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:** “Russian Nuclear Forces, 2015”. Authored by Hans M. Kristensen and Robert S. Norris; published by the Bulletin of the Atomic Scientists; 14 April 2015; 14 pages.

http://bos.sagepub.com/content/early/2015/04/13/0096340215581363.full.pdf+html

Russia is modernizing its strategic and nonstrategic nuclear warheads. It currently has 4,500 nuclear warheads, of which roughly 1,780 strategic warheads are deployed on missiles and at bomber bases. Another 700 strategic warheads are in storage along with roughly 2,000 nonstrategic warheads. Russia deploys an estimated 311 ICBMs that can carry approximately 1,050 warheads. It is in the process of retiring all Soviet-era ICBMs and replacing them with new systems, a project that according to Moscow is about halfway complete. The outgoing ICBMs will be replaced by the SS-27 Mod. 1 (Topol-M), the SS-27 Mod. 2, two follow-on versions of the SS-27 which are still in development, and a new liquid-fuel “heavy” ICBM. Following technical problems, the Russian Navy is also rolling out its new Borey-class nuclear-powered ballistic missile submarine. Russia’s upgrades to its nuclear arsenal help justify modernization programs in other nuclear weapon states, and raise questions about Russia’s commitment to its obligations under the nuclear Non-Proliferation Treaty to reduce and eliminate nuclear weapons.

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Return to Top

**U.S. NUCLEAR WEAPONS**
1. AF Realigns B-1, LRS-B under Air Force Global Strike Command

**U.S. COUNTER-WMD**
1. Rail Gun Tipped to Alter Nation’s Defense Abilities
2. Russia Not Threatened by China, US Missile System Is Sole Threat – Lavrov

**U.S. ARMS CONTROL**
1. Prototype of New RS-26 ICBM to Be Shown to US Side by Year End
2. Congress Adds Cash to Special Account to Build New Nuclear Submarines

**HOMELAND SECURITY/ THE AMERICAS**
1. US Will Not Survive a Nuclear War against Russia - Jean-Paul Baquiast

**ASIA/PACIFIC**
1. S. Korea to Raise Defense Spending by 2020
2. NK's ICBM Capability Unreliable: CRS Report
3. China Scholar Warns of More Nuclear Warheads if THAAD Deployed in S. Korea
4. China Suspects North Korea Has 20 Nuclear Warheads that Could Double by Next Year
5. Chinese Supercomputer 'Too Slow' to Compete in Race for Hypersonic Weapons, Scientist Warns

EUROPE/RUSSIA
1. S-400 Missile Defense Strength Doubled in Russia's Far East
2. Russia Will Not Deploy Nuclear Forces Outside its Territory — Lavrov
3. Russia Conducts Simulated Launches of Iskander-M Missiles
4. Russian Military General Says US, West Wage First Phase of Hybrid War on Russia

MIDDLE EAST
1. Khamenei: Iran Nuke Weapons are American ‘Myth’
2. Iran: IAEA Convinced about Neutron Transport Issue
3. Inspectors Need Full Access in Iran Nuclear Deal, Moniz Says
4. Syria’s Assad Denies Use of Chlorine Gas in Idlib
5. Iran Rejects US Call for ‘Anywhere, Anytime Access’ to Military Sites
6. Russia Not to Deliver S-300 to Iran in Near Future: Official
7. Drafting of Final Nuclear Deal Begins in Vienna
8. Withdrawal of Iran's Nuclear Materials to Russia Possible — Diplomat
9. Iran’s New Satellite Ready for Launch
10. Araqchi Says Useful Discussions Held with US, EU on Sanctions

COMMENTARY
1. Why the BrahMos Armed Sukhoi is Bad News for India’s Enemies
2. Russia’s Military Lacks Direction
3. U.S. and Russian Generals Call for Reducing the Risk of Inadvertent Nuclear War
4. Pakistan’s Nuclear Weapons Program: 5 Things You Need to Know
5. India’s Nuclear-Weapons Program: 5 Things You Need to Know
6. Is China Planning To Build More Missile Submarines?


AF Realigns B-1, LRS-B under Air Force Global Strike Command
By Secretary of the Air Force Public Affairs
April 20, 2015

WASHINGTON (AFNS) -- The Secretary and Chief of Staff of the Air Force have directed the realignment of the Air Force’s B-1 bomber fleets and Long Range Strike-Bomber program from Air Combat Command to Air Force Global Strike Command, effective Oct. 1.

The move will realign the Air Force’s core mission of global strike and all of the service’s bombers under a unified command responsible for organizing, training and equipping Airmen to perform this mission.

