



USAF Center for Unconventional Weapons Studies

(CUWS) Outreach Journal

Issue No. 1151, 06 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: "U.S. Department of Defense Fiscal Year 2016 Budget Request Overview." Authored by the Office of the Under Secretary of Defense (Comptroller) Chief Financial Officer; February 2015, 135 pages.
[http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2016/FY2016 Budget Request Overview Book.pdf](http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2016/FY2016_Budget_Request_Overview_Book.pdf)

The Fiscal Year (FY) 2016 budget submission sustains the alignment of program priorities and resources with the 2014 Quadrennial Defense Review (QDR) and supports military operations in Afghanistan and other areas of the world to counter threats from terrorists. The QDR makes clear that the updated national defense strategy is right for the Nation, sustaining the global leadership role of the United States and providing the basis for decisions that will help bring the military into balance over the next decade and responsibly position the Department for an era of both strategic and fiscal uncertainty.

Key Themes:

- Seek a Balanced Force
- Manage Enduring Readiness Challenges
- Continue to Focus on Institutional Reform
- Pursue Investments in Military Capabilities
- Provide for the People

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Aviation Week – New York City, NY

Nuclear Bow Wave Builds with Program Starts

By Bill Sweetman, *Aerospace Daily & Defense Report*

February 2, 2015

The 2016 budgets for the U.S. Defense and Energy departments mark the start or expansion of a number of nuclear-deterrence initiatives, but with many of the bills coming due in future years.

The biggest current-year items cover research and development of the Navy's Ohio Replacement submarine, at \$1.39 billion in fiscal 2016. This comprises a \$971 million Navy R&D line item and part of an Energy Department \$1.37 billion request for naval reactor development under the National Nuclear Security Administration (NNSA), of which \$156 million is dedicated to the new life-of-ship reactor for the Ohio replacement. Navy leaders have complained that the service cannot afford to build the boats within its current shipbuilding budget, but this year's budget does not address procurement for the new ballistic missile submarine.

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The U.S. Air Force's Long-Range Strike Bomber receives \$1.25 billion in research and development funding for fiscal 2016. In previous years' budgets, this program has been projected to reach \$3.1 billion per year in 2018 and \$3.45 billion in 2018. The Air Force's budget briefing describes the LRSB as "optionally manned."

Two Air Force nuclear missile programs start in 2016. The Long Range Standoff Weapon (LRSO) replacement for the Air Launched Cruise Missile gets \$36.6 million in R&D, up from \$3.4 million in 2015, but the Air Force states that the fiscal 2016 budget "accelerates the LRSO program by two years." Together with the fact that the Air Force announced last week that the LRSO analysis of alternatives had been completed, this implies strongly that the new Future Years Defense Program will provide more money beyond 2016. Older budget documents suggest that LRSO could rise to \$300-\$350 million per year in its early development stages.

A new line item provides an initial \$75.2 million for the Ground Based Strategic Deterrent (GBSD) program, which is currently aimed at developing a replacement intercontinental ballistic missile (ICBM) to replace the Minuteman III. A request for information on GBSD was issued in January, and the basic plan includes the restoration of the ICBM infrastructure – launch control centers and silos – starting in 2022. That will be followed by development of an all-new missile using the existing warheads.

Also seeing a substantial increase is the Air Force Nuclear Weapons Modernization program, now mainly dedicated to the B61-12 aircraft-delivered nuclear bomb. R&D is budgeted at \$212.1 million in fiscal 2016, up from \$168.3 million in 2015 and \$33 million in 2014. This funds the non-nuclear elements of the program, including the GPS-inertial guided tail-kit and part of the integration onto the F-35. Development of the nuclear package – rebuilt from existing B61s, with increased security and an 0.3-50 kiloton variable yield – is included in the \$8.8 billion NNSA budget for nuclear weapons.

In a January report, the Congressional Budget Office estimated that nuclear programs will cost the U.S. government an average of \$35 billion per year over the next decade, with \$227 billion spent by the Pentagon and \$121 billion by the Energy Department's NNSA.

In a pre-budget briefing, Todd Harrison, senior fellow of defense budget studies at the Center for Strategic and Budgetary Assessments, noted problems with the idea of special funds for nuclear programs. He credits the Navy with being "forthright" about its inability to afford the Ohio Replacement submarines – "there is a huge bow wave of modernization beyond the FYDP," he says – but the proposal's "logic breaks down. There are lots of other things that meet the same definition of a national asset," including LRSB and GBSD. "What about satellites? What about tankers that refuel bombers? It's ridiculous where that logic takes you. Just admit that it's going to come from the Army."

<http://aviationweek.com/defense/nuclear-bow-wave-builds-program-starts>

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Great Falls Tribune – Great Falls, MT

Malmstrom Funding Included in AF Budget Proposal

By Jenn Rowell

February 2, 2015

The Defense Department rolled out budgets Monday, and they include continued investment in the nuclear force.

The proposed defense budget, which will need congressional approval, includes funding for nuclear operations and sustainment, funds additional manning to further strengthen the nuclear force, and \$144.2 million for nuclear facility construction.

"Strengthening our nuclear enterprise is something we're putting a lot of investment in," Maj. Gen. James Martin, Air Force deputy assistant secretary for budget, said during the Pentagon briefing on the Air Force budget proposal.

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For fiscal year 2016, which begins Oct. 1, \$19.7 million is included for construction of a tactical response force alert facility at Malmstrom Air Force Base.

Sen. Jon Tester, D-Mont., is assigned to the military construction subcommittee.

The proposed Air Force budget maintains 450 intercontinental ballistic missiles, including the 150 operated and maintained by the 341st Missile Wing at Malmstrom.

The proposal also includes \$95 million for a weapons storage facility at F.E. Warren AFB in Wyoming, and Malmstrom is expected to be next in line for a new weapons storage facility after the Wyoming facility is completed.

But Gen. Mark Welsh, chief of staff of the Air Force, testified to Congress last week that sequestration would cut all nuclear military construction projects except the weapons storage facility at F.E. Warren.

The proposed budget funds 1,120 additional military and civilian personnel across the nuclear enterprise. Those positions were announced last year after the cheating investigation was announced at Malmstrom, but this budget will continue to fund those positions as airmen and civilians transfer into the nuclear bases.

In addition to those positions, the FY16 budget proposal includes 158 technical and engineering staff positions at Hill AFB in Utah to support the initiative to recapitalize the Minuteman II infrastructure.

The budget includes \$212 million for nuclear weapons modernization, \$68 million for nuclear operations and sustainment, \$8.8 million for nuclear and conventional physical security development, \$142 million for ICBM fuze modernization and \$178.9 million for ICBM squadrons.

Also included in the proposed Air Force budget is ground based strategic deterrent flight system development; the addition of the assignment pay for ICBM officers and special-duty assignment pay for enlisted airmen in the ICBM forces; and security upgrades such as the replacement of the nuclear warhead payload transporter van.

It also includes the replacement of the UH-1N helicopters used by units at all three ICBM bases. The replacement program will purchase Army UH-60A Black Hawk models and convert them to UH-60L models using existing government contractor services, according to the DOD budget documents.

The helicopter replacement is scheduled to be completed by 2020, according to the Air Force budget proposal, and cost \$980 million.

Welsh told Congress last week that sequestration also would cut the helicopter recapitalization.

<http://www.greatfallsribune.com/story/news/local/2015/02/02/malmstrom-funding-included-af-budget-proposal/22771173/>

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The Center for Public Integrity – Washington, D.C.

Obama Proposes to Boost Spending for Nuclear Armaments

Warhead spending alone would grow faster than the overall military budget

By Douglas Birch

February 3, 2015

The Obama administration has proposed to boost spending on the U.S. stockpile of nuclear warheads at a higher rate than for many other military programs, according to White House budget documents published February 2.

In its proposal for fiscal 2016, the White House calls for spending \$8.85 billion for maintaining and rebuilding the nation's nuclear warheads, an increase of more than eight percent over current levels, the documents state.

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The Pentagon, meanwhile, is requesting a 4 percent increase over its overall 2015 spending of \$560.3 billion, to reach \$585.2 billion in 2016; this total includes both the “base” budget and a large, associated military account meant to finance overseas “contingency operations.”

The spending on warheads represents just a small part of a sweeping U.S. effort to completely rebuild the United States “triad” of nuclear forces — including long-range bombers, subs and missiles — over the next three decades. The Congressional Budget Office report last month estimated the cost of this ambitious project at \$355 billion through 2023.

Frank Klotz, the head of the National Nuclear Security Administration (NNSA), the semi-autonomous agency that runs DOE’s nuclear programs, defended the spending Monday in a conference call with reporters, saying that the stockpile of U.S. nuclear warheads was the “smallest and oldest” that it has been since the Cold War and that the administration had a responsibility to refurbish them. “As long as we have this nuclear deterrent, it must remain effective,” he said.

The NNSA has shifted spending among some of its budget accounts since last year, making precise comparisons to earlier tallies difficult. But Klotz told reporters that besides the new spending for warheads, the current NNSA budget calls for a 3 percent increase in “core” nonproliferation programs, which are designed to reduce or eliminate nuclear materials and radiological threats.

NNSA deputy administrator for Defense Nuclear Nonproliferation Anne Harrington said the increase translated into about \$40 million, but she declined to describe changes in nonproliferation spending in more detail.

According to the documents, the NNSA’s proposed \$1.94 billion nonproliferation budget includes \$426.7 million for global efforts to secure nuclear materials, including weapons uranium and plutonium. It also seeks \$345 million, or 18 percent of the total nonproliferation budget, for continued work on the mixed-oxide or MOX nuclear fuel plant under construction at the Savannah River Site in South Carolina, part of a joint-U.S. Russia effort to transform up to 34 tons each of their surplus weapons plutonium into reactor fuel.

A Department of Energy report last year concluded that the final cost of the overall U.S. MOX project would exceed \$30 billion, considerably higher than initially expected. As a result, the White House last year sought a smaller appropriation — just \$221 million — to place the half-finished plant on “cold standby,” essentially mothballing it.

But a defense bill approved by Congress and signed by the president in December authorized a \$345 million budget for the MOX project in fiscal 2015. Klotz told reporters the administration decided as a result to propose the same amount Congress had approved while it completes new Congressionally-mandated studies of potential MOX alternatives.

The Department of Defense’s overall \$585 billion budget request, meanwhile, increases spending on several major modernization programs for nuclear weapons. The White House is asking for \$1.25 billion for the strategic nuclear Long Range Strike Bomber project, up from \$914 million this year.

The proposed budget would also increase spending for development of a replacement to aging Ohio class ballistic missile submarines by \$116 million, to 1.4 billion this year. And it calls for spending \$75.2 million on a program to modernize or replace the nation’s fleet of Minuteman III ICBMs, an increase of \$68.3 million.

Arms control advocates call the ambitious program both bloated and wasteful, and based on an outdated view of the importance of nuclear weapons to U.S. security.

“It’s disappointing to see this administration has not put together a more cost effective, common sense approach” to modernizing the nuclear arsenal, said Daryl Kimball, executive director of the Arms Control Association in Washington.

Arms control expert Kenneth Luongo, a former Department of Energy official and president of the Partnership for Global Security, said Russia’s withdrawal from cooperation on most other nuclear nonproliferation, which ended formally in December, has left some U.S. programs stranded.

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"The real problem is that this administration has not created any new nonproliferation programs and the old ones are dying," Luongo said. "And that's a huge challenge that they have not faced up to."

<http://www.publicintegrity.org/2015/02/03/16686/obama-proposes-boost-spending-nuclear-armaments>

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Sputnik News – Russian Information Agency

Pentagon Requests \$1.6Bln for Ballistic Missile Defense

According to US Defense Department's program acquisition document, Pentagon is asking for \$1.6 billion to test and develop its ground-based interceptor ballistic missile defense system.

3 February 2015

WASHINGTON, (Sputnik) — The US Defense Department is asking for \$1.6 billion to test and develop its ground-based interceptor ballistic missile defense system, according to department's program acquisition document.

"Additional funding is sought for...missile defense ground based interceptor reliability (\$1.6 billion)," the document issued Monday said.

The proposed budget supports the commitment to develop, operate, and sustain the midcourse defense system, which includes the planned deployment of 40 ground-based interceptors at Fort Greely, Alaska and four interceptors at the Vandenburg Air Force Base in California by fiscal year 2017.

The Pentagon said it seeks to defend the United States from ballistic missile attacks by striking and destroying incoming missiles with a kill vehicle.

The Pentagon will use the \$1.6 billion — up from \$1 billion in 2015 — to test and develop a more accurate and reliable kill vehicle, according to the document.

The funds will also extend to cover the cost for an expert panel and a board to review past test failures.

<http://sputniknews.com/military/20150203/1017682841.html>

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The Korea Times – Seoul, South Korea

China Voices Objection to US Interceptor

By Jun Ji-hye

February 5, 2015

Chinese Defense Minister Chang Wanquan expressed concerns, Wednesday, over the possible placement of the United States' latest ballistic missile interception system in South Korea as part of the U.S. missile defense program (MD).

"Chang voiced concerns over the deployment of a Terminal High-Altitude Area Defense (THAAD) missile battery here," defense ministry spokesman Kim Min-seok told reporters.

Chang, who arrived in Seoul for a three-day trip Tuesday, made the remarks during his meeting with his South Korean counterpart Han Min-koo at the Ministry of National Defense.

Kim refused to release details of Chang's remarks, citing possible problems in Seoul-Beijing diplomatic relations.

"Han told Chang that there has been no consultation between South Korea and the U.S. about the deployment, so there has been no decision thus far," Kim said.

Han also stressed that THAAD is a defensive measure against missile threats from North Korea, Kim noted.

