has refused to meet with Israeli Prime Minister Benjamin Netanyahu when he visits Washington in early March, citing the trip’s proximity to Israel’s March 17 elections. Netanyahu is to speak to

Congress against what he says is an imminent deal, pushed by US-led negotiators, that could legitimize Iran as a nuclear threshold state.

Netanyahu said Friday that a UN report critical of Iran’s evasiveness over its nuclear program was further proof that the international community should reconsider the direction of its negotiations with Tehran.

“The IAEA (International Atomic Energy Agency) report again demonstrates that Iran refuses to come clean to the international community about its preparations for producing nuclear weapons,” Netanyahu said. World powers should not be “wooing Iran for its agreement” to a deal that would enable it to continue uranium enrichment, he said.

The IAEA report stated that Tehran was being evasive and ambiguous in its dealings with the UN’s nuclear watchdog agency, preventing the organization from launching a thorough assessment of the country’s nuclear program.

The US and five other powers insist that Tehran must fully cooperate with the IAEA’s probe for any nuclear agreement that grants Iran total sanctions relief. “Iran has not provided any explanations” on the suspicions that it tried to develop nuclear weapons, according to a confidential copy of the IAEA report obtained by The Associated Press. The agency did note that Iran was honoring commitments to put temporary restraints on its atomic activities as it negotiates on the long-term nuclear deal.

Netanyahu has long been opposed to the apparent deal taking shape in talks with Iran. The prime minister believes that the Iranians are negotiating in bad faith and that world powers are walking into a bad deal which would allow Tehran to come very close to a bomb while removing all sanctions on the regime.

Netanyahu said Thursday that he knows the details of the deal being forged with Iran over its nuclear program, asking “What is there to hide?” after the US said it was withholding some information from Israel on the talks.

His remarks came a day after the Obama administration publicly acknowledged it is keeping some specifics from Israel because it fears the close US ally has leaked sensitive information to try to scuttle the talks — and will continue to do so.

“We know that Tehran knows the details of the talks. Now I tell you that Israel also knows the details of the proposed agreement,” Netanyahu said. “I think this is a bad agreement that is dangerous for the state of Israel, and not only for it.”

US State Department spokeswoman Jen Psaki on Thursday questioned Netanyahu’s claim to knowing the details of the deal. “Then the fact is that he knows more than the negotiators, in that there is no deal yet,” she said. “Obviously, if there’s a deal we’ll be explaining the deal and explaining why and how it prevents Iran from acquiring a nuclear weapon. And if that’s the case and we come to a deal, it’s hard to see how anyone wouldn’t see that’s to the benefit of the international community,” she said.



Israel views a nuclear-armed Iran as a threat to its very existence, citing Tehran's repeated calls for Israel's destruction, its long-range missile program and its support for anti-Israel terror groups like Lebanon's Hezbollah. Iran insists that its nuclear program is for purely civilian purposes.

Netanyahu's National Security Adviser Yossi Cohen is in Washington for talks with top US officials, despite the strains between the allies. On Wednesday, he met with Obama's senior Iran negotiator Wendy Sherman, and Kerry made an unscheduled stop at their session, evidently to indicate that communication between the two leaderships was still continuing at senior levels.

Iran's and America's top nuclear officials joined seven-nation talks Saturday in a move that may help resolve technical disputes standing in the way of the deal.

Technical experts for Iran and the six nations it is negotiating with have been meeting alongside senior political officials. But Saturday was the first time that Iranian Atomic Energy chief Ali Akbar Salehi and US Energy Secretary Ernest Moniz also joined in.

Western officials say the US decided to send Moniz only after Iran announced that Salehi will be coming. Still, their presence could improve chances of a deal by fast-tracking complex technical details of constraints on Iran's nuclear programs that are acceptable to Tehran.

They were expected to discuss the number of centrifuges Iran can operate to enrich uranium; how much enriched material it can stockpile; what research and development it may pursue related to enrichment, and the future of a planned heavy water reactor that could produce substantial amounts of plutonium — like enriched uranium, a potential pathway to nuclear arms.

Iranian Foreign Minister Mohammad Javad Zarif is also at the talks, with US Secretary of State John Kerry scheduled to join Sunday and Monday.

Associated Press (AP) and Agence France-Presse (AFP) contributed to this report.

<http://www.timesofisrael.com/arab-nations-said-deeply-concerned-over-nuclear-agreement/>

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Evansville Courier Press – Evansville, IN

US Warns it Is Ready to Walk away from Iran Nuclear Talks

George Jahn and Bradley Klapper, Associated Press (AP)

February 21, 2015

GENEVA — With only weeks left to the deadline to reach a first-stage nuclear deal with Iran, U.S. Secretary of State John Kerry said Saturday that "significant gaps" remained and warned that America was ready to walk away from the talks if Tehran doesn't agree to terms demonstrating that it doesn't want atomic arms.

Kerry spoke after the Iranian Atomic Energy chief Ali Akbar Salehi and U.S. Energy Secretary Ernest Moniz added their muscle to the talks for the first time to help resolve technical disputes standing in the way of an agreement meant to curb Iran's nuclear programs in exchange for sanctions relief for the Islamic Republic.

But Kerry warned against undue optimism. Salehi's and Moniz's presence is no "indication whatsoever that something is about to be decided," he said. "There are still significant gaps."

World powers and Iran have set an end of March deadline for a framework agreement, with four further months for the technical work to be ironed out. The talks have missed two previous deadlines, and President Barack Obama has said a further extension would make little sense without a basis for continuing discussions.



Kerry, who flies to Geneva Sunday from London, said there was no doubt Obama was serious. The president, he said, "is fully prepared to stop these talks if he feels that they're not being met with the kind of productive decision-making necessary to prove that a program is in fact peaceful."

If the talks fail, Obama may be unable to continue holding off Congress from passing new sanctions against Iran. That, in turn, could scuttle any further diplomatic solution to U.S.-led attempts to increase the time Tehran would need to be able to make nuclear arms. Iran denies any interest in such weapons.

Skepticism about the negotiations already is strong among congressional hardliners, Washington's closest Arab allies and Israel's Prime Minister Benjamin Netanyahu, who is expected to strongly criticize them in an address the U.S. Congress early next month.

Western officials say the U.S. decided to send Moniz only after Iran announced that Salehi was coming. They were expected to discuss the number of centrifuges Iran can operate to enrich uranium; how much enriched material it

can stockpile; what research and development it may pursue related to enrichment, and the future of a planned heavy water reactor that could produce substantial amounts of plutonium — which like enriched uranium is a potential pathway to nuclear arms.

Iranian Foreign Minister Mohammad Javad Zarif is also at the talks, and Kerry is to meet him Sunday and Monday.

For months, the negotiations have been primarily between Washington and Tehran. But Kerry insisted "there is absolutely no divergence" between the U.S. and the five other powers — Russia, China, Britain, France and Germany — over what Iran needed to agree to, "to prove that its nuclear program is going to be peaceful in the future."

http://www.courierpress.com/news/world/irannucleartalks_11660588

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Tasnim News Agency – Tehran, Iran

One-Stage Nuclear Deal Sole Option: Iran's Zarif

February 22, 2015

TEHRAN (Tasnim) – Iranian Foreign Minister Mohammad Javad Zarif reiterated that the country will agree to sign only a single-stage nuclear deal with world powers.

Iran and the Group 5+1 (Russia, China, the US, Britain, France and Germany) will finalize the text of a single agreement whenever their views are closer together, the top Iranian negotiator said.

He made it clear that "small, temporary and separate" deals are not in the interests of either side.

Zarif also underlined that resorting to sanctions as a leverage obstructs the way to the comprehensive agreement.

Iran and the Group 5+1 (also known as P5+1 and E3+3) are in talks to hammer out a final agreement to end more than a decade of impasse over Tehran's nuclear energy program.

Supreme Leader of the Islamic Revolution Ayatollah Seyed Ali Khamenei has also affirmed that any nuclear deal between Iran and world powers should be implementable, stressing that "no deal will be better than a bad one," including a two-phased agreement.

Since Friday, negotiators from Iran and the US have started a new round of bilateral talks on Tehran's nuclear energy program in Geneva at the level of deputy foreign ministers.



Zarif joined the talks on Saturday, while US Secretary of State John Kerry is also expected to arrive in Switzerland for nuclear talks.