“This realignment places all three Air Forces bombers under one command and brings the LRS-B program with it,” said Secretary of the Air Force Deborah Lee James. “Consolidating all of our Air Force assets in this critical mission area under a single command will help provide a unified voice to maintain the high standards necessary in stewardship of our nation’s bomber forces.”

Sixty-three aircraft and approximately 7,000 people will transfer from ACC to AFGSC under the realignment. Since moving from Strategic Air Command in 1992, the B-1 has played an essential role in combating the nation’s enemies, either projecting combat power from bases in the United States or from forward operating locations around the globe.
Airmen who drive B-1 operations have demonstrated the platform’s long range strike capability, delivering its conventional weapons on target from home station, making it a perfect fit for joining the B-2 and B-52 under AFGSC, James said.

"With a single command responsible for the Air Force’s entire long range strike fleet, the Airmen in AFGSC will benefit from better coordination and increased sharing of expertise across the five bomber wings,” said Air Force Chief of Staff Gen. Mark A. Welsh III. “Consolidating all conventional and nuclear capable bombers within the same command allows the Air Force to streamline the global strike and strategic deterrence missions, and create a lasting positive impact for the Air Force’s global strike capabilities.”

Both the 7th Bomb Wing at Dyess Air Force Base, Texas, and the 28th BW at Ellsworth Air Force Base, South Dakota will continue to serve as the host wings and provide installation support and services to other units on the bases.

"We expect the transfer to be imperceptible to the majority of Airmen at Dyess and Ellsworth as they will continue to work for the same supervisors and units,” said Lt. Gen. Stephen Wilson, Commander, Air Force Global Strike Command who was recently nominated to serve as the vice commander of U.S. Strategic Command at Offutt AFB, Neb.

“The impacts of the realignment will become noticeable over time as crosstalk among maintainers and aviators increases across all three platforms, creating opportunities in training, tactics development, doctrine development, aircraft modernization and acquisition,” Wilson said.

The consolidation of the global strike mission under AFGSC follows the Air Force’s plan to elevate the commander of AFGSC from a three-star to a four-star general officer position, which Gen. Robin Rand, currently the commander Air Education and Training Command, will assume.


Taipei Times – Taipei, Taiwan
Sunday, April 19, 2015

Rail Gun Tipped to Alter Nation’s Defense Abilities

SPEDY PAYLOAD: US military analyst Rick Fisher said that China would have to think ‘more than twice’ if its leaders were aware of the weapon’s capabilities
By William Lowther, Staff reporter in WASHINGTON

New advances in the development of electromagnetic rail guns (ERG) could have a major impact on the defense of Taiwan, an expert in Asian military affairs said.

“[ERGs] could be ready by the early 2020s,” International Assessment and Strategy Center senior fellow Rick Fisher said.

US Navy officials revealed this week that they plan to test-fire a rail gun at sea for the first time in the summer of next year.

The gun is to fire a series of hypervelocity projectiles fitted with GPS electronics at a barge floating in the ocean about 80km from Eglin Air Force Base in Florida.

Directed Energy and Electric Weapon Systems program manager US Navy Captain Mike Ziv told a US Navy League symposium that the first firing was a “significant event” and a “key learning point.”

The symposium was told that rail guns could fire guided, high-speed projectiles more than 160km and could be a formidable defense against cruise and ballistic missiles.
“This one technology has the potential to reverse the ‘cost-benefit ratio’ on the Taiwan Strait and to extend real deterrence potential for another decade, while allowing Taipei to sustain a largely defensive military strategy,” Fisher told the Taipei Times.

He said that Taiwan was buying US$3 million missile interceptors to shoot down US$1 million Chinese short-range ballistic missiles.

Rail guns could be able to shoot down Chinese missiles and attack aircraft with projectiles at much less cost.

“It can perform missile defense, air defense and anti-invasion missions, and also attack most of the new long-range anti-aircraft missile systems China is basing near the Taiwan Strait to threaten Taiwan’s air force,” Fisher said.

He said: “If China’s leaders see they cannot overwhelm Taiwan with missile strikes, achieve air superiority and thus assure the security of its invasion fleet, they will probably think more than twice about attacking Taiwan.”

“These are the potential benefits for Taiwan of the rail gun,” he said.

Fisher added: “It is a strategic and moral necessity for Washington to be working with Taipei to enable the early transfer of rail gun technology.”

According to the Defense Tech Web site, the rail gun being developed by the US Navy uses electricity to create a magnetic field to propel a kinetic energy projectile at about 5,600 miles per hour (9,000kph).