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THAAD with a range of 150 kilometers would provide an integral part of the U.S. missile shield aimed at neutralizing ballistic missiles.

The system is intended as protection for U.S. troops stationed here, but Beijing feels vulnerable due to the radar system alone, as it could potentially snoop on its radar system.

While the U.S. has constantly expressed its hope of bringing the battery into the South, China and Russia have claimed that deployment would spark tensions in Northeast Asia.

During the meeting, the defense chiefs of the two countries also agreed to establish a military hotline between their respective ministries at the earliest possible date to facilitate direct communication between their defense chiefs.

"Toward that end, the two agreed to strengthen working-level discussions," Kim said. "The hotline is expected to be set up in the first half of the year."

If established, Beijing will be Seoul's third hotline contact. Seoul already has connections with Washington and Tokyo.

Discussions about a minister-level military hotline between Seoul and Beijing began in 2007, with China reportedly having been reluctant to proceed, apparently wary of harming relations with the repressive state.

Han and Chang also discussed the North's nuclear program. Han asserted that the North should abandon its nuclear development, the official said.

Chang is the first Chinese defense minister to visit Seoul in nine years.

The ministry explained his visit is in reciprocity for Han's predecessor Kim Kwan-jin, Cheong Wa Dae's national security chief, who traveled to Beijing in 2011. Chang took office in 2013.

The visit comes as President Park Geun-hye and her Chinese counterpart Xi Jinping agreed to deepen their strategic cooperative partnership in the areas of security, economics, education and cultural exchanges during their summit in July last year.

"High-level talks between the two countries have increased as Seoul-Beijing relations were upgraded," said Kim Dae-young, a senior research fellow at the Korea Defense and Security Forum.

"From Beijing's point of view, South Korea has emerged as a better partner than the North."

After the meeting, Chang also met President Park at Cheong Wa Dae. Park called for Chinese cooperation in laying the groundwork for unification between the two Koreas.

http://www.koreatimes.co.kr/www/news/nation/2015/02/120_173006.html

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TASS Russian News Agency – Moscow, Russia

Test Launch of Russia's New Yars-Based Ballistic Missile Due in March

— Source

RS-26, known as Avangard and Rubezh, has improved combat capabilities and will carry multiple warheads
February 02, 2015

MOSCOW, February 2. /TASS/. A test launch of the new solid propellant inter-continental ballistic missile RS-26, based on the previous model RS-24 Yars has been scheduled for the middle of March, a source in the defense industry said.

"There are plans for launching the RS-26 toward the end of the quarter, some day in the middle of March," the source said.

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After the test launch a decision will be made whether the missile is apt for entering combat duty.

Earlier, as a source in the Russian defence industry has told TASS, there were plans to test the missile in December 2014. The launch had to be postponed due to financial constraints.

RS-26 is also known under the names of Avangard and Rubezh. It is to be lighter than Yars and have better combat parameters and a multiple warhead. The missile will be launched from mobile vehicles. There are no plans for deploying the missiles in silos.

According to earlier reports the RS-26 was to enter duty in 2015. The first missile will go operational near Irkutsk, the General Staff told TASS.

<http://itar-tass.com/en/russia/774819>

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Minneapolis Star Tribune – Minneapolis, MN

US set to Begin Destroying its Largest Remaining Cache of Chemical Weapons at Colorado Depot

By DAN ELLIOTT, Associated Press (AP)

February 4, 2015

PUEBLO, Colo. — The United States is about to begin destroying its largest remaining stockpile of chemical-laden artillery shells, marking a milestone in the global campaign to eradicate a debilitating weapon that still creeps into modern wars.

The Pueblo Chemical Depot in southern Colorado plans to start neutralizing 2,600 tons of aging mustard agent in March as the U.S. moves toward complying with a 1997 treaty banning all chemical weapons.

"The start of Pueblo is an enormous step forward to a world free of chemical weapons," said Paul Walker, who has tracked chemical warfare for more than 20 years, first as a U.S. House of Representatives staffer and currently with Green Cross International, which advocates on issues of security, poverty and the environment.

The work starts less than a year after chlorine gas killed 13 people in Syria in April 2014. International inspectors concluded last month that the gas had been used as a weapon.

Before the chlorine attack, 1,400 people were killed in a 2013 nerve gas attack in Syria, the U.S. said.

Pueblo has about 780,000 shells containing mustard agent, which can maim or kill, blistering skin, scarring eyes and inflaming airways. Mustard agent is a thick liquid, not a gas as commonly believed. It's colorless and almost odorless but got its name because impurities made early versions smell like mustard.

After nightmarish gas attacks in World War I, a 1925 treaty barred the use of chemical weapons, and the 1997 Chemical Weapons Convention set a 2012 deadline to eradicate them. Four nations that acknowledged having chemical weapons have missed the deadline: the U.S., Russia, Libya and Iraq.

The cost of safely destroying the weapons, and concerns about public health and the environment, have slowed the process, experts say. Violence in Iraq also has been an obstacle.

Libya expects to finish in 2016 and Russia in 2020, according to the Organization for the Prohibition of Chemical Weapons, which oversees the Chemical Weapons Convention. Iraq's completion date is unknown.

The U.S. amassed 30,600 tons of chemical weapons, both mustard agent and deadly nerve agent, much of it during the Cold War. The Army described them as a deterrent, and the U.S. never used them in war.

Nearly 90 percent of the U.S. stockpile has been eliminated at depots in Alabama, Arkansas, Indiana, Maryland, Oregon, Utah and Johnson Atoll in the Pacific, mostly by incineration.

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Coloradans worried, however, about mercury vapor from incineration, said Irene Kornelly, a member of the Pueblo Citizens Advisory Commission, a liaison group established by Congress. The opposition in Colorado and in Kentucky, where chemical weapons are stored at the Blue Grass Army Depot in Richmond, prompted Congress to order alternatives.

The Army will use two methods for the Pueblo stockpile. In March, the first of an estimated 1,400 shells that are leaking or otherwise damaged will be placed in a sealed steel chamber with walls up to 9 inches thick. Explosives will tear open the shells, and the mustard agent will be neutralized with chemicals.

The remaining hundreds of thousands of shells will be run through a partially automated, \$4.5 billion plant starting in December or January. It will dismantle the shells, neutralize the mustard agent in water, and then add bacteria to digest and convert the remaining chemicals. The end product can be disposed of at a hazardous waste dump.

The plant can process up to 60 shells an hour, but the explosion chamber can destroy just six shells a day.

Pueblo expects to finish the job in 2019 — more than 55 years after some of the shells there were produced.

Blue Grass won't start destroying weapons until 2016 or 2017, finishing in 2023, Army spokeswoman Kathy DeWeese said. All told, it's costing about \$11 billion to destroy remaining U.S. chemical weapons.

Blue Grass has 523 tons of chemical weapons, only about one-fifth as many as Pueblo, but it has nerve agent, and some of the mustard agent is so old it has solidified and is more difficult to deal with, DeWeese said.

Officials who oversee the Pueblo operation insist it is safe, citing years of careful planning and training, as well as the remote location — an empty expanse of sagebrush some 15 miles from the city's outskirts.

Army Lt. Col. Mike Quinn declined to discuss the specifics of security at the 36-square-mile depot, but signs warn, "Use of deadly force authorized."

Kornelly said she has no remaining concerns, but she's not ready to celebrate.

"I think once we start seeing the weapons go through, there'll be a feeling of accomplishment," she said. "Right now, everyone's on pins and needles."

<http://www.startribune.com/politics/national/290751261.html?page=all&prepage=1&c=y#continue>

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The Washington Free Beacon — Washington, D.C.

Defense Nominee Says US Set to Build INF Missile

Illegal Russian Cruise Missile Can Be 'Two-Way Street'

By Bill Gertz

February 6, 2015

Defense Secretary-designate Ashton B. Carter said this week he is prepared to counter Moscow's violation of a nuclear missile treaty by building U.S. nuclear cruise missiles.

During a nomination hearing Wednesday before the Senate Armed Services Committee, Carter said Russia needs to be told that treaty violations are a "two-way street"—indicating he is willing to build missiles to counter the Russian system if confirmed as defense secretary.

"To the question of what we're going to do about it, I think you have to remind Russia that this was a two-way street, that we signed a treaty that says you're not going to do this, and we're not going to do it either," he said.

"And if you don't want to have that treaty, why then you're absolved from your restrictions under that treaty, while we are too," Carter said.

The comments are likely to upset Moscow, which so far has refused to discuss the new cruise missile violation with U.S. officials. Instead, Russian officials have countered with charges that U.S. target missiles and drones violate the

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1987 INF treaty. The United States has rejected the Russian charges noting that the treaty does not cover those systems.

The Cold War arms treaty banned ballistic and cruise missiles with ranges of between 310 and 3,400 miles. It was agreed to by both states amid widespread anti-nuclear sentiment in Europe following deployment of U.S. ground-launched cruise missiles and Pershing II ballistic missiles and several Soviet INF missiles.

Sen. Kelly Ayotte (R., N.H.) raised the INF issue that she said grew out of Russia's "new mobile, nuclear, ground-launched cruise missile" that "is in direct violation of that 1987 treaty."

Ayotte said the illegal INF missile likely was being developed during 2009 negotiations on the New START arms treaty that was ratified a year later.

The Russian cheating, she said, "makes it harder for us to have these types of conversations with Russia and be able to trust anything they say."

The treaty breach upset the Obama administration's national security policy agenda that has focused heavily on reaching arms control agreements with the Russians. Military relations with Moscow, however, were cut off following the Russian military annexation of Ukraine's Crimea last year.

Carter stated during the hearing that he was told "quite clear" that Russia had violated the INF accord.

Thus a military response will include three options if Moscow fails to return to compliance in a verifiable way, he said.

"And I think that there are defensive steps that we can take, there are deterrent steps that we can take, and there are counterforce steps that we can take," Carter said.

"So we have military options too, if they really want to get into this kind of game."

The strategic calculus for both countries was that "we'd both be better off if we didn't do this," Carter said.

"That's why we agreed. But these are always two-way streets, and I think they need to be reminded it's a two-way street," he said.

Carter's comments contrast sharply with those of Rose Gottemoeller, the State Department's chief arms control policymaker, who this week suggested there are no immediate plans to implement military or other countermeasures to the INF treaty breach.

"We are in constant diplomatic touch with them about this matter," said Gottemoeller, undersecretary of state for arms control and international security said. "The good and positive thing is that the Russians continue to say they are committed to this treaty."

Gottemoeller declined to comment in an interview with *Roll Call* on the series of countersteps being readied within the administration.

"I'm not going to go beyond what we said in the hearing," she said. "I think that the most important message and most important message for the Russians is that any step they would take to deploy such intermediate-range nuclear missiles, they would not derive any military advantage from."

Gottemoeller was referring to a joint House committee hearing in December when Brian P. McKeon, deputy undersecretary of defense for policy, first disclosed that new intermediate-range U.S. cruise missile deployments are among the options being considered if the INF treaty is abandoned.

McKeon, like Carter, outlined the military options as ranging from "reactive defense, to counterforce, to counter value defense measures."

Carter's written answers also spelled out clearly the options being considered. They include "active defenses to counter intermediate-range ground-launched cruise missiles; counterforce capabilities to prevent intermediate-

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range ground-launched cruise missile attacks; and countervailing strike capabilities to enhance U.S. or allied forces.”

“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,” Carter stated.

The specific Russian missile that violated the accord has not been identified. However, military analysts have said it is believed to be the R-500, a cruise missile derived from the Iskander K and using the same mobile launcher as the ballistic missile but with a turbojet-powered cruise missile.

The U.S. response could be either a nuclear-armed missile or precision-guided conventionally armed missiles.

The latest national defense authorization bill passed by Congress and signed by the president in December requires that the Obama administration fully explain the Russian INF violation in a report to Congress within 90 days.

Mark Schneider, former principal director of forces policy at the Pentagon, said he is pleased the administration is considering missile deployments in response to the INF violation.

“Irrespective of whether we want to ‘save’ the INF treaty or protect ourselves against the consequences of the Russian violations, the Russians have to recognize that there are military consequences from arms control violations,” Schneider said in an email. “They will not do this unless we do something significant in response.”

Schneider said Russian INF non-compliance may extend beyond the illegal cruise missile to include a new intermediate-range ballistic missile, the RS-26.

In Brussels today, Defense Secretary Chuck Hagel said he met with NATO’s nuclear planning group and said “our discussions today were particularly important in light of Moscow’s violations of the Intermediate-Range Nuclear Forces Treaty” as well as the Ukrainian crisis, and stepped up nuclear bomber flights by the Russians.

Gottemoeller told Russia’s state-run Sputnik news outlet in December that “the Russians have not acknowledged our concern at all and I think an important first step is to acknowledge our concerns and get to work.”

“There’s no willingness to talk about our [U.S.] concerns. And that’s the crux of the issue,” she added.

<http://freebeacon.com/national-security/defense-nominee-says-us-set-to-build-inf-missile/>

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Yonhap News Agency – Seoul, South Korea

Carter Vows to Use 'Full Range of Capabilities' to Defend against N.K. Missiles

By Chang Jae-soon

February 5, 2015

WASHINGTON, Feb. 4 (Yonhap) -- The nominee for the next U.S. secretary of defense vowed Wednesday to use the "full range of capabilities" to defend against North Korean ballistic missiles, saying they could pose a "direct threat" to the country.

Ashton Carter made the pledge in a written answer submitted to the Senate Armed Services Committee for his confirmation hearing, saying he would deploy more ground-based missile interceptors in California and Alaska, regions that could fall within the North's missile ranges.