<http://www.tasnimnews.com/english/Home/Single/661792>

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Global Times – Beijing, China

Iran to Quit Nuclear Talks if Pressures Mount: Negotiator

(Xinhua)

February 23, 2015

Iran will quit nuclear talks if the other party aimed to impose their wills on Tehran in the ongoing negotiations, the country's senior negotiator told state IRIB TV on Monday.

"If the other party wants to impose their wills at the cost of diplomatic means, we will not hesitate to leave the negotiating table," Abbas Araqchi said.

The talks should meet the interests of both Iran and the world powers, Araqchi said.

"We are determined to continue the talks with strong will unless we feel that the talks are not progressing in the interests of our country and our nation," he said.

Representatives from P5+1 group, namely the US, Britain, France, Russia, China and Germany, and Iran met in Geneva on Sunday night for fresh talks over Tehran's disputed nuclear program, a move to continue the diplomatic efforts toward reaching a long-term, comprehensive solution to the issue.

It has been over a year since Iran and the world powers agreed to come back to the negotiating table in 2013. However, wide differences have prevented the sides from reaching a final deal.

The negotiators agreed in November 2014 to extend the deadline for another seven months, aiming to reach a political framework deal by the end of March.

<http://www.globaltimes.cn/content/908522.shtml>

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Islamic Republic News Agency (IRNA) – Tehran, Iran

23 February 2015

Zarif: Some Progress Made in Parts of Nuclear Issues

Tehran, Feb 23, IRNA – Foreign Minister Mohammad Javad Zarif said on Monday that there is a long way to clinch the final deal but the two sides made progress in parts of the negotiations.

Speaking to reporters after his meeting with US Secretary of State John Kerry, he said that the two sides had a very serious, useful and constructive talks with G5+1 mainly the US secretary of state and the secretary of energy.

The two sides made headway in some issues but there is still a long way to clinch the final deal, he said.

He said that negotiations will proceed until a final deal to be struck.

Representatives of Iran and G5+1 agreed to proceed with talks next Monday.



Zarif thanked the active and useful presence of Head of the Atomic Energy Organization of Iran Ali Akbar Salehi in the meeting.

<http://www.irna.ir/en/News/81517834/>

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Sputnik International – Russian Information Agency

Next Iran, P5+1 Talks to Take Place in Lausanne, Switzerland March 2

Source familiar with the subject said that the next meeting of the P5+1 group with Iranian delegation on Tehran's nuclear program will take place on March 2 in Lausanne, Switzerland.

23 February 2015

GENEVA (Sputnik) – The next meeting of the P5+1 group with the Iranian delegation on Tehran's nuclear program will take place on March 2 in Lausanne, Switzerland, a source familiar with the subject told RIA Novosti Monday.

"The meeting will take place in Lausanne next Monday on the political director level," the source said.

On Sunday, delegations from Iran and the P5+1 group, comprising the United States, Russia, China, France and Germany convened in Geneva Sunday to hold discussions on Tehran's nuclear program.

The head of Iranian delegation Deputy Foreign Minister Abbas Araghchi said that the negotiations were constructive, but the parties are still far from reaching an agreement.

The UN Security Council and a number of countries have accused Iran of trying to develop nuclear weapons. Tehran has repeatedly rejected those claims, stating that its uranium enrichment program is for peaceful purposes only.

Iran and the P5+1 group have held several rounds of talks on Tehran's nuclear program in recent years with limited results. A long-term agreement has to be reached by July 2015.

<http://sputniknews.com/politics/20150223/1018651699.html>

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Business Insider (Australian Edition) – Sydney, Australia

The US Is Reportedly Willing to Make another Huge Nuclear Concession to Iran

By Armin Rosen

February 24, 2015

The outline of a landmark nuclear deal between a US-led group of countries and Iran is coming into focus.

According to the AP, Iran will be able to keep 6,500 uranium enrichment centrifuges under a final agreement. This would allow Iran to achieve one nuclear weapon's worth of uranium enrichment in between six months and a year (depending on the amount and enrichment level of low-enriched uranium the country's allowed to have hand), and to keep as many as 5,500 more centrifuges than the minimum needed to run a "demonstration cascade" that would allow Iranian scientists to maintain a basic mastery of the nuclear fuel cycle.

Even before the AP article was published on February 22, the 6,500 number had been reported in Israeli media and partly corroborated by the New York Times. But the AP includes news of a second and equally significant US concession.

The nuclear deal will apparently include a 15-year sunset, with certain restrictions on Iranian uranium enrichment lifted after 10 years and Iran permitted to keep somewhere in the neighbourhood as 10,000 centrifuges at the

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moment the deal expires. As the AP explains, the US had initially wanted a 20-year deal going into the latest round of talks, which means that the full, as-yet unknown set of restrictions will be in place for anywhere between one quarter one half the amount of time American negotiators were aiming for.

Why are US negotiators willing to stomach this concession? While a 10-15 year sunset is far from ideal, it at least freezes the amount of uranium Iran can possess and produce for a decade or more. It would keep Iran under a strict inspection regime and give the US and its allies a long lead-time to build support for another round of sanctions if Tehran evinced plans to further develop its nuclear program or otherwise buck the international system.

There's another reason for accepting a short deal. As David Ignatius explained in a February 19th column in the Washington Post, the Israelis believe that the US is willing to accept a shorter agreement because the administration "wants to tie Iran's hands for a decade until a new generation takes power there."

Supreme Leader Ali Khamenei has been ill recently. The Islamic Republic's founding generation is dying out, and US negotiators hope that Iran will be a much different place in 10-15 years, with a government willing to draw down the more threatening aspects of its program even after a nuclear deal has expired. It's probably also hoped that a nuclear agreement and Iran's resulting reintegration with the international mainstream may even push the country towards this more pragmatic course.

But justifications have one troubling thing in common: They both make huge assumptions about the future nature of Iran's relationship with the US and the rest of the world.

Under a short deal, the international community must re-implement sanctions if Iran decides to pocket its concessions and restart its program once the deal expires — something Tehran will be able to easily do, since the deal the AP describes would allow it to keep significant aspects of its nuclear infrastructure.

But it might be a huge leap to think that in 2030 the world will have any appetite for a second Iranian nuclear standoff, especially after economic and diplomatic ties have been fully restored for a decade or more under the preceding deal.

The current round of sanctions took substantial time and US political capital to implement. The global leaders of the future may wonder whether it's worth doing it all over again to resolve an issue that they may feel has already been settled.

A short deal might also transform Iran's nuclear calculus. When a 15 year deal expires, Tehran would be justified in figuring that it had been able to lift the international sanctions regime while being able to keep as many as 10,000 centrifuges. With sanctions gone and much of the country's nuclear infrastructure in place, the Iranian leaders of 2030 will have little incentive to negotiate a second deal, should the US consider such a deal necessary.

The sunset clause's assumptions about the Iranian regime's future moderation may be wishful as well. The Islamic Republic has vacillated between reform and retrenchment for much of the past two decades. In 1997, the reformist Mohammad Khatami was elected Iran's president. But ten years ago, the newly-elected Mahmoud Ahmadinejad made headlines for denying the Holocaust and expounding on the importance of destroying the state of Israel.

A short deal gambles on an opaque and highly compartmentalized regime transforming itself by a specific future date. This is a strange basis for an epochal diplomatic agreement in the Middle East or any other part of the world.

Finally, a short nuclear deal reflects a kind of short-term thinking that's disconcertingly out of keeping with the actual challenges of nuclear proliferation. This is partly a structural problem. Presidential administrations last between four and eight years. Nuclear weapons, however, may be with humanity for the rest of the species' existence, and once a country goes nuclear it seldom if ever crosses back over the threshold.



The ephemeral timetable of American political leadership at least makes it comprehensible that US political leaders wouldn't be approaching the Iranian nuclear issue on a 50-or 100-year scale. But there was a 26-year lag between the inauguration of Pakistan's nuclear program in 1972 and its first test of a nuclear weapon in 1998. North Korea attempted its first nuclear test in 2006, 12 years after signing the Agreed Framework with the US.

Determined nuclear proliferates understand that even long delays are meaningless so long as a capability is eventually established. The only countries that have lost their nuclear weapons have either destroyed or exported them voluntarily; once you've got the bomb, you've got it for good. And Iran, which has built illicit plutonium and a uranium programs while laboring under strict international sanctions, has been incredibly determined.

A 10-15 year sunset clause seems oblivious to some of the dangers of approaching the Iranian nuclear issue as a short-term matter that can be solved in a single go — rather than an question that could dog successive US administrations for decades or even centuries to come.