It can accelerate a 45-pound (20kg) projectile from zero to 5,000 miles per hour (8,046kph) in less than a second, the Web site said.

The projectiles, able to travel at 2,000 meters per second, would cost less than US$100,000 each, while the gun would be able to fire them at a rate of about one every six seconds.

http://www.taipeitimes.com/News/front/archives/2015/04/19/2003616267

Sputnik International – Russian Information Agency

Russia Not Threatened by China, US Missile System Is Sole Threat – Lavrov

US global defense missile system is the only threat to our country, Russian Foreign Minister Sergei Lavrov said Wednesday.

22 April 2015

MOSCOW (Sputnik) – Russia feels unthreatened by China, but sees the US global defense missile system the only threat to the country, Russian Foreign Minister Sergei Lavrov said Wednesday.

"I don't see any threats from China. Actually I don't see any threats from the East except for one: the missile defense system that is the US global defense system that is being created in the United States, in the European theater, and the Northeastern Asian theater, which is wonderfully surrounding the borders of Russia," Lavrov said during an interview to Russian radio stations Sputnik, Ekho Moskvy, and Govorit Moskva.

http://sputniknews.com/russia/20150422/1021218139.html

Prototype of New RS-26 ICBM to Be Shown to US Side by Year End

The RS-26 missile, also known as Rubezh, was created on the RS-24 Yars ICBM basis

April 20, 2015
MOSCOW, April 20. /TASS/. A prototype of the RS-26 new intercontinental ballistic missile (ICBM) will be demonstrated to the American side within the framework of the implementation of the Strategic Arms Reduction Treaty (START-3), says tender documentation posted by the Russian Federal Space Agency (Roscosmos) on the public procurement website on Monday.

"Ensure demonstration of the new-type RS-26 ICBM to the American side at the ICBM production facility — Votkinsk Machine Building Plant," the document says.

This work will be done by the Center for Ground-Based Space Infrastructure Facilities Operation — the winner of the tender, according to the Roscosmos commission’s decision announced on Monday. The Space Agency will allocate for these purposes more than 11 million roubles. The contact is valid until November 25, 2015.

The Center's specialists "are to organise a visit of a US inspection group accompanied by Russian experts who will arrive for the RS-26 prototype demonstration, including accommodation and meals, transport, communication, souvenirs and, if necessary, medical and other services," the document says.

The RS-26 missile, also known as Rubezh, was created on the RS-24 Yars ICBM basis. The new upgraded missile will have a multiple warhead and is expected to be lighter than Yars. The RS-26 ICMBs will be only mobile launched, as no silo basing is envisaged for them.

According to previous reports, the RS-26 missile is to be put on combat duty already in 2015. A source in the Russian General Staff told TASS that the Irkutsk Guards Missile Formation in Siberia will be the first to receive the new ICBM.

Commander of the Russian Strategic Missile Forces (RVSN) Colonel General Sergei Karakayev said in late 2014 that the new missile would have lower mass than Yars. "We always say that we need to reduce the size (of missile systems). Speaking of the Yars land-based mobile missile system, to date, its launcher weighs more than 120 tonnes. We will make the improved missile’s weight characteristics under 80 tonnes," said the commander.

"By improving the rocket fuel component, a solid fuel component, we are creating a new missile system, which we can deploy also on different soils and in different positioning areas. You understand that it has a better off-road capability and it is smaller in size, so its combat survivability will be higher, and it will require less camouflaging facilities," Karakayev said. "We will not put it in silos, as it’s a land-based mobile missile system," he added.

http://tass.ru/en/russia/790581

FoxNews.com – New York, NY

Congress Adds Cash to Special Account to Build New Nuclear Submarines
April 20, 2015
By Military.com

Congress plans to add money into a special fund established this year for the purpose of paying for the Navy's next-generation, nuclear-armed ballistic missile submarines, the Ohio Replacement Program.

The 2015 National Defense Authorization Act established the National Sea-Based Deterrence Fund as an account created specifically to fund the program; however, it did not receive funding in the initial budget request.

Rep. Randy Forbes, R-Va., chairman of the House Armed Services Committee Seapower and Projection Forces subcommittee, told Military.com that his Congressional subcommittee will add money to the fund as part of its current mark-up of the 2016 defense bill.
"We're going to put some dollars in that this year. As you know we've wanted to get that fund established," Forbes said. "I think this year you will see us actually putting dollars in there and increasing the opportunity for the Department to put additional dollars in there down the road."

The exact amount of the mark-up has yet to be revealed. Congressional and Navy leaders wanted to create the fund to separate its spending line from the Navy's formal shipbuilding budget in order to avoid depleting needed shipbuilding accounts.