"North Korea's ballistic missile and weapons of mass destruction (WMD) capabilities clearly present a serious and direct threat to U.S. forces postured in the Asia-Pacific region as well as to our regional allies and partners," Carter said.

"These capabilities, although untested at longer ranges, could also pose a direct threat to the United States ...

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If confirmed, I will ensure that we draw upon the full range of our capabilities to protect against, and to respond to, these threats," he said.

North Korea's history of proliferation activities amplify the dangers of its asymmetric programs, he said.

In addition to deploying more missile interceptors, Carter also said he would enhance the Pentagon's ability to highlight and disrupt the illicit proliferation networks that North Korea uses and promote cooperation with partners to interdict shipments of proliferation concern.

North Korea's missile program has long been a key security concern in the region and beyond.

The communist nation is believed to have developed advanced ballistic missile technologies through a series of test launches. In its latest rocket launch, conducted in late 2012, the North succeeded in putting a satellite into orbit aboard a long-range rocket.

The test sparked fears that the North has moved closer to ultimately developing nuclear-tipped missiles that could potentially reach the mainland United States. The country has so far conducted three underground nuclear tests in 2006, 2009 and 2013.

Carter said the North remains "one of the most intractable security problems" for the United States. He pointed out the communist nation continues to take destabilizing actions, including nuclear and missile tests as well as the cyberattack against Sony Pictures.

He added the limited information on the North, leader Kim Jong-un and the regime's motivations "add to my concern."

"Despite the recent signals from both North and South Korea about openness to inter-Korean engagement, the U.S. should remain vigilant against the strong possibility that North Korea will use brinkmanship and provocations to try to coerce the United States and its allies and partners back into negotiations on its own terms," he said.

Carter also vowed to further strengthen the alliance with South Korea, saying the alliance is "the critical linchpin to deterring North Korean aggression and maintaining stability on the Korean Peninsula."

He rejected the North's recent offer to suspend nuclear tests if the U.S. and South Korea halt joint military exercises, saying the annual drills are "routine, transparent, and defensive exercises that are meant to strengthen military readiness and alliance preparedness."

"There is no equivalence between conducting these exercises and North Korean nuclear tests, which are violations of United Nations Security Council resolutions," he said.

Carter said the North's hack on Sony is "serious and deserving of a response" but that he does not believe it rises to the level of an "act of war."

<http://english.yonhapnews.co.kr/search1/2603000000.html?cid=AEN20150205000251315>

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TASS Russian News Agency – Moscow, Russia

Kim Jong Un: North Korea Ready to Confront any War, Including Nuclear Conflict

"To sink a U.S. aircraft carrier down to the sea bottom is quite probable," papers quoted Kim Jong Un as saying February 01, 2015

PYONGYANG, February 1. /TASS/. Kim Jong Un was in command of drills held by military formations of the Air Force and the Navy from the Korean People's Army, local papers reported on Sunday. The North Korean leader noted that the country "is ready to fight any war, including a nuclear one."

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War games focused on drills of a surprise strike by the Air Force and the Navy, including submarines, on an aircraft carrier of an imaginary enemy, if a warship appears on operational direction of the Korean People's Army.

North Korean military forces "should stage intensive military exercises seeking to destroy an imaginary aircraft-carrying strike grouping of aggressive forces of American imperialists."

"To sink a U.S. aircraft carrier down to the sea bottom is quite probable," papers quoted Kim as saying.

The North Korean leader, who heads the country's armed forces in the rank of marshal, was accompanied by a large group of military commanders at the drills.

The area of military exercises was not specified.

<http://itar-tass.com/en/world/774719>

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The Korea Herald – Seoul, South Korea

N. Korea Says It Won't Talk with 'Gangster-Like' U.S.

February 4, 2015

North Korea's top ruling organ on Wednesday declared a "retaliatory" campaign against the United States, threatening to use miniaturized nuclear weapons and cyber warfare means.

The National Defense Commission stressed Pyongyang is not interested in talks with Washington, which it claims is bent on bringing down the communist regime.

"Now that the gangster-like U.S. imperialists' military strategy towards the DPRK is inching close to the stage of igniting a war of aggression, the just counteraction of the army and people of the DPRK will be focused on inflicting the bitterest disasters upon the United States of America," it said in a English-language statement.

The DPRK is the acronym of the North's formal name, the Democratic People's Republic of Korea.

It strongly criticized President Barack Obama for introducing a set of additional sanctions on Pyongyang and publicly saying the isolated nation is doomed to collapse.

The commission also cited the U.S. plans to begin annual joint military drills with South Korea in March on the peninsula as a token of its hostile policy.

"It is the decision of the army and people of the DPRK to have no longer the need or willingness to sit at the negotiating table with the U.S. since the latter seeks to stamp out the ideology of the former and 'bring down' its social system," the commission said.

The North's military will ratchet up its "retaliatory action of justice" by use of every possible mean, including the nation's "smaller, precision and diversified" nuclear striking means and cyber warfare capabilities, it added.

The U.S. "should be mindful that the time of nightmares is coming nearer when they will meet the most disastrous, final doom on the U.S. mainland," the commission warned, saying the statement was issued at "the authorization," apparently meaning the instruction, of leader Kim Jong-un.

Pyongyang's renewed strong threat came days after the two sides lost a chance for dialogue. The U.S. offered bilateral talks in a third nation while its chief nuclear envoy Sung Kim was on a trip to Northeast Asia earlier this week.

But the North counter-proposed that Kim visit Pyongyang, which was rejected by Washington.

South Korea said it will continue efforts to improve ties with the North, despite the stand-off between Pyongyang and Washington.

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"There is no change in the government's basic stance that in separation (with the situation) it will strive to build trust between South and North Korea through dialogue and cooperation and developing inter-Korean relations, as well as bringing peace to the Korean Peninsula and establishing the ground for reunification," unification ministry's spokesman Lim Byeong-cheol said at a press briefing.

In recent weeks, U.S. officials have been active in seeking to assure media here that the allies are on the same page over the North Korea issue. Not long before the South's presidential panel suggested condition-free ministerial talks with the North, the Obama administration announced new sanctions on Pyongyang.

The world is paying keen attention to whether the secretive North has actually developed the technology to mount a nuclear bomb on a missile.

It has conducted three known underground nuclear tests in 2006, 2009 and 2013. It also succeeded in sending a long-range rocket into orbit in late 2012.

The North's cyber threat is another serious concern for the international community, with the U.S. saying its regime was behind a recent hacking of Sony Pictures. (Yonhap)

<http://www.koreaherald.com/view.php?ud=20150204000212>

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The Korea Times – Seoul, South Korea

US Intelligence Chief Warns NK Nuclear Test

By Kim Hyo-jin

February 4, 2015

The U.S. military's top intelligence officer warned Tuesday that North Korea is likely to conduct a nuclear test this year, according to the Voice of America (VOA), Wednesday.

The VOA reported that Lt. Gen. Vincent Stewart, director of the Defence Intelligence Agency, said that, "Pyongyang's constant development of nuclear weapons is posing a serious threat to the United States and its allies." He made the remark in a prepared statement for a House Armed Services Committee hearing on worldwide threats.

"We are concerned that it may conduct a nuclear test," the VOA quoted Gen. Stewart as saying.

His written testimony underscored that North Korea warned of an additional nuclear test last November as a response to the U.N. resolution against its state-perpetrated human rights violations.

It also mentioned that the isolated regime is putting efforts into developing long-range ballistic missiles that carry nuclear warheads, as well as strengthening the operational capabilities of its KN-08 Inter-continental Ballistic Missile (ICBM).

He also said that the North's conventional weapons are not as threatening. "This is why Pyongyang strives to strengthen deterrence by developing nuclear missiles," Gen. Stewart said.

Last week, a U.S. think-tank said North Korea appears to be trying to restart its main nuclear reactor after the facility lay idle for the past five months, raising concerns that the North may prepare to test another nuclear device.

Meanwhile, countries surrounding the Korean Peninsula are more actively engaging in talks to find solutions to Pyongyang's nuclear program.

While Washington is taking lead in efforts to revive the long-stalled six-party denuclearization forum, South Korea and U.S. officials met last Friday to discuss regional security issues, including the nuclear program.

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Seoul and Beijing also resumed talks this week over efforts to curb North Korea's nuclear weapons program. Hwang Joon-kook, South Korea's chief delegate to the six-party talks met his Chinese counterpart Wu Dawei in Beijing on Wednesday and discussed ways to resume dialogue with the Kim administration.

http://www.koreatimes.co.kr/www/news/nation/2015/02/116_173040.html

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Want China Times – Taipei, Taiwan

China Achieves Breakthrough in Pulse Weapons Technology

Staff Reporter

February 04, 2015

China has achieved a technological breakthrough that could help introduce pulse weapons to the People's Liberation Army's arsenal, reports the Global Times, a tabloid under the auspices of the Communist Party mouthpiece People's Daily.

According to the report, the Xian Institute of Optics and Precision Mechanics of the Chinese Academy of Sciences has successfully developed a third-generation X-ray pulsar simulation source. The technology, which can create an X-ray pulsar source in X-ray tubes to generate arbitrary waveform pulses, officially passed evaluation tests on Jan. 17.

The evaluation committee found that the creation's performance indicators were at an advanced international level and concluded that it is an advanced technology with original and practical applications that could lead to important economic and social benefits.

An X-ray pulsar consists of a magnetized neutron star in orbit with a normal stellar companion and is a type of binary star system. They are a class of astronomical objects that are X-ray sources displaying strict periodic variations in X-ray intensity with ranges that can vary from microseconds to several minutes.

As a natural beacon, X-ray pulsars have important applications in aerospace, astronomy, science and engineering. In terms of military applications, simulated X-ray pulsars may help China develop new weapons that can challenge America's dominance in the electromagnetic pulse (EMP) weapons sphere.

Traditional non-nuclear EMPs weapons produce a short burst of electromagnetic energy to disrupt or damage electronic equipment. Nuclear EMP weapons, which have been dubbed "the second atomic bomb," have a much wider range of impact as they produce an abrupt pulse of electromagnetic radiation resulting from a nuclear explosion. The electromagnetic pulse from non-nuclear EMP weapons come from within the weapon, while nuclear weapons generate EMP as a secondary effect. In terms of military applications, a nuclear EMP would be delivered via a nuclear warhead detonated hundreds of kilometers above the Earth's surface.

EMP weapons have begun to find more practical applications in top militaries around the world. During the 1991 Gulf War, the US carried and used EMP weapons on its E-8 Joint Stars aircraft to disrupt electronic command systems, which international analysts believe was one of the main advantages the US had over its enemy. In July 1992, high-powered microwave weapons were named as one of six key future arms technologies by the US Congress, with the US Navy, Army and Air Force each putting forth a high-powered microwave weapons development plan.

In March 1999, the US used microwave weapons during the NATO bombing of Yugoslavia, causing communication in certain areas to be disrupted for more than three hours. EMP weapons were then used to sever Iraqi state television broadcast signals in March 2003 during the Iraq War.

Apart from the US and Russia, countries developing high-powered microwave weapons include England, France, Germany and Japan.

<http://www.wantchinatimes.com/news-subclass-cnt.aspx?id=20150204000066&cid=1101>

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The Daily Express – London, U.K.

Intercepted Russian Bomber was Carrying a Nuclear Missile over the Channel

A RUSSIAN bomber intercepted over the Channel last week was carrying a nuclear missile designed to destroy Trident submarines, it emerged last night.

By Marco Giannangeli

Sunday, February 1, 2015

RAF Typhoon fighter jets were scrambled on Wednesday after two long-range TU-95 “Bear” bombers were detected flying over the English Channel.

The incident was last night described as “yet another in a series of deliberately provocative” measures by President Vladimir Putin which confirmed that Nato’s status had moved firmly from “rival to adversary”.

Sources within the Ministry of Defence last night revealed that one of the two long-range bombers was carrying at least one air-dropped “seek and find” nuclear warhead-carrying missile, designed to seek and destroy a Vanguard submarine.

Both Prime Minister David Cameron and Defence Secretary Michael Fallon were alerted after cockpit conversations confirming the bomber’s nuclear payload were intercepted by a Norwegian military listening post, and shared with the Ministry of Defence.

The missile was not armed, and the aircraft's crew would have required a direct order from President Putin before making it live.

The other bomber was said to have been acting in the role of “mothership”, overseeing the military exercise.

One senior RAF source said: “We downloaded conversations from the crew of one plane who used a special word which meant the would-be attack was a training exercise.

“They know that we can pick up their transmissions and it would only be of concern if the often used release weapon order was changed.

“We also knew from another source that one of the aircraft was carrying a nuclear weapon long before it came anywhere near UK airspace.”

On Friday Russia’s ambassador in London, Alexander Yakovenko, was summoned to account for the incident, which some experts suggest was deliberately timed to coincide with the launch of the official inquiry into the murder of Russian dissident Alexander Litvinenko.

The former KGB agent, who fled to Britain to become one of the Kremlin's most vocal critics, died from radiation poisoning in 2006 after drinking tea laced with polonium.

Last week’s security scare was branded an “escalation” of Russian aggression because Russian bombers do not usually fly so far south of Scotland, and happened a month after Foreign Secretary Philip Hammond said Britain was concerned about the “extremely aggressive probing” of its airspace by Russia.

More than 100 Russian aircraft were intercepted over the North Sea, the Baltic Sea and the Atlantic Ocean by Nato allies last year, three times more than during 2013. Eight of those flights were over Britain.

During the Cold War it was common practice for Soviet military aircraft to carry nuclear weapons, though the practise ended following the downfall of the Soviet Union in 1991. However, it was recently resumed by Moscow.

Experts said the latest manoeuvres showed Russia was “upping its game”.