<http://www.businessinsider.com.au/the-us-is-reportedly-willing-to-make-another-huge-nuclear-concession-to-iran-2015-2>

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The Daily Star – Beirut, Lebanon

Iran Opposition Unveils 'Secret' Tehran Nuclear Site

Agence France-Presse (AFP)
February 24, 2015

Washington: An exiled Iranian opposition group Tuesday accused Tehran of running a "secret" uranium enrichment site close to Tehran, which it said violated ongoing talks with global powers on a nuclear deal.

"Despite the Iranian regime's claims that all of its enrichment activities are transparent ... it has in fact been engaged in research and development with advanced centrifuges at a secret nuclear site called Lavizan-3," said Alireza Jafarzadeh, deputy director of the National Council of Resistance of Iran(NCRI).

He said the site was hidden in a military base in the northeastern suburbs of Tehran.

He presented to reporters a series of satellite images drawn from Google Maps which he said backed "this intelligence from highly placed sources within the Iranian regime as well as those involved in the nuclear weapons projects."

The Lavizan-3 site was apparently constructed between 2004 and 2008 and has underground labs connected by a tunnel.

"Since 2008, the Iranian regime has secretly engaged in research and uranium enrichment with advanced... centrifuge machines at this site," Jafarzadeh said.

The group had shared its information with the US administration, he added.

The existence of the site was "a clear violation" of the nuclear Non-Proliferation Treaty as well as UN resolutions and an interim November 2013 deal struck with global powers gathered in the P5+1 group, he said.

Under the interim accord, Iran agreed not to allow "any new locations for enrichment" and to provide IAEA, the UN nuclear watchdog, all information about its nuclear facilities.

"It is absolutely senseless to continue the negotiations," added Jafarzadeh.

The NCRI is a political umbrella of five Iranian opposition groups, the largest of which is the People's Mujahedeen Organization of Iran, which was once banned in Europe and the United States as a terror group.



The People's Mujahedeen has long opposed the nuclear negotiations, and with the NCRI has made several important revelations of the existence of secret nuclear sites in Iran.

The so-called P5+1 group of Britain, China, France, Russia, the United States and Germany is trying to strike an accord that would prevent Tehran from developing a nuclear bomb.

In return, the West would ease sanctions imposed on Tehran over its nuclear program, which Iran insists is purely civilian in nature.

A new March 31 deadline is looming for agreement on a political framework, after two previous dates for a comprehensive deal were missed.

"Despite the Iranian regime's claims of transparency, these nuclear activities, today's intelligence, makes clear it has been continuing to lie for more than a decade," added NCRI member Soona Samsami.

<http://www.dailystar.com.lb/News/Middle-East/2015/Feb-24/288635-iran-opposition-unveils-secret-tehran-nuclear-site.ashx>

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Press TV – Tehran, Iran

MKO Claims on Underground Nuclear Site Baseless: Iran UN Mission

Wednesday, February 25, 2015

The Islamic Republic of Iran has strongly rejected allegations about the existence of an underground nuclear research center in the northern part of Tehran as claimed by the terrorist Mujahedin-e Khalq Organization (MKO).

In a Wednesday statement, Iran's Permanent Mission to the United Nations called the allegations reported by *The Washington Post* "baseless" and "fake".

"It is regrettable that the newspaper has released false and repeated claims of a terrorist group whose anti-human nature is evident to all," the Fars news agency quoted the statement as saying.

It reiterated that Iran's nuclear energy program is peaceful and the allegations by the terrorist group are made out of desperation as Tehran has adopted a logical approach towards the issue.

On Tuesday, the *Post* quoted MKO members as saying the site, referred to in the report as "Lavizan-3", has been used "since 2008 to enrich uranium".

Similar claims by MKO have previously proven false while the group continues attempts to turn the matter into a security case, said the Iran mission to the UN.

In reaction to the new allegations, US State Department spokeswoman Jen Psaki said the US officials "have no information at this time to support such a conclusion."

Tehran and the Sextet of world powers – the US, Britain, Russia, France, China, and Germany – have been engaged in nuclear negotiations in an effort to ink a high-profile political deal by the end of March and to confirm the full technical details of the accord by July 1.

Iran has so far suspended some of its enrichment program in return for certain sanctions relief.

<http://www.prestv.com/Detail/2015/02/25/399195/MKO-claims-on-nuclear-site-baseless>

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Mehr News Agency (MNA) – Tehran, Iran

Any Deal Must Remove all Sanctions: Rouhani

February 25, 2015

TEHRAN, Feb. 25 (MNA) – On the continuation of his tours to various Iranian provinces, President Hassan Rouhani started a visit to the holy city of Qom this morning.

President Rouhani arrived in Qom this morning and immediately inaugurated the construction operation of a 410-kilometer express railroad which is to link the Iranian capital of Tehran to Qom and the ancient city of Isfahan.

He further addressed a gathering of local people at the Holy Shrine of Hazrat Masoumeh (SA). Rouhani, noting the historical and prominent role of Qom in Islamic Revolution of Iran as the largest center for senior clerics, commended accompany and participation of Qom's people in all stages of Iran's history and said "Qom is the symbol of religious life and it is the thought shelter;" and he added that "Hawzah should be voice of unity, rationality."

Considering the current issues of radicalism and terrorism in name of Islam, Rouhani asserted that Islam is the religion of moderation, rather than violence, suffering, and difficulty.

Rouhani, meanwhile, stressed that government is loyal to all promises made during elections and respects and supports critics, "however, unfair, destructive criticism has no place in the country."

Referring to his government's foreign policies, President Rouhani emphasized that "our motto is the economic revival and constructive interaction with the world."

He also touched upon nuclear negotiations and said "we have participated in nuclear talks powerfully and we continue it based on logics away from all marginal issues."

Rouhani slammed illegal sanctions imposed against Iran and asserted that "sanctions are unfair and development is absolute right of people. Other side in negotiation should know that Iran will never give up with its scientific development."

"The final agreement must include removal of all unfair, illegal sanctions. Iran will not accept any humiliation, obligation or continuation of sanctions in nuclear talks," Iranian president emphasized.

Appreciating the prominent role of senior clerics and the religious center of Qom, Rouhani stated that the government is always in need of their ideas and thoughts and the support of nation.

<http://en.mehrnews.com/detail/News/106106>

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Islamic Republic News Agency (IRNA) – Tehran, Iran
25 February 2015

Najafi: IAEA Meeting Approved Transparency of Iran Nuclear Program

Tehran, Feb 25, IRNA – Iran's Representative in the International Atomic Energy Agency (IAEA) Reza Najafi said the watchdog's technical meeting on Wednesday evening approved the transparent nature of Iran's nuclear program.

He said the meeting was "useful".

According to the Iranian official, the meeting focused solely on technical issues and dedicated its time to exploring the recent report of the organization's chairman.

Najafi said the meeting acknowledged that the whole of Iran's nuclear program including installations, equipment and material were totally monitored by the IAEA experts.

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He said this proved Iran's transparency in its nuclear activities.

The Iranian official further pointed out that the meeting also reviewed the recent meeting between the IAEA Director General Yukia Amano and Iran's Foreign Minister Mohammad Javad Zarif which took place at the sideline of a security conference in Munich recently.

Najafi said the meeting stressed the need for continuation of nuclear talks between Iran and the 5+1 until the ultimate settlement of the issue.

<http://www.irna.ir/en/News/81520881/>

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Xinhua News – Beijing, China

Kerry Slams Netanyahu for Opposing Iran Nuclear Talks

(Xinhua)

February 26, 2015

WASHINGTON, Feb. 25 (Xinhua) -- Israeli Prime Minister Benjamin Netanyahu might be wrong in opposing the ongoing nuclear talks between world powers and Iran, U.S. Secretary of State John Kerry said Wednesday.

"We won't take a backseat to anybody in our commitment to the state of Israel, but he may have a judgment that just may not be correct here," Kerry said before the House Foreign Affairs Committee.

Kerry added Netanyahu "was wrong" in opposing the interim agreement on Tehran's nuclear program, which the Israeli leader called "the deal of the century" for Iran.

"He was extremely outspoken about how bad the interim agreement was...even though it has clearly stopped Iran's program," Kerry said.

The rebuke from the top U.S. diplomat came ahead of Netanyahu's speech to the U.S. Congress next week at the invitation of Republican House speaker John Boehner. Netanyahu is expected to reiterate his objections to the negotiations over Iran's nuclear program.

The White House has said President Barack Obama would not meet with the Israeli leader when he is in Washington, citing that the visit comes in too close proximity to Israeli elections.

On Tuesday, Susan Rice, Obama's national security advisor, called Netanyahu's scheduled speech "destructive" to the relationship between the U.S. and Israel.

The Boehner's decision to invite Netanyahu without consulting the White House, and Netanyahu's decision to accept, had "injected a degree of partisanship" into the relationship between the two nations, Rice said in a television interview.

Netanyahu intensified Wednesday his criticism on the U.S.-led nuclear talks with Iran, accusing the world powers of "giving up on their commitment" to stopping the Islamic Republic from getting nuclear weapons.

Ha'aretz newspaper quoted Netanyahu as saying that the six powers, the U.S., Russia, China, Britain, France and Germany, "have accepted the fact that Iran, gradually over several years, will develop the capabilities to make fissile material for many nuclear bombs."

"Maybe they can live with it, but I can't," he added.

http://news.xinhuanet.com/english/world/2015-02/26/c_134018308.htm

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The Daily Star – Beirut, Lebanon

Iran Forever Forbidden from Having Nuclear Arms: Kerry

By Agencies

February 26, 2015

WASHINGTON: Iran is “forever” banned from building a nuclear weapon under an existing international treaty, top U.S. diplomat John Kerry said Wednesday, seeking to dismiss fears that limits on its program imposed in a new deal may eventually be lifted.

“Please understand, there is no reduction [of restrictions] at any time that permits Iran to build a nuclear weapon,” Kerry told U.S. lawmakers when pressed whether a deal with Tehran would eventually allow them to develop atomic arms.

“Iran is forever forbidden from building a nuclear weapon, that is the nature of membership in the Non-Proliferation Treaty which they are a member of.”

But California Republican Rep. Ed Royce, chairman of the House Foreign Affairs Committee, told Kerry that members of the panel have serious concerns about the direction of the talks.

“I’m hearing less about dismantlement and more about the performance of Iran’s nuclear program,” Royce told Kerry. “That’s particularly disturbing when you consider that international inspectors report that Iran has still not revealed its past bomb work.”

The secretary testified in the House two days after returning to Washington from the latest round of talks in Geneva involving Iran, the U.S. and five other powers. U.S. and Iranian officials reported progress on getting to a deal that would clamp down on Tehran’s nuclear activities for at least 10 years but would then slowly ease restrictions.

Royce said the U.N.’s International Atomic Energy Agency has expressed concerns about the scope of Iranian military-related activities, including its work in designing a nuclear payload for a missile. “The IAEA inspectors have amassed over 1,000 pages which showed research, development and testing activity on technologies needed to develop a nuclear weapon,” the congressman said. “Of the 12 sets of questions that the IAEA has been seeking since 2011, Iran has answered part of one of them ... They are withholding that information.”

Kerry agreed that Royce’s questions were legitimate and that Iran must answer them if it wants to have an agreement with the U.S. and its partners on a deal to curb its nuclear program.

He said Iran has complied with all the provisions of a first-step agreement, which launched the talks. “They agreed to roll back their program,” Kerry said. “I think that’s cause for hope.”

Wednesday was Kerry’s second appearance before Congress in as many days. As he did Tuesday in the Senate, Kerry told members of the House Foreign Relations Committee that it’s inappropriate to condemn what is in an agreement before anybody knows what it is – or even if there even will be a deal.

Negotiators are rushing to try to meet a March 31 deadline for a framework agreement that would keep Tehran from being able to develop nuclear weapons.

<http://www.dailystar.com.lb/News/Middle-East/2015/Feb-26/288838-iran-forever-forbidden-from-having-nuclear-arms-kerry.ashx>

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The Hill – Washington, D.C.

Intelligence Chief Sees No Barriers to Iran Nukes

By Jesse Byrnes

February 26, 2015

Director of National Intelligence James Clapper said Thursday that Iran poses a threat to its neighbors in the Middle East and faces no barriers in producing a nuclear weapon.

"We do not know whether Iran will eventually decide to build nuclear weapons," Clapper said in the annual worldwide threat assessment delivered to the Senate Armed Services Committee.

While Iran has temporarily slowed development toward producing enriched uranium, the assessment notes that the country "does not face any insurmountable technical barriers to producing a nuclear weapon."

"We judge that Tehran would choose ballistic missiles as its preferred method of delivering nuclear weapons, if it builds them," the assessment reads.

In testimony before the Senate panel Thursday, Clapper conceded Iran is making moves on the issue.

"The Iranians have continued on their space launch vehicle program and recently put into orbit a satellite, and obviously any work that they do on missiles could conceivably go towards work on an intercontinental missile," Clapper said.

"There's no question they have the technical competence," he said, adding, "theoretically they could attempt to launch one this year."

Iran's nuclear program has been at the forefront of debate in Washington as Republicans eye the Obama administration's push for a deal over Tehran's nuclear program. U.S. officials hope to have a framework in place for the agreement by the end of March.

Some Democrats have boycotted Israeli Prime Minister Benjamin Netanyahu's speech to Congress next week in opposition to the deal. President Obama, Vice President Joe Biden and Secretary of State John Kerry will all not attend the speech.

"Do you think they have good intent in terms of what they're doing with their missile program?" Sen. Kelly Ayotte (R-N.H.) pressed Thursday.

"No, I think the huge medium-range missile force they have today that is operational I think poses a threat to the region right now. So no, it is not," Clapper said.

Regarding Iran's supreme leader, Clapper reiterated, "We know he's not made a decision to go for a nuclear weapon."

"They're closer today, and every month that goes by it seems they get closer," said Sen. Jeff Sessions (R-Ala.).

<http://thehill.com/policy/international/233960-obama-admin-intel-official-sees-no-barries-to-iran-nukes>

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Daily News and Analysis (DNA) – Mumbai, India

Pakistan's 4th Nuclear Reactor has just Become Operational: Government

The fourth nuclear reactor of Pakistan capable of producing plutonium for use in nuclear weapons has just become operational, government today informed the Lok Sabha. In a written reply in the House, Minister of State for External Affairs V K Singh said the Indian government is aware of Pakistan's nuclear reactors at Khushab.

Press Trust of India (PTI)

Wednesday, 25 February 2015

New Delhi -- The fourth nuclear reactor of Pakistan capable of producing plutonium for use in nuclear weapons has just become operational, government today informed the Lok Sabha. In a written reply in the House, Minister of State for External Affairs V K Singh said the Indian government is aware of Pakistan's nuclear reactors at Khushab.

"Government of India is aware that Pakistan is operating nuclear reactors at Khushab capable of producing plutonium for use in Pakistan's nuclear weapons. According to reports, the 4th such reactor has just become operational," he said.

Singh, however, said the government is committed to taking all necessary steps to safeguard India's interests on the basis of India's national security requirements. In reply to another question on alleged spying on Indian missions, he said government is aware of reports stating that US national security agency spied on 38 diplomatic missions of foreign countries, including the Indian Embassy in Washington, by implanting bugs and using specialised antenna.

"Government has expressed concerns over the reports of monitoring of the Indian embassy and our mission to the UN in New York by US agencies. Government has raised these concerns with the US authorities at senior levels," he said.

In reply to another question, Singh said that during the current financial year India has spent Rs 580.52 crore (till January 2015) on assistance to Afghanistan.

<http://www.dnaindia.com/world/report-pakistan-s-4th-nuclear-reactor-has-just-become-operational-government-2064196>

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The Economic Times – New Delhi, India

Major Terror Attack against India Could Trigger Nuclear War: Experts

By Press Trust of India (PTI)

26 February 2015

WASHINGTON: Pakistan may use nuclear weapons against India if the latter goes for a large scale military assault against it in retaliation for a major terror attack emanating from across the border, two top American experts have warned US lawmakers.

Given the presence of a strong government in New Delhi and the pressure on it from Indian citizens in the event of a repeat of 26/11 type terror attack, the ties between the two neighbours have greater danger of escalating towards a devastating nuclear warfare, in particular from Pakistan.

Such a dangerous scenario can only be avoided by the US working with Islamabad to ensure that there is no further large scale terror attack on India emanating from Pakistan, two top American experts - George Perkovich and Ashley Tellis - told members of the powerful Senate Armed Services Committee Subcommittee on Strategic Forces during a hearing yesterday.



"South Asia is the most likely place nuclear weapons could be detonated in the foreseeable future. This risk derives from the unusual dynamic of the India-Pakistan competition," said Perkovich, vice president for Studies Carnegie Endowment for International Peace.