"This continual and increasing probing of Nato airspace by these nuclear bombers and fighter aircraft, tankers and electronic aircraft by Russian is a pattern of increased pressure by Russia designed to remind the West and Nato that they remain a large nuclear power, and a serious military power with reach," said Justin Bronk of the Royal United Services Institute, last night.

"Russia now clearly perceives Nato not as a potential threat, but as an adversary.

"But this intimidation belies a misunderstanding of the way the West works. As far as our military is concerned, it is helpful for Putin to be stepping up these actions. It serves to remind the public at a time where defence budgets are under pressure that this threat is still real, active and is not going away."

Air Cmdre Andrew Lambert, of the UK National Defence Association and formerly a leading air power strategist, said: "Putin is making the point that he has nuclear weapons and will carry them wherever he wants and Nato just has to take it.

"We have reduced the number of or Typhoon squadrons to the bare minimum. They have the Quick Reaction Alert commitments, Nato's Baltic effort, and of course, the Falklands. So we are stretched three ways. We have too few air defence aircraft bearing in mind the commitments we now have.

"When the next round of defend cuts are discussed, it must be realised that we must have enough F-35s so that the Typhoons can concentrate on their primary role – the air defence of this country."

<http://www.express.co.uk/news/uk/555454/Intercepted-Russian-bomber-was-carrying-a-nuclear-missile-over-the-Channel>

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Sputnik News – Russian Information Agency

Russian Tu-95MC Bombers Flying Over Atlantic Are Unarmed

Source in the Russian Defense Ministry stated that military aircraft conducting flights over neutral waters are unarmed.

2 February 2015

MOSCOW, February 2 (Sputnik) – Russian military aircraft conducting flights over neutral waters are unarmed, a source in the Russian Defense Ministry told RIA Novosti on Monday.

Britain's The Daily Express earlier reported that one of two Russian Tu-95MC Bear bombers was armed with at least one nuclear warhead missile while flying over neutral waters above the Atlantic.

"We fly without weapons. This is some sort of disinformation, again we are being provoked," the source said.

On January 29, a Russian Air Force spokesman, Col. Igor Klimov, told RIA Novosti that the two Russian Tu-95MC strategic bombers, spotted near the UK airspace, were carrying out a planned 19-hour patrol flight over neutral waters.

British media suggested that UK authorities had summoned the Russian ambassador over the issue, as, according to the country's Foreign Office spokesperson, "the Russian planes caused disruption to civil aviation."

Klimov stressed that the flight was conducted in compliance with international regulations on the use of airspace over neutral waters and did not cross over any country's sovereign borders.

<http://sputniknews.com/military/20150202/1017646264.html>

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Reuters UK – London, U.K.

Insight - Russia's Nuclear Strategy Raises Concerns in NATO

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By Adrian Croft

Wednesday, February 4, 2015

BRUSSELS (Reuters) - Concern is growing in NATO over Russia's nuclear strategy and indications that Russian military planners may be lowering the threshold for using nuclear weapons in any conflict, alliance diplomats say.

NATO officials have drawn up an analysis of Russian nuclear strategy that will be discussed by alliance defence ministers at a meeting in Brussels on Thursday.

The study comes amid high tension between NATO and Russia over the Ukraine conflict and rising suspicions on both sides that risk plunging Europe back into a Cold War-style confrontation.

Western concerns have also been fuelled by increasingly aggressive Russian air and sea patrolling close to NATO's borders, such as two Russian "Bear" nuclear-capable bombers that flew over the English Channel last week.

The threat of nuclear war that once hung over the world has eased since the Cold War amid sharp reductions in warheads but Russia and the United States, NATO's main military power, retain massively destructive nuclear arsenals.

Russia's nuclear strategy appears to point to a lowering of the threshold for using nuclear weapons in any conflict, NATO diplomats say.

"What worries us most in this strategy is the modernisation of the Russian nuclear forces, the increase in the level of training of those forces and the possible combination between conventional actions and the use of nuclear forces, including possibly in the framework of a hybrid war," one diplomat said.

Russia's use of hybrid warfare in Ukraine, combining elements such as unmarked soldiers, disinformation and cyber attacks, has led NATO's military planners to review their strategies for dealing with Russia.

All the NATO countries, except France which is not a member, will meet on Thursday as part of NATO's Nuclear Planning Group, which NATO officials describe as a routine meeting focussing on the safety and effectiveness of NATO's nuclear deterrent.

IMPLICATIONS

But all 28 ministers, including U.S. Defense Secretary Chuck Hagel, will have a broader discussion of Russia's nuclear strategy over lunch. No immediate action is expected from NATO's side.

Ministers are likely to ask officials to look into the implications of Russia's nuclear strategy for the alliance, and only then could there be any consideration of whether any changes were needed to NATO's nuclear posture.

At a time of heightened tension with the West, Russia has not been shy about reasserting its status as a nuclear power.

President Vladimir Putin pointedly noted last August that Russia was a leading nuclear power when he advised potential enemies: "It's best not to mess with us."

A report by the U.S. Congressional Research Service last year said Russia "seems to have increased its reliance on nuclear weapons in its national security concept".

Russia has embarked on a multi-billion-dollar military modernisation programme and Russia's top general, Valery Gerasimov, said last week that support for Russia's strategic nuclear forces combined with improvements in conventional forces would ensure that the United States and NATO did not gain military superiority.

He said the Russian military would receive more than 50 new intercontinental nuclear missiles this year.

In December, Putin signed a new military doctrine, naming NATO expansion as a key risk. Before the new doctrine was agreed, there had been some calls from the military to restore to the doctrine a line about the right to a first nuclear strike.

DOCTRINE

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This was not included in the new doctrine, however, which says Russia reserves the right to use nuclear weapons in response to a nuclear strike or a conventional attack that endangered the state's existence.

NATO's 2010 "strategic concept" says deterrence, "based on an appropriate mix of nuclear and conventional capabilities, remains a core element of our overall strategy."

Washington and Moscow have traded accusations that the other has violated a Cold War-era arms control agreement.

The United States accuses Moscow of violating the 1987 Intermediate-Range Nuclear Forces treaty by testing a ground-launched cruise missile. Russia argues that Washington's use of drones and other intermediate-range arms amounts to a violation of the treaty.

A senior NATO official said Russia's Zapad exercise in 2013 was "supposed to be a counter-terrorism exercise but it involved the (simulated) use of nuclear weapons".

The Arms Control Association, a Washington-based advocacy group, estimates Russia has about 1,512 strategic, or long-range, nuclear warheads, a further 1,000 non-deployed strategic warheads and about 2,000 tactical nuclear warheads.

Tactical nuclear weapons can include short-range missiles and artillery shells, mines and bombs.

The United States had 4,804 nuclear warheads as of September 2013, including tactical, strategic, and non-deployed weapons, according to ACA.

Among other NATO allies, France has fewer than 300 operational nuclear warheads and Britain has fewer than 160 deployed strategic warheads.

Additional reporting by Tim Heritage in Moscow; Editing by Giles Elgood

<http://uk.reuters.com/article/2015/02/04/uk-ukraine-crisis-russia-nuclear-insight-idUKKBN0L825A20150204>

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Sputnik News – Moscow, Russia

Russia's Military Doctrine: Facts and Details

On February 5, 2010, Russia's president approved a new military doctrine.

5 February 2015

MOSCOW (Sputnik) — A military doctrine is a theoretically substantiated and officially adopted long-term set of guidelines for the organizational development of the armed forces, use of military force and achievement of military objectives.

A military doctrine is subordinate to military policy, being its chief derivative. It is the scientific and practical baseline for developing military concepts, programs, plans and other official documents that extend and elaborate on its contents.

Russia's military doctrine defines the political, strategic and economic foundations of its military security. It is one of Russia's main strategic planning documents and a system of officially accepted views on provisions for the country's armed defense.

The military doctrine is aimed at identifying and addressing Russia's main threats. It is periodically revised to take into account geopolitical changes at home and abroad.

Before 1991, Russia, being a constituent republic of the USSR, was guided by the Soviet Union's pronouncedly defensive military doctrine that was approved in 1987. This doctrine became null and void after the USSR's disintegration.

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Russia adopted the doctrine titled "The Main Premises of the Transition-Period Military Doctrine of the Russian Federation" in 1993.

It stated that Russia had no potential adversaries. Russia committed to avoiding the use of military force for anything other than self-defense. Nuclear weapons were regarded as a political deterrent rather than a means of warfare. The "reasonable sufficiency" principle guided the policies with regard to the country's military potential that was to be maintained at a level commensurate with existing threats. The doctrine did not mention NATO at all.

However, NATO's expansion and its operations in Yugoslavia in 1999 necessitated a number of adjustments to the doctrine.

The Russian Federation's first comprehensive military doctrine was approved in 2000. It systematically and firmly described the contemporary military-political situation, its destabilizing factors and sources of threats, defining any buildup of forces by other states near Russia's borders as "the main external threat."

A new military doctrine was adopted in 2010, because the nature of threats to the country's defense security had changed substantially in the years since its last revision.

The 2010 military doctrine is divided into four parts: Terminology and general provision; military threats and threats to Russia; the country's military policy; military-economic support for national defense.

According to the doctrine, the likelihood of a large-scale war involving Russia has subsided, but military threats are growing in intensity in a number of sectors.

The main military threats listed in the document are the strengthening of NATO through the acceptance of new members, the deployment of anti-missile defense systems, aggravation of military-political tensions and exacerbation of interstate relations, as well as the creation of conditions for the use of military force.

The establishment and training of illegal armed groups, their operation in the Russian Federation or in the territory of its allies, are also classified as military threats to Russia. Such threats also include provocative demonstrations of military force in the form of military exercises held in states bordering Russia or its allies, intensified activities of armed forces of certain states or groups of states involving partial or full-scale mobilization and the conversion of these states' government and military command-and-control agencies to wartime operation.

The doctrine is aimed at the peaceful and nonviolent prevention and settlement of crises and conflicts. Russia is prepared to defend and uphold not only its own national interests and security, but also those of its allies.

The main distinction of this doctrine from its predecessor (2000) is that it allows the country's armed forces to be deployed outside Russia's borders in order to defend its interests and citizens, and to maintain international peace and security. The Russian president is empowered by law to decide on the use of the armed forces outside Russia.

The military doctrine emphasizes that nuclear weapons will remain an important deterrent against large-scale and regional wars. According to the document, "The Russian Federation reserves the right to use nuclear weapons in response to nuclear weapons and other types of mass destruction weapons being used against it and/or its allies, as well as in the case of a conventional aggression against the Russian Federation, which jeopardizes the very existence of the state." This language is based on the principle of "defensive nuclear containment" and does not presuppose the delivery of a "preventive" or a "preemptive" nuclear strike.

According to the military doctrine, the main priorities for the development of the armed forces are the improvement of its air defense system and the creation of an aerospace defense system. Other priorities include improving the image of military service and better preparing Russian citizens for military service.

The country's focus on defense-related military-economic efforts is possible because of the high level of financial and material-technical support given to the military to meet its targets.

A separate section of the doctrine is dedicated to the country's military-industrial complex and yet another section concentrates on the Russian military's political and technical cooperation with foreign states.

Issue No.1151, 06 February 2015

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According to the doctrine, its provisions may be adjusted to take into account changes in the nature of military threats, military security and defense operations, and the state of the country's development.

The military doctrine was amended in 2014, when new threats emerged, specifically NATO's expansion in the direction of Russia's borders and its plans to develop a global missile defense system and deploy strategic weapons in outer space.

On December 26, 2014, the Russian president endorsed the updated military doctrine.

Its main provisions remain the same, but there are new clauses on securing Russia's interests in the Arctic and on allied relations with Abkhazia and South Ossetia. The new aspects of the military doctrine include defining operations by foreign private military companies in the vicinity of Russia's borders as an external threat. The same applies to regimes established in neighboring states, whose policies threaten Russia's interests, and to the subversive activities of foreign intelligence agencies or their coalitions against Russia.

The document notes that military is facing more domestic dangers and threats and is increasingly dealing with cyberwarfare threats.

Russia regards expanding the range of its partner states, including members of BRICS (a new element in the doctrine), CSTO, CIS, OSCE and SCO, as a move that will help to contain and prevent military conflicts.

<http://sputniknews.com/military/20150205/1017806678.html>

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TASS Russian News Agency – Moscow, Russia

Russia to Destroy over 2,800 Tonnes of Chemical Weapons this Year

Five Russian chemical weapons destruction facilities, which fulfilled the state defense order ahead of schedule last year, resumed their work in January 2015

February 05, 2015

IZHEVSK, the Udmurt Republic, February 5 /TASS/. Russia will destroy more than 2,800 tonnes of chemical weapons in 2015, Colonel General Valery Kapashin, the head of the federal agency for safe storage and destruction of chemical weapons, told TASS on Thursday. Kapashin said the agency's main task in 2015 was to destroy 2,807 tonnes of toxic chemical matters as part of the state defense order.

By late 2014, Russia had eliminated 84.7% of its stockpiles of chemical weapons; the figure is expected to rise to 91.2% by December 2015 bringing the total amount of destroyed toxic chemical matters to 36,500 tonnes.

Five Russian chemical weapons destruction facilities, which fulfilled the state defense order ahead of schedule last year, resumed their work in January 2015: Pochev (the Bryansk region); Kizner (the Udmurt Republic); Maradykovsky (the Kirov region); Leonidovka (the Penza region) and Shchuchye (the Kurgan region).

The Pochev, Leonidovka, Maradykovsky and Shchuchye facilities will destroy their stockpiles of toxic chemical matters by later 2015. Only one chemical weapons destruction facility - Kizner-will continue operation after that time. By January 29, 753 tonnes or 13.1% of toxic chemical matters had been destroyed at Kizner.

<http://itar-tass.com/en/russia/775796>

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Al Arabiya – Dubai, U.A.E.

Rowhani Slams Hardliners of 'Cheering On' Other Side in Atom Talks

Reuters, Dubai

Saturday, 31 January 2015

Issue No.1151, 06 February 2015

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Iranian President Hassan Rowhani, growing frustrated with hardline resistance to a nuclear deal with the West, accused opponents on Saturday of effectively “cheering on” the other side in Tehran’s grueling negotiations with world powers.

Soon after his 2013 election victory over conservative hardliners, the pragmatist Rowhani set out to end a 12-year nuclear stand-off with the West and thereby secure the lifting of tough sanctions that have crippled Iran’s oil-based economy.

Iran’s ongoing talks with the United States, China, Russia, France, Germany and Britain have gone on for about 14 months and missed a self-imposed November 2014 deadline for a final comprehensive agreement that would limit Iran’s nuclear energy capacity in exchange for a phased lifting of sanctions.

Western powers suspect Iran is enriching uranium to develop a nuclear weapons capability and want strict curbs and intrusive U.N. inspections to prevent any such outcome. Iran says it seeks only peaceful energy from enrichment.

Rowhani, faced with rising popular concern over his unfulfilled election pledges to fix the economy, blamed hardline interference in part for the talks’ halting progress.

“The other side applauds their own, but here in our country, it is not clear what (the critics) are doing. It is as if they are cheering on the rival team,” Rowhani he told a public gathering, quoted by the official IRNA news agency.

“And when we ask them what they are going, they answer: ‘We are criticizing and criticism is a good thing ... This is not criticism, it is sabotage of national interests and favor for partisan politics,’” he said.

“Criticism is not about booing, it is not about slander and character assassination. Criticism is about showing a better and clearer way so that (we can) reach our goals faster.”

Hardline sentiment is centered in the security establishment led by the elite Revolutionary Guards and in the powerful Shi’ite Muslim clergy.

Supreme Leader Ayatollah Ali Khamenei, Iran’s ultimate political authority, has so far backed the nuclear talks but has also continued to denounce foreign “enemies” and “the Great Satan” to reassure hardliners for whom anti-U.S. sentiment has always been integral to Iran’s Islamic Revolution.

On the Western side, the most significant opponents of nuclear deal making with Iran are hawks in the U.S. Congress who want to harden sanctions legislation.

Under an interim 2013 accord, Iran halted some sensitive nuclear activity and won limited sanctions relief. The new deadline for a final settlement is June 30.

<http://english.alarabiya.net/en/News/middle-east/2015/01/31/Rouhani-accuses-Iranian-hardliners-of-cheering-on-other-side-in-atom-talks.html>

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FARS News Agency – Tehran, Iran
Monday, February 02, 2015

Senior Negotiator: Iran-G5+1 Talks in Sensitive Stage

TEHRAN (FNA) - Iranian Deputy Foreign Minister Seyed Abbas Araqchi underlined that the ongoing negotiations between Iran and the Group 5+1 (the US, Russia, China, France and Britain plus Germany) are in a critical phase now.

"The Iran-G5+1 talks are at a sensitive stage and the talks will be pursued with a faster momentum in the coming days," Araqchi, also a senior negotiator in talks with the world powers, said on Monday.

He reiterated that the two sides continue to have differences over some topics.

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The senior negotiator stressed that Iran is pursuing the talks with good will and firm resolve, and stressed that the talks will produce desirable results if the western parties show pragmatism and grow realistic.

"We should see the good will of the (opposite) negotiating sides before a comprehensive agreement can be reached," he added.

The remarks came after the US congress (mostly grabbed by the Republicans) threatened to impose new sanctions against Iran, an issue which has been described as a redline by Tehran in the interim nuclear agreement reached with the world powers in November 2013.

In response Iran's Foreign Minister Mohammad Javad Zarif and Parliament Speaker Ali Larijani warned that the Iranian legislature would reciprocate any new US sanctions with intensifying nuclear activities, including enriching uranium to the 60% grade for industrial use.

Earlier today, over 220 Iranian lawmakers signed the bill of a law which necessitates the government to speed up the country's nuclear activities in case the US imposes any further sanctions on Tehran.

"The bill requires the government to annul the Geneva Interim agreement (inked by Iran and the world powers in November 2013) and resume all its nuclear activities in case of intensified US sanctions," Chairman of the parliament's Nuclear Committee Ebrahim Karkhaneyee told FNA earlier today.

"Based on the bill, removal of all sanctions at once is the Islamic Republic of Iran's precondition for implementation of any (possible) comprehensive nuclear deal," he added.

Karkhaneyee underlined that 220 MPs have so far inked the bill which will be submitted to the parliament's Presiding Board in the next few days.

The 10th round of negotiations between Iran and the six world powers was held in Vienna from November 18 to 24, where the seven nations decided to extend the talks until July after they failed to strike an agreement.

The latest round of the nuclear talks between the two sides was held at the level of deputy foreign ministers in Geneva, Switzerland, on January 18.

The two sides decided to continue their talk early in February.

Both Iran and the Group 5+1 (the US, Russia, China, Britain and France plus Germany) negotiators have underlined that cutting a final deal before the July 10 deadline is possible.

<http://english.farsnews.com/newstext.aspx?nn=13931113001753>

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FARS News Agency – Tehran, Iran
Monday, February 02, 2015

Iran Sends New Home-Made Satellite into Orbit

TEHRAN (FNA) - Iran sent its fourth home-made satellite, Fajr (Dawn), into orbit on Monday.

The satellite, completely built by Iranian scientists, was launched on the second day of the national ceremonies marking the 36th anniversary of the victory of the Islamic Revolution in Iran (1979).

Iranian Defense Minister Brigadier General Hossein Dehqan felicitated the Iranian government and nation on the successful launch and orbiting of the satellite, but did not provide any further details.

The fully home-grown satellite which has been built by experts at the defense ministry's Aerospace Industries Organization proves the Islamic Republic of Iran's high capabilities to launch satellites into orbit, General Dehqan said.

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"It is also another indicator of the country's flourishing scientific growth in the state-of-the-art technologies," he added.

The Iranian satellite was sent into the orbit - at the altitude of 450km - on the back of the home-made Safir-e Fajr launcher.

Iranian Vice-President for Science and Technology Sorena Sattari announced on Sunday the country's plans to orbit a new home-made satellite.

"We will launch a satellite this week," Sattari said in Tehran without revealing any further detail or the exact launch date.

In October, Deputy Head of Iran Space Agency (ISA) Hamid Fazeli announced that Tehran was preparing to orbit three new home-made satellites, called Zafar (Triumph), Tolou (Sunrise) and Pars, from more powerful launchers and on the back of bigger carriers in the near future.

"Launching the under-construction satellites, including Sharifsat and Nahid, are also among the short-term plans of the ISA," he added.

Also, Iranian Vice-President for Executive Affairs Mohammad Shariatmadari told reporters in the same month that Iran hoped that its Sharifsat satellite would be sent into orbit this year.

Fazeli had announced in May that Iran planned to launch three home-made monitoring satellites into orbit in the next Iranian calendar year (March 2015-March 2016).

"Zafar, Tolou and AUT Sat will be sent into space onboard the Simorq satellite carrier," he said.

Fazeli noted that the satellites would transmit images of the Earth's surface to ground stations.

Zafar will be sent into a geostationary orbit, which is a circular orbit around 36,000 kilometers (22,320 miles) above the Earth's equator.

The satellite will reportedly have a lifespan of one year and six months, and will capture images and transmit them to stations on earth.

Tolou satellite will also carry out remote sensing and topography missions, and will travel in an orbit of 500 kilometers above from the Earth's equator.

<http://english.farsnews.com/newstext.aspx?nn=13931113001060>

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Tasnim News Agency – Tehran, Iran

Nuclear Deal Possible If It Includes Removal of All Sanctions: Zarif

February 03, 2015

TEHRAN (Tasnim) – Iran's Foreign Minister Mohammad Javad Zarif said there can be a nuclear agreement between Iran and world powers if the text of the deal ensures removal of all anti-Iran sanctions.

"An agreement is possible if two issues, namely the peaceful nature of Iran's nuclear program and the total removal of (anti-Iran) sanctions are included in the final text," Zarif said Tuesday in a joint press conference with Henry Oryem Okello, acting foreign minister of Uganda.

He underlined that Tehran's nuclear activity is peaceful and that developing nuclear energy is Iran's inalienable right under the nuclear Non-Proliferation Treaty (NPT).

Iran and the Group 5+1 (Russia, China, the US, Britain, France and Germany) are in talks to hammer out a final agreement to end more than a decade of impasse over Tehran's nuclear energy program.

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In the latest round of negotiations, deputy foreign ministers from Iran and the European members of the G5+1 held a one-day round of talks in the Turkish city of Istanbul on Thursday.

Following an interim nuclear deal signed in Geneva in November 2013, two deadlines for a final, comprehensive deal have been missed, and now a third one is looming on July 1.

Elsewhere in his remarks at the press conference, Zarif called for expansion of cooperation between Iran and African countries, including Uganda.

Henry Oryem Okello, for his part, highlighted the good relations between Tehran and Kampala and said bilateral ties should develop in all areas.

He also hoped that the outcome of Iran-G5+1 nuclear talks will be in the interest of the two sides.

Zarif, heading a high-ranking political and economic delegation, started a tour of Africa on Sunday. Earlier as his first destination, he paid a visit to Kenya and held a meeting with the country's foreign minister.

He is scheduled to visit Burundi and Tanzania after Uganda. He will hold talks with his counterparts and other top-ranking officials of the countries to review issues of mutual interest, as well as regional and international issues.

<http://www.tasnimnews.com/English/Home/Single/643385>

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Islamic Republic News Agency (IRNA) – Tehran, Iran

Araqchi: Iran's Missile Program Non-Negotiable

3 February 2015

Tehran, Feb 3, IRNA – Senior Iranian nuclear negotiator Abbas Araqchi said Iran's missile program is not negotiable with any country.

He made the remarks in reaction to the remarks of the US State Department spokesman who commented on launching Iran's Fajr satellite on Sunday.

He stressed the defensive nature of Iran's missile program and said Iran is by no means going to negotiate its defense issues with any foreigners.

He said the launching of Fajr satellite which was accomplished by domestic experts and indigenous technology serves to promote the long-term programs of Iran to sustain its presence in the space for telecommunication purposes.

The Safir satellite-carrier which launched Fajr in the orbit was also designed and built by the Iranian Defense Ministry experts with totally peaceful purposes, he added.

The Foreign Ministry official stressed that Iran has never before, during its nuclear negotiations with western countries, allowed any discussions of its peaceful missile program.

Such a thing will not happen in the future either, Araqchi added.

<http://www.irna.ir/en/News/81490902/>

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The Guardian (U.S. Edition) – New York City, NY

Iranian President Says Nuclear Deal with the West is Getting Closer

Mehr news agency quotes Hassan Rouhani saying sides have 'narrowed the gaps' as second report emerges of uranium enrichment deal with US

By Julian Borger and Saeed Kamali Dehghan

Issue No.1151, 06 February 2015

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Tuesday, 3 February 2015

President Hassan Rouhani has said that a nuclear deal with the west is getting closer, as a report emerged of a possible compromise between American and Iranian negotiators over uranium enrichment.

After meeting the heads of the country's parliament and judiciary, Rouhani was quoted by the Mehr news agency as saying: "We have narrowed the gaps," adding that although "some issues and differences remain ... The west has realised that it should recognise the rights of the Iranian people."

Even Ali Larijani, the parliamentary speaker and a noted hardliner on nuclear talks, declared himself "not pessimistic" about the trajectory of the negotiations.

Nuclear talks between Iran and six major powers are due to resume later this month in Geneva ahead of a March deadline for arriving at a basic framework agreement. A comprehensive permanent settlement would be reached by the end of June.

The Associated Press reported on Tuesday that US and Iranian negotiators have been discussing a compromise that could break the main impasse to an agreement over Iran's capacity to enrich uranium. Iran has been adamant that it will not accept a major reduction to its current capacity of about 10,000 operational centrifuges. Meanwhile, the US and its allies have been pushing for less than 4,000, on the grounds that any greater capacity would allow Iran to enrich enough weapons-grade uranium for a bomb within a year, should Tehran decide to build a nuclear arsenal.

The possible compromise under consideration, according to the AP, would see most of the 10,000 centrifuges in operation left in place but reconfigured so that they would be less productive. One way of doing that would be to spin the centrifuges more slowly. Other measures would be agreed upon to reassure the west that Iran could not make a warhead quickly, such as reducing its stockpile of uranium hexafluoride gas – the form in which uranium can be enriched by centrifuge.

Some observers have cautioned against interpreting the report as a sign of an imminent breakthrough.

"I think this report is reading too much into some of the innovative ideas that have been on the table, but not yet finalized," said Ali Vaez, an Iran analyst at the International Crisis Group. "The negotiators are no longer moving in circles. It's more like an upward spiral now. But there is no silver bullet solution that can all of a sudden resolve the enrichment issue."

Enrichment capacity is not the only sticking point at the talks. Iran is also demanding that the west lift sanctions faster than the timetable that has been put forward.

The deadline for the negotiations to be completed has already been extended seven months, after the parties failed to reach an accord in Vienna last November. Rouhani's government in Tehran and the Obama administration in Washington are alike negotiating under heavy pressure from hardliners in both camps.