"The next major terrorist attack in India, emanating from Pakistan, may trigger an Indian conventional military riposte that could in turn prompt Pakistan to use battlefield nuclear weapons to repel an Indian incursion. India, for its part, has declared that it would inflict massive retaliation in response to any nuclear use against its territory or troops," he said.

"Obviously, this threatening dynamic - whereby terrorism may prompt conventional conflict which may prompt nuclear war - challenges Indian and Pakistan policy-makers. India and Pakistan both tend to downplay or dismiss the potential for escalation, but our own history of close nuclear calls should make US officials more alert to these dangers. The US is the only outside power that could intervene diplomatically and forcefully to de-escalate a crisis," Perkovich said.

Tellis said the most useful US contribution towards preventing a Pakistani use of nuclear weapons in such a scenario -- and the Indian nuclear retribution that would result thereafter -- would be to press Pakistan to exit the terrorism business or risk being left alone (or, even worse, the object of sanctions) if a major Indian military response ensues in the aftermath of any pernicious terrorist attack.

"Other than this, there is little that the United States can do to preserve deterrence stability between two asymmetrically-sized states where the gap in power promises to become even wider tomorrow than it is today," he said.

Both the experts, who are from the Carnegie, told members of the Senate sub-committee that Pakistan today has more nuclear weapons than that of India.

<http://economictimes.indiatimes.com/news/politics-and-nation/major-terror-attack-against-india-could-trigger-nuclear-war-experts/articleshow/46382374.cms>

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The Hankyoreh – Seoul, South Korea
OPINION/Editorial

Obeying the US on THAAD Will only Hurt National Security

February 23, 2015

Once again, controversy is stirring over the question of whether South Korea will join the missile defense system that the US is initiating in Northeast Asia. The South Korean government is largely responsible for the controversy, since its ambiguous stance toward the American plan is allowing it to be dragged into the system. We urge the government to consistently and clearly express its rejection of the American plan to prevent such a misunderstanding.

US intentions were clear in remarks made in Tokyo on Feb. 20 by Anita Friedt, Principal Deputy Assistant Secretary for Nuclear and Strategic Policy at the U.S. Department of State, when she praised the Trilateral Information-Sharing Arrangement signed by the US, South Korea, and Japan in Dec. 2014. Friedt explicitly linked the arrangement to the development of a regional inter-operative missile defense system between the US, South Korea, and Japan.

Friedt's comments imply that the missile defense system that South Korea is developing, known as the Korea Air and Missile Defense (KAMD), will be integrated with the missile defense system operated by the US and Japan.

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Though the South Korean Ministry of National Defense denies the charge - on Feb. 21, a ministry official said that the use of the arrangement was limited to “sharing information about threats posed by North Korea’s nuclear weapons and missiles” - in the future, the arrangement could be bent to the Americans’ will. After all, the US is the country that spearheaded the agreement and that is organizing the sharing of information.

The South Korean government’s equivocal attitude is also apparent in the question of deploying the Terminal High Altitude Area Defense (THAAD) weapons system on the Korean peninsula.

The South Korean government insists that there have been no requests from or deliberations with the US about deploying THAAD. However, this claim has been called into question by several American military officers who have said that deliberations have taken place and that possible deployment sites have been surveyed.

Furthermore, South Korean military officers and members of the ruling party have made both direct and indirect comments in support of THAAD, arguing that deploying the system would aid the country’s national security.

What a cowardly position this is: officially denying that deliberations are taking place, while quietly preparing to give in if the US pushes hard for deployment.

While the ostensible target of the Northeast Asia missile defense system is the threat of North Korea’s nuclear weapons and missiles, the actual target is China, and THAAD, the most recently developed technology, is the key component of this system.

Missile defense also plays an important role in the US policy of “rebalancing Asia”, which the administration of US President Barack Obama is currently promoting to counter China.

When the Chinese Defense Minister officially expressed concern about the deployment of THAAD during a visit to South Korea at the beginning of this month, it confirmed once more that the missile defense question is at the heart of the confrontation between the US and Japan on one side and China on the other.

For South Korea to fan the flames of this confrontation by joining one side will not help find a solution for North Korea’s nuclear program or lay the foundation for the unification of the Korean peninsula, let alone promote peace in Northeast Asia.

The South Korean government must quickly discard its complacent assumption that obeying the US will guarantee national security. It must also review the information-sharing agreement starting from square one. The government needs to realize that the current resurgence of controversy about South Korea’s involvement in the missile defense system is itself damaging to the country’s national security.

http://english.hani.co.kr/arti/english_edition/e_editorial/679265.html

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Breaking Defense – Washington, D.C.
OPINION/Air, Land, Sea Strategy & Policy

Want Stability? Fund Nuke Triad Modernization

By Peter Huessy
February 23, 2015

Nuclear modernization will receive at least \$1.2 billion more this year than last year’s \$23.5 billion if the president’s Defense Department budget request is approved. Modernization funding for nuclear weapons and their delivery systems comprise 4 percent of the defense budget and 0.6 percent of the Federal budget. These include: the Ohio-class submarine replacement program (ORP); a new long range bomber (LRSB); and a follow-on air launched cruise missiles (ALCM), as well as the ground-based strategic deterrent (currently the Minuteman missile system.)

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Critics say that's too much. They want to eliminate four of the ORPs while retiring four of the current submarines early and delaying by four years the procurement of the first new sub; delay buying the LRSB; cancel the ALCM and modernization of the ground-based cut upwards to allegedly save \$75 billion over the next decade.

Are these reductions workable? Would they contribute to improving and enhancing our strategic deterrent, especially in terms of questions of stability and the future adequacy of our deterrent?

Reducing the fleet of strategic nuclear armed submarines to eight from the planned 12 submarines means over the next few decades as few as six submarines would be available at any one time. This would seriously degrade the US nuclear deterrent capabilities, leaving as few as two submarines on patrol at any one time.

This would dramatically reduce the ability of the US to hold at risk adversary targets. It would also require operation of the sub fleet at a much higher tempo, thus increasing their potential vulnerability and boosting their costs of operation.

Some have suggested putting all currently planned SLBM warheads (roughly 1,000) on eight subs to make up for the elimination of four of the boats. (Breaking Defense readers will remember what happened when OMB suggested something similar).

This doesn't work. Two submarines on patrol cannot cover the same targets as the current four to five submarines on patrol, no matter how many extra warheads their missiles might carry. Two-thirds of the targets we now hold at risk would suddenly be in a sanctuary from which they could be used to attack the US and our allies.

This undermines our nuclear deterrent requirements. And it would increase pressure on our allies to either deploy their own nuclear weapons or make accommodations with our adversaries.

Some critics of the Navy budget proposals appear not to understand what the basis is of the Navy requirement for 12 submarines. Some have suggested that the strategy is one in which we would launch our submarine missiles quickly in a crisis—what some refer to as “prompt launch”.

This idea apparently stems from confusing a capability—much of our nuclear forces *can* be launched quickly in a crisis IF already placed on heightened alert. **But that is not our strategy.**

Submarines on patrol are there precisely so they **DO NOT** have to be launched promptly. The entire US nuclear deterrent strategy for many decades has been to have a secure second-strike retaliatory capability, especially in the submarine fleet. This eliminates any need to launch any of our nuclear weapons quickly in a crisis. This is possible because there is no current danger that the sub force could be found and destroyed before launching its missiles — even should a U.S. retaliatory launch be ordered by the President after an adversary's first strike against the United States or its allies.

That was precisely the aim of nuclear modernization and simultaneous arms control proposals under previous administrations and which is a stated goal in the 2010 Nuclear Posture Review.

Our strategic posture aims to *lessen* the temptation or incentives to launch our nuclear weapons quickly in a crisis. It is also designed to make our nuclear assets difficult targets so that an adversary is not tempted to strike us first.

The synergy between all three legs of the nuclear Triad (bombers, missiles and subs) thus makes it impossible for any adversary to strike all three legs simultaneously and thus the compulsion of an enemy to strike first in a conventional or nuclear crisis or conflict is virtually eliminated.

The 2010 START and 2002 Moscow strategic arms control treaties and the limiting of our land based missiles to one warhead each has helped considerably to move us toward that goal.

By not having to use such weapons early in a crisis, strategic stability is maintained and the chances that nuclear weapons would be used against the United States are significantly lessened.