The Republican majority in Congress has asked the Israeli prime minister, Binyamin Netanyahu, to come to Washington next month to make the case against a deal, in what is widely seen a powerful challenge to Obama's authority, but the White House has managed to persuade congressional Democrats to fend off a vote on new sanctions until the end of March, pending the outcome of the Geneva talks.

Iran's parliament, the Majlis, meanwhile, voted on Tuesday to fast-track its own retaliatory legislation, which would, if adopted, escalate Iran's nuclear programme and jettison an interim deal reached in 2013, known as the Joint Plan of Action, that was designed to impose limits on enrichment and other activities until a comprehensive agreement could be reached.

Under the legislation being prepared in the Majlis, Rouhani's government would be obliged to respond to any new US sanctions by expanding uranium enrichment and accelerating development of the heavy water reactor at Arak, which is capable of producing plutonium.

<http://www.theguardian.com/world/2015/feb/03/iranian-president-nuclear-deal-west>

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Business Insider – New York City, NY

Saudi Arabia and Pakistan May Have Just Renewed a Secret Nuclear Weapons Pact

By Simon Henderson, The Washington Institute For Near East Policy
February 4, 2015

The visit by the chairman of Pakistan's Joint Chiefs of Staff Committee will likely prompt concern in Washington and other major capitals that Saudi Arabia and Pakistan have reconfirmed an arrangement whereby Pakistan, if asked, will supply Saudi Arabia with nuclear warheads.

The main meeting on Gen. Rashid Mahmoud's itinerary was with King Salman — the topics discussed were reported as "deep relations between the two countries and ... a number of issues of common interest."

General Rashid also saw separately Defense Minister Prince Muhammad bin Salman — who presented him with the King Abdulaziz medal of excellence — as well as Deputy Crown Prince and Interior Minister Muhammad bin Nayef and Minister of the National Guard Prince Mitab bin Abdullah.

The only senior Saudi absent from the meetings appears to have been Crown Prince Muqrin.

For decades, Riyadh has been judged a supporter of Pakistan's nuclear weapons program, providing financing in return for a widely assumed understanding that, if needed, Islamabad will transfer technology or even warheads.

It has been noticeable that changes in leadership in either country have quickly been followed by top-level meetings, as if to reconfirm such nuclear arrangements. Although Pakistani nuclear technology also helped Iran's program, the relationship between Islamabad and Riyadh has been much more obvious.

In 1999, a year after Pakistan tested two nuclear weapons, then Saudi defense minister Prince Sultan visited the unsafeguarded uranium enrichment plant at Kahuta outside Islamabad — prompting a US diplomatic protest.

Last year, as Riyadh's concern at the prospect of Iranian nuclear hegemony in the Gulf grew, Pakistan's chief of army staff, Gen. Raheel Sharif, was a guest of honor when Saudi Arabia publicly paraded its Chinese CSS-2 missiles for the first time since they were delivered in the 1980s.

Although now nearly obsolete, the CSS-2 missile once formed the core of China's nuclear force. Pakistan's first nuclear devices were based on a Chinese design.

Pakistan's prime minister, Nawaz Sharif, visited the kingdom January 23 for the funeral of King Abdullah and had also been there a couple of weeks earlier to pay his respects to the ailing monarch.

The civilian leader and his military commanders have an awkward relationship — in an earlier term of office, Nawaz Sharif was overthrown in a military coup and sent into exile in Saudi Arabia — but Pakistan's nuclear program seems above any civil-military partisanship.

The visit by General Rashid comes a day after Pakistan announced the successful flight-testing of its Raad air-launched 220-mile-range cruise missile, which reportedly is able to deliver nuclear and conventional warheads with pinpoint accuracy.

While chairing his first cabinet meeting as prime minister yesterday, King Salman announced there would be no change in Saudi foreign policy.

In its own way, today's top-level meetings with the Pakistani military delegation seem to confirm this statement, adding perhaps an extra awkward complication to the Obama administration's effort to secure a diplomatic agreement with Tehran over Iran's nuclear program.



<http://www.businessinsider.com/saudi-arabia-and-pakistans-nuclear-weapons-pact-2015-2>

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Tasnim News Agency – Tehran, Iran

Iran to Install More Centrifuges Should Nuclear Talks Fail

February 05, 2015

TEHRAN (Tasnim) – Iranian Foreign Ministry's Director General for the Political and International Affairs warned that in case nuclear talks with world powers end without a deal, Iran could install more centrifuges.

“Naturally, if there is no agreement on the issue (of Iran’s nuclear program) then both sides can return back to their previous positions,” Hamid Baedinejad said in an interview with Russia Today, adding “Iran can continue to develop its nuclear program from the perspective that benefits the country’s national interests. Iran will continue its development and we will install more centrifuges.”

The Iranian diplomat stressed that negotiations with G5+1 on Iran’s civilian nuclear program have reached a critical and sensitive stage.

Iran and the Group 5+1 (Russia, China, the US, Britain, France and Germany) are in talks to hammer out a final agreement to end more than a decade of impasse over Tehran’s nuclear energy program.

In the latest round of negotiations, deputy foreign ministers from Iran and the European members of the G5+1 held a one-day round of talks in the Turkish city of Istanbul last Thursday.

Following an interim nuclear deal signed in Geneva in November 2013, two deadlines for a final, comprehensive deal have been missed, and now a third one is looming on July 1.

Elsewhere in his remarks, Baedinejad warned against attempts by US Congress to impose new sanctions on Iran.

A US Senate Committee cleared a bill in the end of January, allowing for new sanctions to be imposed on Iran, if talks fail and no agreement is signed.

Earlier, US President Barack Obama swore to veto any new sanctions imposed on Iran, stating that the likelihood of discussions collapsing will be very high if Washington persists with its implementation.

Iran’s parliament has devised retaliatory plans should the US introduce fresh embargos.

On Tuesday, Iranian lawmakers voted in favor of the urgency of discussing a proposal that will require the administration to activate nuclear enrichment facilities in accordance with Article 4 of the Non-Proliferation Treaty (NPT) if any new sanctions are imposed on Tehran by the United States.

<http://www.tasnimnews.com/English/Home/Single/645129>

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Want China Times – Taipei, Taiwan

India's Agni-5 ICBM Gets Bad Review from Hong Kong Outlet

Staff Reporter

February 02, 2015

India has achieved its third successful launch of its Agni-5 intercontinental ballistic missile on Jan. 31, the website of China's People's Daily reports, though ifeng, the website of Hong Kong's Phoenix New Media, cast doubt on the ICBM's ability to carry nuclear warheads and be launched from vehicles.



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The BBC said India launched the missile from Wheeler Island off the coast of the eastern state of Odisha. Unlike its previous two launches in 2012 and 2013, the 5,000km-range missile was launched from a vehicle.

The indigenous land-to-land ballistic missile can carry a one-ton nuclear warhead. It is 17 meters in length, weighs 50 tons and is propelled by a three-stage rocket and solid fuels. Its range could cover the whole of China and almost all of Western Europe.

The Agni-5 makes India the sixth country in the world after the United States, Russia, France, China and Britain with the ability to produce intercontinental ballistic missiles.

Ifeng said a few improvements have been made from the missile's predecessor Agni-3 such as reducing its diameter and extending its range to 5,000 km. However, the missile is likely to still be too large for mobile launch and requires long preparation for a launch. The Hong Kong outlet described the missile as India's desperate attempt to make China concerned and make up for its technological shortcomings from the Agni-3.

The Agni-5 is also likely to be mounted on a launcher with a severely imbalanced structure, like the Agni-3, ifeng said, compared to launchers made by China and Russia which connect chassis and cannon.

Ifeng further said that the missile might strictly not be considered an intercontinental ballistic missile at all given its still limited range and the fact that it can only carry conventional warheads. The missile was also not under full control during the three test launches, the Hong Kong news outlet said.

<http://www.wantchinatimes.com/news-subclass-cnt.aspx?cid=1101&MainCatID=11&id=20150202000112>

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Defense News – Tysons Corner, VA

Pakistan Tests Cruise Missile

By Usman Ansari

February 3, 2015

ISLAMABAD — Monday's test of the Ra'ad air-launched cruise missile may have been designed to check the effectiveness of an upgrade, according to analysts.

The test was announced in a press release by the military's media arm, Inter Services Public Relations. It provided few details, only saying, "Pakistan conducted a successful Flight Test of the indigenously developed Air Launched Cruise Missile (ALCM) Ra'ad."

This test means the Hatf/Vengeance VIII Ra'ad (Thunder) has now been officially tested five times since 2007. It is generally comparable to the Anglo/French Storm Shadow or US AGM-158 joint air-to-surface standoff missile, but exact specifications are not available.

Analyst, author and former Air Commodore Kaiser Tufail said, "The test firing was a typical combo of a technical upgrade timed with political signaling, something that both India and Pakistan have turned into an art form."

Mansoor Ahmed, lecturer in the Department of Defence and Strategic Studies at Islamabad's Quaid-e-Azam University, who specializes in Pakistan's nuclear program and its delivery systems, said the test was not in answer to India's test-firing of its Agni V intermediate range ballistic missile.

The Agni V was test fired on Saturday.

"I am not sure if this is a tit-for-tat response," he said. "The fact that it is a 350 kilometer vs. a 5,000-8,000 kilometer test reflects Pakistan's emphasis on credible minimum deterrence with only an India-centric posture, while India is clearly moving far beyond the requirements of a minimum deterrent driven by global power projection ambitions."

Instead, he believes the test was part of ongoing efforts on "improving the effectiveness and validating the enhanced operational parameters of existing delivery systems that comprise the country's nascent triad."

Issue No.1151, 06 February 2015

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He added, "Ra'ad and the land and sea versions of the Babur cruise missiles offer diversification in targeting options, greater operational and deployable flexibility and increase the overall survivability of its deterrent force."

He says the two cruise missiles are especially important for Pakistan's nascent "posture of full spectrum deterrence with added emphasis on counter-value targeting to offset India's strategic and conventional force modernization," which are integral aspects of India's "emerging proactive operations strategy."

Ra'ad is claimed to be operational, but is such a critical weapon it is still somewhat cloaked in secrecy.

Ahmed, however, said Ra'ad may have "finally matured as an operational and deployable system," but "this might also be a batch test coupled with the possible completion/accomplishment of required miniaturization of suitable warheads for this system. Hence this test."

He believes that aside from technical improvements, the timing is significant in terms of its non-conventional strike capabilities.

"Range remains the same; the only thing that might have improved is accuracy, guidance and control parameters, etc. Also this test comes at a time when plutonium production for miniaturized warheads is meeting the operational requirements, with the commissioning of the fourth production reactor at Khushab," he said.

Despite being described as a conventional and non-conventional weapon, analysts like Tufail are unconvinced Ra'ad can effectively be employed by Pakistan in the conventional role.

"Platforms like the Ra'ad have limited use as conventional weapons launching platforms, because a payload of 450-kilograms [at best] can do little harm unless launched in a shower of a few score, something that would be outrageously costly," he said.

"Glide bombs are an economical choice for stand-off delivery of conventional weapons," he added.

Indeed, Pakistan does seem to have made further steps in this regard and showcased the latest of its glide bombs, the Global Industrial Defence Solutions' 'Takbir', at December's IDEAS2014 defense exhibition.

The Ra'ad has been tested on the Mirage III strike aircraft, but it is unknown if it has been integrated onto Pakistan's F-16s.

Tufail said it is more likely the JF-17 will be the next delivery platform.

<http://www.defensenews.com/story/defense/air-space/strike/2015/02/03/pakistan-cruise-missile-test-raad-india-agni/22814323/>

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Business Standard – New Delhi, India

Pak to Continue Developing Close Range Nuclear Weapon: Pentagon

Press Trust of India (PTI)

February 4, 2015

Washington -- The US has anticipated that Pakistan will continue developing cruise missiles and close-range "battlefield" nuclear weapons to augment its existing ballistic missiles, a top US intelligence official has said.

"Pakistan continues to take steps to improve security of its nuclear arsenal. We anticipate that Pakistan will continue development of new delivery systems, including cruise missiles and close-range 'battlefield' nuclear weapons to augment its existing ballistic missiles," Lt Gen Vincent R Stewart, Director of Defense Intelligence Agency told members of the House Armed Services Committee during a hearing on global threat assessment.

Testifying before the House Armed Services Committee, Stewart said Pakistan's Army and paramilitary forces remain deployed in the Federally Administered Tribal Areas (FATA) and Khyber Pakhtunkhwa Province.

Issue No.1151, 06 February 2015

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Army ground operations in North Waziristan Agency (NWA) have cleared anti-state militants from most population centers. "We expect the military will continue targeting remaining militant strongholds in 2015," he said.

The December 2014 Tehrik-e Taliban Pakistan (TTP) attack against the Army-run school in Peshawar that killed more than 140 people, mostly children, has emboldened military efforts against anti-state militants, including intensified airstrikes against TTP leadership and fighters, he said.

The government and military are also working together to implement a national action plan against terrorism, which includes the establishment of military courts, he added.

"Despite ongoing military operations, Pakistan will continue to face internal security threats from militant, sectarian, and separatist groups. Additionally, Pakistan remains concerned about ISIL outreach and propaganda in South Asia," the intelligence official said.

On Afghanistan, Stewart said the still-developing Afghan National Security Forces (ANSF) remain stalemated with the Taliban-led insurgency. In 2015. "We expect the ANSF to maintain stability and security in Kabul and key urban areas while retaining freedom of movement on major highways. However, the Taliban, al- Qa'ida, and their extremist allies will likely seek to exploit the reduced Coalition presence by pressuring ANSF units in rural areas, conducting high profile attacks in major population centers, and expanding their safe havens," he said.

http://www.business-standard.com/article/pti-stories/pak-to-continue-developing-close-range-nuclear-weapon-pentagon-115020400067_1.html

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The National Interest – Washington, D.C.

OPINION/Feature

The 5 Most Dangerous Nuclear Threats No One Is Talking About

The U.S. is often more concerned about hypothetical nuclear threats than the ones lurking all around us. Here are five to keep your eye on...

By Zachary Keck

February 1, 2015

Since the atomic bombings of Hiroshima and Nagasaki, nuclear weapons have occupied a hallowed place in U.S. national security. Indeed, during the dawn of the nuclear era, a whole new academic discipline—strategic studies—sprung up to provide the intellectual foundations for policy makers grappling with these earth-shattering issues. Moreover, while easy (convenient?) to forget today, nuclear weapons were central to America's strategy for defending Europe from the numerically superior Soviet military.

During the Cold War, much of the debate centered on the U.S.-Soviet nuclear balance. And for good reason; this was both the most likely and most dangerous flashpoint. Since the collapse of the Soviet Union, nuclear weapons have continued to be a major preoccupation of American statesmen. However, instead of being concerned by existing nuclear arsenal, the U.S. foreign-policy establishment has been most consumed by the nuclear weapons "rogue" states and terrorist groups don't have. Meanwhile, outside of government, the strategic-studies community has been replaced by the arms-control crowd, who pours most of its energies into trying to abolish nuclear weapons instead of trying to minimize the danger of them.

None of these pursuits are unworthy in and of themselves. Nonetheless, they've created a vacuum whereby few are talking about (much less solving) the nuclear dangers that actually confront the world today. Unfortunately, these haven't gone away. With the hope of sparking these necessary conversations, here are the five most dangerous nuclear threats no one is talking about:

Asian MIRVs



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As I discussed last month, the most dangerous nuclear threat the world currently faces is the prospect of China and India acquiring multiple independently targetable reentry vehicles (MIRVs). MIRVs allow ballistic missiles to carry up to ten nuclear warheads each one of which can be aimed at a different target.

As we witnessed during the Cold War, the introduction of MIRVed missiles greatly destabilizes nuclear balances, by making nuclear arsenals more susceptible to being destroyed by an enemy first strike. Compensating for this greater danger requires states to build more nuclear weapons and disperse them to more and more places. This will be especially true for India and China, which have maintained extremely small nuclear arsenals relative to the U.S. and Russia.

Thus, the most immediate impact of China and India acquiring MIRVs will be that they will have to greatly expand the size of their nuclear arsenal. The impact will not be limited to them, however. For one thing, a rapidly expanding Indian nuclear arsenal will leave Pakistan—which is already terrified that its arsenal could be destroyed in a first strike—vulnerable. It is likely to respond by expanding its arsenal as much and as quickly as possible, and ultimately by acquiring its own MIRVed missiles (perhaps with the help of China).

Similarly, Russia has increasingly relied on its massive nuclear arsenal to “offset” its diminishing conventional military power. As China’s military modernization continues, Moscow will become even more reliant on its nuclear weapons to deter the Chinese. Thus, it is absolutely crucial that Russia maintain a large advantage over China in the nuclear realm. A rapidly expanding Chinese nuclear arsenal would greatly jeopardize that. One day we might look back and assess that China’s MIRVed missiles killed U.S.-Russia arms control.

Pakistan Tactical Nukes

Contrary to popular belief, Pakistan did acquire nuclear weapons to counter India’s arsenal, but rather to “offset” India’s conventional superiority.

Indeed, the decision to pursue nuclear weapons was made at a January 1972 meeting in Multan in south Punjab, Pakistan. The prior month, Pakistan’s military had been badly humiliated in its war with India, which resulted in East Pakistan becoming the independent state of Bangladesh. This halved Pakistan and, as a result, widened the gap with India in terms of population (from 5:1 in India’s favor to 10:1 in India’s favor) and economic potential. It also shattered the prevailing belief in Pakistan at the time that its military was qualitatively superior to the Indian armed forces, and confirmed (in the minds of many Pakistanis at least) that Delhi was bent on dismantling Pakistan.

As a result, it is not altogether surprising that Pakistan is seeking tactical nuclear weapons to use on the battlefield against India, especially in light of Delhi’s “Cold Start” doctrine. After all, NATO deployed tactical nuclear weapons because it sought to use nuclear weapons to offset the Soviet Union’s conventional superiority.

However, tactical nuclear weapons should be concerning to all, especially when fielded by a country like Pakistan. For one thing, fielding tactical nuclear weapons underscores Pakistan’s willingness to use atomic weapons even to counter non-nuclear threats. Moreover, in order to be effective, Pakistan’s tactical nuclear weapons would have to be kept in a more ready state in order to be usable on short notice. Furthermore, once deployed on the frontlines, the battlefield commanders would likely be granted the authority to use them, raising the danger of a rogue general sparking a nuclear armageddon. Finally, tactical nuclear weapons, especially when deployed, would be more susceptible to theft by any one of the countless terrorist groups that call Pakistan their home.

Usable Nukes

An insane amount of analysis has gone into parsing out how precision-guided munitions and their support systems—achieving much greater accuracy—have impacted conventional warfare. An equally insane amount of apathy has been shown towards how the revolution in accuracy affects nuclear weapons.

Nevertheless, the growing accuracy of modern missiles has the potential to greatly undermine strategic stability. Indeed, Keir Lieber and Daryl Press—who are easily doing some of the best work on existing nuclear weapons—even argue that the revolution in accuracy spells the end of mutual assured destruction (MAD).

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MAD, and the related tradition of non-use of nuclear weapons, was underpinned by a couple of important assumptions. First, that states had secure second-strike capabilities that made it impossible for states to destroy an adversary's nuclear arsenal with a surprise attack. Second, that the destructive power of thermonuclear weapons—and the indiscriminate nature of this destruction—made them abhorrent to use. Related to both of these was the notion that no state could win a thermonuclear conflict between two nuclear powers.

As Lieber and Press have brilliantly documented, the revolution in accuracy threatens to undermine many of these assumptions. To begin with, the incredible accuracy of modern missile systems makes a successful first strike far more plausible. This is especially true against states not named Russia and the United States who have relatively small nuclear arsenals (at least for now).

However, after modeling a prospective first strike against Russia's strategic forces, Lieber and Press concluded that the U.S. could execute a successful first strike with a high degree of probability against even Moscow's massive nuclear arsenal. In fact, they claimed that U.S. policy makers had actually constructed America's strategic forces with the goal of strategic primacy (defined as "the ability to use nuclear weapons to destroy the strategic forces of any other country") in mind. Furthermore, they later concluded that this effort extended beyond nuclear weapons. As they explained in 2013, "the effort to neutralize adversary strategic forces—that is, achieve strategic primacy—spans nearly every realm of warfare: for example, ballistic missile defense, anti-submarine warfare, intelligence surveillance-and-reconnaissance systems, offensive cyber warfare, conventional precision strike, and long-range precision strike, in addition to nuclear strike capabilities."

Besides jeopardizing MAD, the growing accuracy of modern missiles also potentially undermines the foundation of the tradition of non-use of nuclear weapons. This tradition was built in no small part on the notion that nuclear weapons were morally abhorrent because their massive destructive power and the corresponding radiological fallout would wipe out populations indiscriminately. However, accuracy is the most important determinate of a nuclear weapon's lethality ($\text{Yield of warhead}^{2/3} / \text{CEP}^2$). As one scholar explains: "Making a weapon twice as accurate has the same effect on lethality as making the warhead eight times as powerful. Phrased another way, making the missile twice as precise would only require one-eighth the explosive power to maintain the same lethality." Furthermore, radiological fallout operates according to Newton's inverse square law.

All of this is to say that with highly accurate missiles, nuclear weapons become a viable weapon of war. As Lieber and Press put it, "the revolution in accuracy permits planners to target an enemy's hardened nuclear sites using low-yield weapons, set to detonate as airbursts, thereby vastly reducing fallout and collateral damage." Indeed, using a Pentagon computer model, experts estimated that a U.S. counterforce strike against China's ICBM silos using high-yield weapons detonated at ground blast would still kill anywhere between 3-4 million people. Using low-yield weapons and airbursts, this figure drops to as little as 700 fatalities!

China's Military Modernization

China's military modernization is hardly a hypothetical nuclear threat. At the very least, as noted above, it will force Russia to become increasingly reliant on its nuclear weapons. This is likely to be true of India as well. Moreover, as Bridge Colby masterfully outlined in the latest issue of *The National Interest*, the U.S. may find in the not-so-distant future that it, too, must once again turn to nuclear weapons to deter a conventionally superior foe in a distant theater.

Still the greater nuclear threat posed by China's military modernization is hypothetical, albeit all too real. Specifically, as its conventional superiority grows, and its interests expand, China's military modernization will serve as a powerful motivator for its neighbors to build their own nuclear forces.

Indeed, the need to deter overwhelming conventional military threats has been the driving force behind many states' decision to go nuclear. For example, France made the decision to build nukes only days after NATO decided to rearm Western Germany. Given that its Arab enemies were much larger and more populated than Israel, and bent on the latter's destruction, David Ben-Gurion deemed nuclear weapons essential early on in the Jewish state's existence. As noted above, this logic was compelling for Pakistani leaders as well.

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It's hardly unthinkable, then, that countries like Japan, Vietnam, Taiwan and even South Korea will feel the need to acquire nuclear weapons to offset China's conventional superiority, as well as the territorial disputes it maintains with most of them. Furthermore, South Korea, Taiwan and especially Japan have advanced nuclear programs that would make it relatively easy and cheap for them to build the bomb.

Global Zero

While nuclear weapons appear to have a very bright future, particularly in Asia, the nuclear-disarmament crowd will undoubtedly work tirelessly to prevent them. Indeed, in the decade plus since 9/11, the Global Zero cause has greatly expanded its ranks and won over key political leaders like President Obama.

Unfortunately, their cause, however noble, is dangerous. Thanks to their ability to deter great-power conflict, the only thing worse than nuclear weapons is a world without them. Consider that, a conservative estimate of World War II fatalities is 60 million people, or roughly 3 percent of the global population at the time. A non-nuclear world war today could therefore be expected to kill AT LEAST 210 million people (precision-guided munitions and greater urbanization would likely make a non-nuclear war today much more lethal than WWII, although advances in medicine would partially offset this).

This in itself would be a tragedy unprecedented in human history. The greater danger, however, is that such a conflict wouldn't remain conventional very long. Along with making great-power conflict far more likely, global nuclear disarmament offers no conceivable mechanism to ensure that such a war would remain non-nuclear. In fact, common sense would suggest that immediately following the outbreak of hostilities—if not in the run-up to the war itself—every previous nuclear power would make a rapid dash to reconstruct their nuclear forces in the shortest amount of time.

The result would not merely be a return to the nuclear world we currently inhabit. Rather, some countries would reconstruct their nuclear weapons more quickly than others, and no power could be sure of the progress their rivals had made. The “winners” in this nuclear arms race would then have every incentive to immediately use their new nuclear capabilities against their adversaries in an effort to quickly end the conflict, eliminate others' nuclear weapons—making capabilities, or merely out of fear that others will launch a debilitating strike on their small and vulnerable nuclear arsenal. There would be no mutually assured destruction in such an environment; a “use-it-or-lose-it” mentality would prevail.

Zachary Keck is the managing editor of The National Interest. He was previously managing editor of The Diplomat.

<http://nationalinterest.org/feature/the-5-most-dangerous-nuclear-threats-no-one-talking-about-12160>

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Hindustan Times – New Delhi, India

OPINION/Analysis

Agni V Gives Muscle to our Nuclear Deterrence

By Reshmi Kazi

February 05, 2015

The successful testing of the indigenously developed intercontinental ballistic missile (ICBM), Agni V, on January 31, increases the technological sophistication of India's nuclear deterrence. Believed to be a “game-changer” the missile enables India to envelope China's major cities and constitutes an ideal riposte to its strategic missile forces. Developed by the DRDO, the advanced missile boasts high-accuracy Ring Laser Gyro based Inertial Navigation System (RINS) and advanced Micro Navigation System (MINS), which ensures higher reliability and enhanced mobility.

The 2015 launch demonstrated the technological sophistication of the three-stage solid propellant by testing the maiden canisterised version from a road-mobile launcher. The test successfully validated the increased flexibility of

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launching the missile from land or rail any place in India. The ability of transporting concealed ballistic missiles provides advantage of decoy.

Agni V can be mounted on launcher trucks and moved stealthily in combat zones. Being concealed in truck-borne canisters it is difficult to detect these long-range missiles when they are mobile. Though reconnaissance satellites can reveal the existence of these missiles in a combat zone, their camouflage element prevents the detection of the exact trucks carrying canisters of ICBMs. This enhances the element of ambiguity and deters the adversary from launching any first-strike on India's nuclear forces, thereby making it more survivable.

India's nuclear doctrine is premised upon the principle of 'no first use' (NFU) that professes India will not be the first to use nuclear weapons. However, this implies that India must have an assured second-strike capability to inflict retaliation against any adversary's first strike. The NFU strategic posture demands that India possess a nuclear arsenal that is not only capable of absorbing a first strike but after having done so retains sufficient forces to neutralise its offender. This requires a high degree of survivability of India's nuclear armed forces.

In an age in which global politics is deeply influenced by nuclear weapons, technology is believed to be a panacea for national defence, capable of providing comparative advantage in safeguarding our national security. Agni V amply demonstrates the technological sophistication of India's nuclear arsenal that considerably bolsters India's nuclear deterrence and preparedness.