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CUWS Outreach Journal

Maxwell AFB, Alabama

What about the proposal to delay acquisition of a new strategic bomber? The new bomber is not just for nuclear purposes. Current law requires the new bomber to be nuclear capable only two to three years *after* its initial deployment as a conventional platform. And its nuclear related costs are just 1.5 percent of the total cost—less than \$1 billion — for the new bomber force, hardly cause for alarm.

What about the idea of eliminating the new ALCM? That makes no sense either. Adding a cruise missile capability is needed to deal with enemy air defenses of increasing capability for both conventional and nuclear requirements.

Vietnam shot down over 1,700 US tactical airplanes and 17 B-52s and that was over 40 years ago. We only have 20 B-2 bombers that have both a needed penetrating capability today and a modern, effective ISR (Intelligence, Surveillance and Reconnaissance) capability.

Given these limits, carrying out a conventional campaign such as Desert Storm that required hitting over 30,000 aim-points, could not be done in the future with the airplane fleet of today.

The penetrating capability of a new strategic aircraft is also critical to find mobile and re-locatable targets while the stand-off ALCM allows the targeting of an enemy's time-urgent assets. It also compels the enemy air defenses to have to deal with a very large number of missile assets, as opposed to a smaller number of strategic aircraft.

As for the Minuteman land-based missiles, the Air Force is moving in the right direction. First, a recent Rand study recommended a modernized force and supported an option that turned out to be very similar to what the recent Air Force's own Analysis of Alternatives (AOA) also concluded was the correct path forward.

Second, while it is true that Minutemen can be sustained for the immediate future, the missile technology needs to be modernized, including at some point the ground-based support equipment is approaching a lifetime of 50 years.

Third, the future force will not be mobile—as some seem to believe— as the recommended modernized force will remain in fixed silos as they are today — at a very significant lower cost.

Fourth, the costs of a modernized land based strategic deterrent force would be roughly \$42 billion over 20 years, or about \$2.2 billion a year compared to the \$1.5 billion we are spending today. Thus, the notion that a future ICBM force will cost \$200 billion, as some analysts have concluded, is not consistent with what the Air Force has chosen and is off by a factor of at least 400 percent. A new ICBM also will be dramatically lower in annual operations and maintenance costs.

Some critics have not only called for the elimination of key elements of our nuclear deterrent, they have also argued the current New Start Treaty warhead levels are in excess of what is needed.

Could the United States deploy fewer than the 1,550 to 1,800 strategic warheads we have today? Yes, but such a move would make no sense if deterrence could not also be maintained. Our deterrent requires a balance with potential adversaries and a force which is “second to none” as underscored by a 2014 essay by Henry Kissinger and Brent Scowcroft, both former Presidential national security advisers.

Some analysts have concluded that we could unilaterally reduce our total warheads to 1,000—including reserve, hedge and operational weapons, and still have 200 retaliatory weapons available.

Implicit in such a claim is that the deployed strategic nuclear force would have to be nearly all submarines carrying roughly 600 warheads aboard six to eight submarines.

Each of the 16 missiles planned for the Ohio Replacement Program would have to carry six warheads to have two submarines on patrol able to retaliate with 200 weapons.

Such a force would present an adversary with no more than six targets. That would significantly heighten strategic instability.

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Others have claimed that 1,000 deployed weapons would be sufficient to meet our deterrent goals even should Russia not follow suit. They also assert the administration won't unilaterally reduce to that number for political reasons; although deterrent requirements would allow it.

But there is no record of this administration testifying before Congress that *unilaterally* reducing to 1,000 total warheads — up to a one-third reduction from the current New Start level — can be done and meet current deterrent requirements.

But the implicit math is the same. Squeezing current bomber weapons (400 to 700), ICBM warheads (400) and the current Trident missiles (around 1,000) into a total deployed ceiling of 1,000 warheads requires killing upwards of two legs of the triad.

Or conversely, it would significantly weaken each leg of the triad to where the deterrent capability of the US nuclear force will no longer be able to meet its required goals.

Russia does not plan to reduce its strategic forces to such levels. In fact, it is trying to modernize its strategic forces at a rate not even seen during the height of the Cold War. And no US administration has made any progress in controlling the level of Russian tactical nuclear weapons deployments, which further complicates any reductions to such warhead levels.

As for China, it rejects outright any arms control restrictions on its nuclear forces even as it keeps their capability and numbers secret. Finally, we should be cognizant of the reported request by the senior military leaders of China to do combined military exercises with the Russians that would “jointly” target the United States with nuclear weapons.

Furthermore given China's growing nuclear arsenal and its plans for global hegemony (backed up by nuclear weapons and other asymmetric military capabilities as revealed in a new book by Mike Pillsbury, *The Hundred Year Marathon*) a significantly smaller US deployed strategic nuclear force could easily be outnumbered by a combined Russian and Chinese strategic arsenal by three to one or more.

The nuclear deterrent has prevented nuclear weapons from having been used, especially by the two largest nuclear armed adversaries, for some 70 years. This is an extraordinary record.

Cutting the very backbone of our nuclear security is not the way forward to a safer world or safer America.

Peter Huessy, president of the consulting firm GeoStrategic Analysts, also organizes the Air Force Association's well-known breakfast series on Congress and space issues.

<http://breakingdefense.com/2015/02/want-stability-fund-nuke-triad-modernization/>

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Real Clear Defense.com – New York City, NY
OPINION/Article
February 24, 2015

Is America's Nuclear Arsenal Dying?

By Michaela Dodge and Adam Lowther

As Russia and other nations around the world flex their “nuclear muscles,” when it comes to the United States, maintaining a credible nuclear force is certainly a tough task. Challenges include: declining research, development and acquisition budgets; uncertain prospects for modernization, and an American public that lacks a clear understanding how nuclear weapons contribute to national security.

The U.S. nuclear force has prevented a great power war for seven decades. Yet the commitment to maintain a credible nuclear force appears shaky.

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That is certainly not the case in competitor nations such as Russia, China and North Korea. While sanctions and low oil prices have crippled Russia's economy, the Kremlin is still doggedly spending billions of dollars on modernizing its strategic rocket forces. Washington's lack of commitment takes a toll on more than investment. It does not go unnoticed by the men and women who man the nation's nuclear submarines, bombers, and intercontinental ballistic missiles (ICBMs). That only makes executing a nuclear mission more difficult, both practically and morally.

State of Affairs

Imagine being out on the vast prairie of Montana, North Dakota, Wyoming, Colorado or Nebraska in the dead of winter, the blasts of wind making the sub-zero temperatures nearly unbearable. After driving one to three hours to reach your missile alert facility, you go down into the launch control center (LCC) where the 50-year-old equipment smells the same as it did to your father, who pulled alerts here before you were born. During winter, heavy snow may trap maintenance and missile alert crews in the missile field for days. When they finally get to go home, the smell of old equipment and chemicals lingers on their clothes.

Much the same can be said for the bomber crews who fly the exact same aircraft their fathers flew and their sons or daughters will likely fly.

Recent Analysis

The Heritage Foundation's newly released 2015 "Index of U.S. Military Strength" evaluates the health of the U.S. nuclear complex according to nine categories. In four of those categories—"Warhead Modernization," "Delivery Systems Modernization," "Nuclear Weapons Complex" and "Nuclear Test Readiness"—the complex was rated as "weak" (the second worst rating possible).

One of the main factors behind these low scores is sequestration. Its "automatic pilot" budget regimen threatens sustained and predictable funding—a major problem for addressing issues within the nuclear complex. Already it has forced a delay in plans to replace aging delivery systems. This includes everything from a new bomber and its nuclear certifications, to a replacement for the Ohio-class strategic submarine, to a follow-on intercontinental ballistic missile.

Another major factor contributing to lower scores are the government's conflicting policies regarding the nuclear complex. We say we care about the nuclear force and the complex that supports it, yet manpower and resources available to execute the nuclear mission have been steadily declining until recently. We say we are in favor of a robust nuclear modernization program, yet proclaim, at the same time, we need to get to a world without nuclear weapons—all while refusing to truly modernize our weapons.

The President's fiscal year 2016 budget dedicates over \$75 million for the ground-based strategic deterrent, better known as the Minuteman replacement. While the current missiles are in fact woefully archaic—they were first deployed in the 1970s—there is no provision for replacing the even older silos and launch control centers from which a new missile would be launched.

On the bright side, the President's budget accelerates by two years the Long-Range Stand Off missile, an essential advancement in American capabilities. This project is particularly vital considering the limited number of available stealth bombers and the angle of attack needed to counter the tunneling efforts of our adversaries, which make targets hard to reach.

The main question, however, is what Congress will do. At the end of the day, it's the House and Senate that decide which programs get funded and at what level.

The Index's low rankings indicate the areas of America's nuclear force that are in greatest need of investment. And it's a force that must be sustained. The nuclear mission is critical. Its ultimate purpose is to deter a catastrophic



attack on our homeland, our forces abroad, and our allies. While it is true that we require a nuclear force we never hope to launch, it is important to recognize that our nuclear weapons serve to keep the peace every day.

Michaela Dodge is a defense and strategic policy analyst in The Heritage Foundation's Allison Center for Foreign and National Security Policy. Dr. Adam Lowther is a research professor at the Air Force Research .

http://www.realcleardefense.com/articles/2015/02/24/is_americas_nuclear_arsenal_dying_107655.html

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War on the Rocks – Washington, D.C.
OPINION/Analysis, Beyond Offset

Why the New Bomber is a Good Investment

By Robert Haddick
February 26, 2015

Should the bomber go the way of the battleship? That is what T.X. Hammes recently suggested here at *War on the Rocks* (“Rethinking Deep Strike in the 21st Century”). Hammes urged policymakers to abandon the U.S. Air Force’s Long Range Strike-Bomber (LRS-B) program. Recalling procurement debacles like the B-2 and F-35 programs, Hammes argued that policymakers and planners should avoid the risk of another such acquisition fiasco and instead give standoff missiles and the emerging technology of autonomous drones a chance. Hammes compared the Air Force’s effort to field another manned bomber with the Navy’s attempt after World War I to hold on to the battleship, only to see that increasingly costly platform surpassed by a new technology, swarms of aircraft. However, this essay will show that missile-only alternatives are more speculative, more risky, and much more expensive methods of delivering large volumes of firepower against heavily defended targets, an essential capability the United States will need if it is to maintain deterrence and stability in the face of increasingly sophisticated challengers around the world.

The need for long-range strike

Hammes stated, “The requirement for a long-range strike capability in the era of increasingly effective anti-access weapons systems is clear.” This point is indisputable. The ability of future potential adversaries (and not just China) to attack and suppress forward air and naval bases and surface warships with precision missiles threatens to negate the massive investment the United States has made over many decades in relatively short-range tactical airpower and missiles.

In the case of the Western Pacific, by next decade China will have the capacity to project a large volume of precision firepower out roughly 2,000 kilometers from China’s coast and thus push U.S. Air Force and Navy tactical aircraft, along with Tomahawk land-attack cruise missiles deployed on surface ships, out of range of China’s military and command infrastructure (Iran may gain a similar capability by next decade). The U.S. Pacific Fleet’s two guided missile submarines (due for retirement next decade) could launch roughly 300 Tomahawks, a wholly inadequate strike capacity against a challenging opponent. The Navy’s attack submarines could add a few hundred more Tomahawks but only at the risk of sacrificing their critical anti-ship and anti-submarine missions.

Thus long-range strike may very well be the only remaining useful military capability available to U.S. policymakers and commanders against opponents with their own long-range missile forces. Having the ability to strike the assets and conditions most valued by an adversary anywhere they are located is critical to deterring adversary misbehavior and for prevailing in a conflict should deterrence fail. Failing to have this capability – in other words, leaving the adversary with a sanctuary for production, organization, and training – is a recipe for defeat. The ability to deliver a large volume of sustained firepower against an adversary – his military forces, infrastructure, internal security forces, or even the personal interests of the adversary’s leadership – is a powerful tool for dissuading that adversary against aggressive behavior in the first place, the fundamental goal of deterrence.

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U.S. commanders will need a stealthy long-endurance aircraft like LRS-B for maritime surveillance and strike in order to prosecute a war at sea against an enemy fleet. Should China, for example, have the capability next decade of knocking out U.S. air and naval bases in the Western Pacific, its forces would then be able to establish air superiority out to perhaps 1,500 kilometers (the combat radius of its Flanker and J-20 strike-fighters). It would then presumably be too risky for the Navy's non-stealthy P-8 Poseidon and MQ-4 maritime surveillance aircraft to operate in this denied zone. The LRS-B might be the only aircraft able to fly there, identify enemy surface naval targets, and either strike them or pass them off to U.S. and allied attack submarines.

U.S. planners should pursue a capability to target mobile missiles and their transporter-erector-launchers (TELs). This is a very challenging mission, but the United States will need this capability if it is to achieve fundamental campaign objectives such as reopening sea lines of communication and protecting the global commons in the face of adversary long-range land-based anti-ship missiles and airpower. In a recent essay for *Breaking Defense*, I proposed an operational concept using miniature autonomous search and strike missiles that would be deployed from stealthy U.S. bombers to hunt for TELs and thus, at least temporarily, suppress long-range anti-ship missiles. A large and sustained air campaign (described below) could suppress adversary air defenses to the point when around-the-clock suppression of TELs could be possible.

The larger point of that article was to show that it would be relatively inexpensive to add this capability to the LRS-B's portfolio of missions. The ability to target mobile missiles would threaten the large investments adversaries have made in this concept, threaten a sanctuary he may have planned on, and disrupt his long-range anti-ship operations – something the United States must achieve if it is to meet a fundamental campaign objective. The new National Security Strategy of the United States recommit to the goal of protecting the global commons. Military planners have a duty to devise capabilities that respond to policymaker's priorities, even when they are challenging to achieve.

Costs and risks of the LRS-B program

Expecting the LRS-B program to resemble the poor experience of the B-2 and F-35 programs is employing the wrong analogy. Both of those programs were at the edge of technology and thus took great technical risks, with large cost overruns the result. With LRS-B by contrast, program managers are allowing very little technical risk. Indeed, according to a Congressional Research Service report, the new bomber might already be designed and nearing production.

In 2012, a top Air Force acquisition official described how the LRS-B program is using subsystems already in use on the F-22 and F-35 aircraft. Managers are restricting the use of unproven subsystems and technology in the new bomber in order to reduce risk and improve the odds of hitting the unit fly-away cost target of \$550 million (2010 dollars). A 2010 report, written by Mark Gunzinger for the Center for Strategic and Budgetary Assessments, further described how the new bomber could make use of existing systems such as the F-35's sensors and combat systems.

If the Pentagon purchases 100 LRS-Bs, what capability will it have acquired? We don't know LRS-B's payload capacity. If it matches the B-2's, an LRS-B will be able to deliver 80 500-pound Joint Direct Attack Munition (JDAM) bombs, with up to five-meter accuracy (a JDAM kit currently costs about \$25,000; the Pentagon plans to have over 217,000 in its inventory). We should also assume that LRS-B will be able to employ air-to-surface missiles, decoys, and air defense suppression weapons.

For a large-scale conventional air campaign, let us assume that 70 bombers are available with 35 flying each day. This results in a capacity to strike 2,800 aim points every day, or almost 20,000 aim points a week, for an open-ended period of time. To put this in context, during the six weeks of the 1991 air war against Iraq (Operation Desert Storm), coalition air forces attacked 35,085 targets (some consisting of more than one aim point). The sustained strike capacity of the LRS-B fleet will substantially exceed that of all the coalition airpower assembled for Desert Storm. The capacity to precisely strike over 80,000 aim points per month, month after month, anywhere in the world, and in several theaters simultaneously should be a strong factor bolstering deterrence.

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What is the future for LRS-B's stealthiness, a top program priority and a requirement for mission success? Stealthiness is not a yes or no question but rather a function of radar cross section combined with route planning, the ability to sense and avoid threats, electronic attack support, deception, and air defense suppression techniques. There is concern that greatly increased computer processing power will allow VHF and UHF spectrum radars to now be useful for targeting previously stealthy aircraft. However it is small tactical fighter aircraft and cruise missiles, with their vertical and horizontal stabilizer tail surfaces, that are most vulnerable to this emerging counter-stealth technology. Large tailless aircraft like the B-2, RQ-180, and presumably LRS-B are much better positioned to retain their stealthiness across the broad spectrum of radar frequencies. Those who are concerned about the decay of radar stealthiness should favor large wingless aircraft like the new bomber which will very likely stay relevant for longer than other aircraft types.