Reshmi Kazi is associate fellow, Institute for Defence Studies & Analyses, New Delhi

<http://www.hindustantimes.com/analysis/agni-v-gives-muscle-to-our-nuclear-deterrence/article1-1314071.aspx>

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OPINION/Analysis

North Korea's Nuclear Weapons: The Great Miniaturization Debate

By Jeffrey Lewis

05 February 2015

On December 20, 2014, the South Korean Ministry of National Defense (MND) released a white paper that contained a surprising statement about North Korea's nuclear program.[1] "North Korea seems to have made significant progress in miniaturizing its nuclear weapons."

The MND Minister had made a similar statement in October, but for some reason, this time his statement sparked a flurry of stories in South Korean press, such as the *Chosun Ilbo* and *JoongAng Ilbo*, as well as in US publications like the *Wall Street Journal* and the *New York Times*.

This chatter forced the South Korean government to clarify the statement. "Seoul and Washington have reached consensus that the North already reached a significant level of technology to miniaturize nuclear weapons through three nuclear tests," an MND official told the *Chosun Ilbo*. "But there is no intelligence report that the North has already succeeded in miniaturizing nuclear weapons."

Well that clears it up.

This is now the third time something like this has happened in the past few years—a statement that North Korea has developed a nuclear weapon small enough to arm a ballistic missile of one sort or another, followed by oddly parsed statements suggesting that maybe they haven't.

In Spring 2013, for example, a US Defense Intelligence Agency (DIA) threat assessment was mistakenly marked unclassified stating that North Korea might be able to arm ballistic missiles with nuclear weapons, prompting the Department of Defense and Director of National Intelligence to release clarifications of their own. And, in October of that year, the Commander of US Forces Korea stated his personal opinion that North Korea probably could do so, prompting a statement by the ROK Minister of National Defense.



At some level, this debate strikes me as a bit bizarre. The North Koreans have conducted three nuclear weapons tests since 2006, including one they openly declared to have been of a “miniaturized” device; they have also created a Strategic Rocket Force and published a picture of a map showing their nuclear targeting plan against the United States. I realize that North Korean propaganda is often balderdash, but the idea that North Korea might be developing nuclear-armed ballistic missiles isn’t really in the same category as claims that Kim Jong Un doesn’t poop.

Whether North Korea can arm a ballistic missile with a nuclear warhead, particularly a ballistic missile that can reach the United States, depends on the answer to three questions:

1. Can North Korea make a nuclear weapon small enough?
2. Can North Korea’s compact nuclear weapon survive the shock, vibration and temperature change associated with ballistic missile flight?
3. Can North Korea construct a “reentry vehicle” that can survive the extreme heat of reentry, a problem that gets worse with range?

I think the answer to each of these questions is, “yeah, probably.” While I understand the caution in crediting the North Koreans for capabilities that are only under development, there is ample open source information to support such a judgment. Reasonable people may still disagree, but no one should be surprised by the prospect of nuclear-armed North Korean missiles.

Can North Korea Make a Nuclear Weapon Small Enough?

The simplest question is whether North Korea can build a nuclear weapon small enough—both in terms of mass and compactness—to fit atop a ballistic missile. The United States intelligence community has a term of art—simple fission device—to describe first generation nuclear weapons, like the aptly named “Fat Man,” that are much too large to place on a ballistic missile.

As a general technical matter, however, the US intelligence community has always stated that a country could skip right toward building much smaller devices on the order of 1,000 kg—although such weapons would be unreliable without nuclear testing. This device would look something like the US Mark 7, which weighed about 750 kg. Some of my colleagues have pointed out that North Korea could probably do much better, trying out something like the Mark 12 which weighed on 450 kg. (See chart.)

Select Early US Nuclear Warhead Designs for Comparison				
	Mass (kg)	Diameter (cm)	Yield (kt)	Deployed
Mark III (“Fat Man”)	4,700	150	20	1945, 1947-1950
Mark 5	1400	110	120	1952-1963
Mark 7	800	80	70	1952-1967
Mark 12	500	60	20	1954-1962

Source: Chuck Hansen, *Swords of Armageddon*, electronic edition.

Not surprisingly, as early as 1999, DIA was arguing that North Korea might try to build a 650-750 kg device, even if others in the US intelligence community were skeptical. DIA just assumed that North Korea would go straight to a Mark 7-like design.

There is plenty of reason to think that North Korea tried to do precisely that. During the 2000s, there were many reports of North Korean conducting extensive testing of high explosives. A nuclear weapon is mostly a conventional explosive. Making the bomb more compact largely involves design innovations that require fewer



explosives to achieve a given level of compression (such as levitated pits and better electronics). One explanation for all the testing of conventional explosives is that North Korea was trying to develop a device small enough to be delivered by missile. In 2005, a North Korean defector stated that North Korea had done precisely that, build a 1,000 kilogram device that was—just as the US intelligence community would have predicted—not reliable. (The defector also said the next device would be smaller.)

When North Korea’s first test in 2006 produced a very disappointing yield, many of us took the small yield to be confirmation of this general hypothesis—North Korea had tried to skip directly to a compact device and it did not work. At one point, a reporter told me this was also the working hypothesis within the US intelligence community. Since then, North Korea has conducted two more nuclear tests that produced far higher yields—a few kilotons in 2009, followed by several kilotons in 2013. Following that test, the North Koreans announced they had “miniaturized” their nuclear devices.

It seems very plausible to me that, after three tests, the North Koreans have a nuclear weapons design somewhere in the Mark 12 to March 7 range—450-750 kg in mass with a diameter between 60-90 cm. Lots of states have moved quickly to develop relatively smaller devices. (See chart.) The Chinese provided a uranium-based design to Pakistan that was 500 kg and 90 cm in diameter, which the Pakistanis miniaturized and passed on to Libya and lord knows who else.

Other Early Generation Compact Nuclear Devices				
	Mass (kg)	Diameter (cm)	Yield (kt)	Vintage
CHIC-4 (China/Pakistan/Libya)	500-1200	90	10	1960s, 1980s
Iraq (Al Qa’qaa molds)	900	80	20	1980s
Pakistan Miniaturized	200	60	10	1980s
R265/R288		58		
Sweden*	400-500	35	20	1950s
*The Swedish design made use of oblate high explosives configuration. Source: Author estimates.				

Such a warhead is certainly small enough to arm a Nodong and might just fit on a notional DPRK inter-continental ballistic missile (ICBM). The problem here is how to estimate the capabilities of a DPRK ICBM that does not exist—based on Unha technology or the KN-08 mockups? If North Korea can’t make a warhead compact enough for its ICBMs, it is more likely to be because the ICBM doesn’t have enough payload space.

Can North Korea’s Compact Nuclear Weapon Survive the Shock, Vibration and Temperature Change Associated with Ballistic Missile Flight?

This is a more interesting problem. It’s all well and good to design a much smaller nuclear weapon using fancy electronics and so on, but the design must be rugged enough to survive the shock, vibration and temperature extremes of taking a ride on a ballistic missile. “The difference has to do with the confidence level in the actual ability of the North Koreans to make a weapon that will work in a missile,” James Clapper, Director of National Intelligence, explained in 2013, “And neither we nor the North Koreans know whether that’ll actually—whether they have that—such capability, if they have it, will actually work.”



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This was a real problem for the Chinese in the 1960s, too. The Chinese developed a missile-delivered warhead for their DF-2 ballistic missile—the same design that China provided to Pakistan—and originally planned to simulate the abuse suffered during a real launch, followed by an underground test of the roughed-up bomb.

The Chinese, however, decided that it was too hard to simulate the extreme conditions of flight. After a fair amount of back-and-forth between the weaponeers and the central leadership, Zhou Enlai authorized a very unusual live test of a real nuclear weapon on a real ballistic missile. China fired a nuclear-armed DF-2 in October 1966. It worked. The Chinese weren't alone. We had the same debate in the United States a few years before. Like China, we also settled for a one-off demonstration called Operation Frigate Bird, in which a US submarine fired a nuclear-armed Polaris missile at a nuclear test site in the South Pacific. It worked too, although it later turned out that the warhead in question was judged unreliable.

We might lack confidence in North Korea's ability to manufacture a reliable miniaturized nuclear weapon. I wonder, though, how much that matters. Do the North Koreans lack confidence in their warheads? What if we underestimate them? What if they are drunk off *Juche*? What if, like Operation Frigate Bird, the unreliable weapon just happens to work when it's fired? There is an interesting discussion to be had about reliability, confidence and deterrence, but I wonder whether it adds much to our assessment of North Korea.

Can North Korea Construct a “Reentry Vehicle” that Can Survive the Extreme Heat of Reentry?

Finally, no matter how rugged one makes a nuclear warhead, it has to be packaged in a reentry vehicle that can survive the heat created as it reenters the earth's atmosphere. The North Koreans could certainly package a warhead in a blunt reentry body that would be inaccurate, very heavy and potentially vulnerable to theater missile defense systems—but it would still survive reentry.

The North Koreans, however, have paraded missiles with so-called “triconic” reentry vehicles that are sort of a compromise between blunt reentry bodies and the slender cones that arm missiles in the US and other advanced nuclear powers. A triconic reentry body must deal with heat through ablation—in other words, the reentry body must be made of material that burns off, taking the heat with it.

This can be a significant challenge for an ICBM, where reentry speeds can reach 7 km/s. China, for example, struggled in the 1970s with developing a reentry vehicle for the DF-5 ICBM that could handle such temperatures. *China Today*, a series of publications on the technical history of China's defense industries, describes the problem as “a technical difficulty” which is about as colorful as *China Today* gets. Ultimately, though, the Chinese solved that problem. In fact, I can't think of a single state that has been able to build an ICBM, but not able to put a passable reentry vehicle on top of it.

It is common to say North Korea would require a program of testing to overcome these problems. That's understandable. In the 1960s, reentry vehicle designers probably struggled to model reentry environments and had a limited choice in materials. But today? After more than fifty years of space flight? With a large body of open source information, better computer simulation capabilities and fancy new materials? Maybe a little help from their friends? And maybe a little overconfidence?

And, let's be clear about the problem here. The warhead probably won't burn up. Even the North Koreans don't suck that badly. When designers talk about how hard it is to design an ablative reentry vehicle, what they really mean is designing one where the ablation occurs evenly around a spinning reentry vehicle. The Chinese were as worried about “the stability of the warhead in flight” as they were about protecting the bomb package inside. An unstable reentry body might fail completely, but it is more likely to just wildly miss the intended target—say landing in San Jose when it was aimed at San Francisco. That's a problem, of course, but Kim Jong Un might be content with such an outcome.

Conclusion

It is not surprising that some people in the US or ROK government think that, yes, North Korea might be able to do these things. Nor is it surprising that others would counsel caution, suggesting that North Korea hasn't put all together in a single test. North Korea's missile and nuclear “developments have been accompanied with extremely

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belligerent, aggressive public rhetoric toward the United States and South Korea,” Clapper testified in 2013. “North Korea has not, however, fully developed, tested or demonstrated the full range of capabilities necessary for a nuclear- armed missile.” In other words, *prove it*.

But is that really what we want? Looking at the Chinese example, do we really want to insist that North Korea arm a missile with a live warhead and conduct a demonstration? A much better solution is trying to negotiate limits on North Korea’s nuclear and missile programs. Such limits would not eliminate the threat these programs pose, but they might keep them unreliable. That would be an achievement.

I’ll be the first person to say that we should not exaggerate the capabilities of North Korea’s nuclear forces, but underestimating them is every bit as bad. The North Koreans are developing military capabilities that we will, sooner or later, have to deal with. I just happen to think that negotiations, as frustrating as they may be, are the best of a series of unappealing options.

Moreover, underestimating the North Koreans often means that, when they surprise us, our political system over-compensates, passing from denial straight into panic. Consider the case of the August 1998 Taepodong launch. The US intelligence community had assessed, in 1995, that “No country, other than the major declared nuclear powers, will develop or otherwise acquire a ballistic missile in the next 15 years that could threaten the contiguous 48 states and Canada.” As it turns out, more than fifteen years later, they were right. (And the fine print on North Korea and the Taepodong program was pretty decent, as well.) So, when North Korea launched a Taepodong in 1998 with an unexpected third stage that failed, the intelligence community got a great big “congratulations” for a job well done. *Oh, wait, no it didn’t*. The intel was right, but that didn’t matter in part because the technical assessment didn’t convey North Korea’s ambitions to develop a capability that outstripped its abilities.

Just imagine if North Korea were to conduct a live demonstration of a nuclear weapon on a Nodong out to sea. Even if it didn’t work, Washington, Seoul and Tokyo would go bonkers. That’s worth keeping in mind. Yes, the North Koreans probably stink at making compact warheads and accurate reentry vehicles. But that’s not quite the same thing as saying they aren’t trying, that they don’t have some confidence in these capabilities or that we shouldn’t keep trying to find ways to discourage them from testing these systems.

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[1]The statement, in Korean, is “북한의 핵무기 소형화 능력도 상당한 수준에 이른 것으로 보인다.”

<http://38north.org/2015/02/jlewis020515/>

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ABOUT THE USAF CUWS

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

The Secretary of Defense's Task Force on Nuclear Weapons Management released a report in 2008 that recommended "Air Force personnel connected to the nuclear mission be required to take a professional military education (PME) course on national, defense, and Air Force concepts for deterrence and defense." As a result, the Air Force Nuclear Weapons Center, in coordination with the AF/A10 and Air Force Global Strike Command, established a series of courses at Kirtland AFB to provide continuing education through the careers of those Air Force personnel working in or supporting the nuclear enterprise. This mission was transferred to the

Issue No.1151, 06 February 2015

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CUWS Outreach Journal

Maxwell AFB, Alabama

Counterproliferation Center in 2012, broadening its mandate to providing education and research to not just countering WMD but also nuclear deterrence.

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

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

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