If the LRS-B program is well-managed and achieves its cost goals, it is reasonable to expect to pay \$65 billion or less for 100 bombers. This number would include additional development and fielding costs plus inflation. But let us assume for the moment that the program suffers from problems that raise the cost 50 percent to \$100 billion. Let us also assume that counter-stealth advances force the new bomber out of service after 25 years (the Air Force plans to operate its current bombers for at least 50 to 80 years). Even with these pessimistic assumptions, the program would constitute a trivial burden on defense spending over the service life of the aircraft. If the United States spends \$600 billion per year (in constant dollars) on defense over the next 25 years, acquiring 100 of the new bombers for \$100 billion would sum to less than 0.7 percent of defense spending over that period. For that small burden, policymakers and commanders would obtain a very impressive strike capacity, with great benefits for deterrence and stability.

Where are those missiles?

Replicating the new bomber's strike capacity with a standoff missile would require the Pentagon to design and acquire a weapon it has never contemplated before. And the cost of delivering sustained firepower with such missiles that matched that of the new bomber fleet would be grossly more expensive than the LRS-B program.

We should begin by dismissing the Tomahawk cruise missile as a point of reference. When China's land-based missile forces and airpower are able to suppress surface targets (including warships) out to 2,000 kilometers (likely by next decade), U.S. military forces would need a land-attack missile with a range of at least 4,000 kilometers in order to launch from a relatively secure distance and strike targets significantly inland. This is two and half times Tomahawk's range of 1,600 kilometers. With the exception of its strategic nuclear missiles (currently Minuteman and Trident, both restricted by the New START Treaty), the United States possesses no such missile and never has. It has been three decades since the U.S. has designed and fielded a theater-range missile. The last such missile, the nuclear armed Pershing II (banned in 1987 by the Intermediate Nuclear Force (INF) Treaty), had a range of 1,770 kilometers, short of these requirements.

What would be the cost of a new missile with a range of 4,000 kilometers and possessing up to five-meter accuracy, matching JDAM's performance? No one knows since it has never been tried. A recent report from RAND estimated that rebuilding the Pershing II force would cost \$18.4 million per missile (2011 dollars). As noted above, the U.S. would need a missile with more than twice the range of the Pershing II, implying a larger and more expensive missile. Let us give missile advocates a large benefit of the doubt and assume that the U.S. could build a 4,000-kilometer ballistic missile for \$20 million (in 1982 the Pershing II program was cited by the Congressional Budget Office for cost overruns and mismanagement; it is not only aircraft programs that suffer from such problems). For \$100 billion, a very bad outcome for the LRS-B program, the Pentagon could acquire 5,000 "Pershing III" missiles. The new bomber fleet could deliver more firepower in one day than this investment in missiles.

Missile advocates may argue that cruise missiles would be much less expensive than a Pershing III ballistic missile. This is likely although we still don't know what a 4,000-kilometer cruise missile would cost because none has ever been produced. The Navy continues to purchase Tomahawks at \$1.8 million per missile. Again giving missile



advocates the benefit of the doubt and assuming the United States could acquire a cruise missile with 2.5 times the Tomahawk's range for \$2 million, the Pentagon would get 50,000 missiles for \$100 billion, the bad outcome for the LRS-B program. As calculated above, the LRS-B fleet, using conservative assumptions for campaign planning, could strike that many aim points in under 18 days and then continue with the campaign. Under the missile-only option, the United States would have to end its campaign. Giving missile advocates every benefit in the assumptions, there is no way the missile option can match the LRS-B fleet's sustained strike performance.

Can new technologies reduce missile costs?

Missile advocates hope that emerging technologies, such as nano structures and additive manufacturing (3D printing) will greatly reduce the cost and increase the performance of future missiles. That may end up being the case someday. But these technologies and techniques are still in the laboratory and so formulating assumptions about their prospective future benefits to weapon acquisition is speculative. Further, it is not logical to assert that such benefits, should they appear, can only benefit missile production but not aircraft production. For now it seems safe to surmise that these hypothetical benefits to weapon production are many years in the future and well beyond the planning horizon of today's policymakers and planners who have urgent decisions to make regarding access-denial capabilities adversaries are fielding right now.

Finding bases for missiles

Finding bases for the new 4,000-kilometer missiles would not be simple. The new missiles would have to be larger than Tomahawk, meaning that they would not fit inside the Navy's standard Mk 41 vertical launch system cells. The Navy would have to design a new launch system for the larger missiles and either retrofit this system onto some of existing cruisers and destroyers (removing those ships from their current missions) or acquire new ships designed to support the new missiles. The Navy is struggling to fund its current shipbuilding plan; a new class of "arsenal ships" would add to the existing budget trouble.

Analysts have long discussed the idea of using cargo aircraft as "missile trucks." The Missile Defense Agency has used C-17 cargo aircraft to deploy medium range target missiles to test its interceptors. We don't know the dimensions of hypothetical 4,000-kilometer ballistic or cruise missiles but let us assume that a C-17 could carry 16 such missiles in its cargo compartment. That is one-fifth the number of bombs the B-2 (and perhaps LRS-B) can carry. If the Air Force has no spare capacity in its C-17 fleet (a very reasonable assumption during a wartime emergency), the Air Force would have to restart the C-17 production line. In 2012 the Air Force purchased its final C-17 for \$170 million. It would take 500 C-17s (costing \$85 billion) to replicate the daily striking power of the LRS-B fleet. As calculated above, the missiles to arm the C-17s would be an extra expense (generously assumed at \$2 million for a cruise missile and \$20 million for a ballistic missile as compared to \$25,000 for a JDAM kit). The "missile truck" option is far more expensive than the new bomber program.

The cheapest option would be to base the new missiles on land and on TELs. This of course would require the United States to abrogate the INF treaty. Assuming a future U.S. president did so, planners would then have to find bases and operating areas for the missiles and TELs. In the Pacific, Guam and several other small neighboring islands could be candidates. One risk is that Guam is already getting very crowded with other important military assets and is becoming increasingly vulnerable to Chinese missile suppression. Concentrating the missiles on Guam and neighboring islands would reinforce Guam's status as a "single point of failure" for U.S. strategy in the region. Foreign basing would be highly controversial, with such deployments likely at risk at each general election in these countries, leaving sustainment of the concept in a constant state of uncertainty. It would be risky and expensive to solely rely on a missile-only strategy to substitute for the volume of sustained firepower and flexibility a new bomber fleet will deliver.

Suppressing bomber bases

In 2003, hobbyist Maynard Hill assembled an 11-pound balsa airplane that flew from Newfoundland to Ireland (1,882 miles) on less than one gallon of gasoline. This demonstration could inspire an adversary to fashion swarms



of cheap drones to target U.S. Air Force bomber bases from very long range. An impact from such a drone armed with even a tiny warhead could result in a scrubbed mission for a stealth bomber that relies on an unblemished skin for its performance.

This could be a reasonable concern but an adversary like China would have to overcome some significant hurdles to turn it into a plausible military threat. The distance from China's coast to Whiteman Air Force Base in Missouri (currently the home of the Air Force's B-2 fleet) is over 7,000 miles, almost four times the distance of Hill's flight. Such a drone would require alternate navigation systems (such as inertial or terrain-matching systems plus a radar altimeter) in addition to satellite navigation, which the Air Force could locally jam when bombers emerge from their shelters for takeoff. The drone swarm would have no idea in advance when U.S. bombers would emerge from their shelters to taxi to the runway. Thus, they would need targeting sensors (such as millimeter wave radar, an imaging infrared sensor, and laser-radar) and the ability to loiter for long periods above the many air bases the U.S. bomber force would use in wartime.

Avionics, sensors, and navigation systems add weight and require electrical power, resulting in the need for a substantial engine. This in turn will add to the fuel requirement to traverse over 7,000 miles and then loiter for perhaps many hours. The result will be a substantial (and not inexpensive) aircraft or cruise missile and thus a conventional target for existing U.S. air defense systems.

Conclusion

Potential adversaries are exploiting their positions on the Eurasian continent and the rapidly improving performance of missiles and sensors to build strike capabilities that will increasingly threaten the handful of bases and surface forces the United States employs to maintain forward presence. As these capabilities grow, adversary leaders may come to believe they will have military options during a future crisis. To prevent a breakdown in deterrence, the United States needs to bolster its deep strike capacity in order to remove any doubt about its ability to strike any target and at any point along the spectrum of escalation. After examining the alternatives, the Long-Range Strike-Bomber program offers the greatest sustained deep strike capacity at the lowest cost and with the lowest program risk.

Robert Haddick is a former U.S. Marine Corps officer and an independent contractor at U.S. Special Operations Command. He writes here in a personal capacity. His book "Fire on the Water: China, America, and the Future of the Pacific," is now out from Naval Institute Press. He receives no compensation from any defense contractor or associated organization.

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