If the funding for the Ohio Replacement program would have come from the Navy's annual shipbuilding budget – it would have devastated the Navy's overall long-term plans for the fleet, officials have said.

Rear Adm. Joseph Tofalo, Director of Undersea Warfare, said there is historical precedent for the U.S. coming up with innovative funding strategies for undersea nuclear deterrence. He cited the original Ohio-class ballistic missile submarines first built in the 1980s and the first nuclear armed submarines first built in the early 1960s, called "41 for Freedom."

"The Navy is going to need top line relief in order to accomplish the ship building program. When '41 for freedom,' and then the Ohio-Class, were built, the Navy received about $5 to $7 billion per year in additional funding for ship building. When you compare those years to all other post-Korean war years, you see that top line relief is historically consistent with what has happened over time. The issue is the additional resources and that is the conversation that is going on," Tofalo said.

Slated to serve through 2085, the Ohio Replacement program, the nuclear submarine is scheduled to begin construction by 2021. Requirements work, technical specifications and early prototyping have already been underway at General Dynamics Electric Boat.

Designed to be 560-feet–long and house 16 Trident II D5 missiles fired from 44-foot-long missile tubes, Ohio Replacement submarines will be engineered as a stealthy, high-tech nuclear deterrent.

Production for the lead ship in a planned fleet of 12 Ohio Replacement submarines is expected to cost $12.4 billion — $4.8 billion in non-recurring engineering or development costs and $7.6 billion in ship construction, the plan states.

The Navy hopes to build Ohio Replacement submarine numbers two through 12 for $4.9 billion each.

Detailed design for the first Ohio Replacement Program is slated for 2017. The new submarines are being engineered to quietly patrol the undersea domain and function as a crucial strategic deterrent, assuring a second strike or retaliatory nuclear capability in the event of nuclear attack.

Citing the Ohio Replacement Program's electric drive technology as a vital part of its ability to stay quieter and on patrol through the 2080s, Tofalo said discussions to fund the program were going well.

"When the new strategy comes into effect we are going to have 70-percent of our nation's account able nuclear warheads with the submarine force. This is a ship that is going to be on patrol through the 2080s – it is a tremendous return for the American taxpayer when you talk about preventing major power war," Tofalo added.

The Navy is building 12 Ohio Replacement submarines to replace 14 existing Ohio-class nuclear-armed boats because the new submarines are being built with an improved nuclear core reactor that will better sustain the submarines, officials have said.

As a result, the Ohio Replacement submarines will be able to serve a greater number of deployments than the ships they are replacing and not need a mid-life refueling in order to complete 42 years of service.

Electric Boat and the Navy are already progressing on early prototype work connecting missile tubes to portions of the hull, officials said. Called integrated tube and hull forging, the effort is designed to weld parts of the boat together and assess the ability to manufacture key parts of the submarine before final integration.
In 2012, General Dynamics Electric Boat was awarded a five-year research and development deal for the Ohio Replacement submarines with a value up to $1.85 billion. The contract contains specific incentives for lowering cost and increasing manufacturing efficiency, Navy and Electric Boat officials said.

The successful creation of this fund could raise questions among Army and Air Force leaders seeking for ways to fund some of their top dollar, high-priority programs. For example, the Air Force might seek top line relief for its new bomber program and the Army might wish for funds to pay for its next-generation helicopter program – Future Vertical Lift.


Washington 'Puzzled' That US Nuclear Weapons in NATO States Break Treaty

US Under Secretary for Arms Control and International Security Rose Gottemoeller said that the United States is rather puzzled by Russian claims that Washington is violating the Nuclear Non-Proliferation Treaty (NPT) by placing its tactical nuclear weapons in NATO member states.

22 April 2015

WASHINGTON (Sputnik) — The United States is surprised by Russian claims that Washington is in violation of the Nuclear Non-Proliferation Treaty (NPT) by placing its tactical nuclear weapons in NATO member states, Under Secretary for Arms Control and International Security Rose Gottemoeller stated at a press talk on Wednesday.

“We are rather puzzled as to why all of a sudden this issue has emerged,” Gottemoeller said. “It was discussed during the negotiation of the NPT during the late 1960s, the record clearly shows that the United States conveyed at the time that these weapons are not somehow shared with our NATO allies, but in fact remain under the operational control of the United States.”

Gottemoeller added the Soviet Union never mentioned that US deployment of nuclear weapons constituted a violation of the NPT, nor has Russia up until today.

On Wednesday, Russian Foreign Minister Sergei Lavrov said the United States is in violation of the NPT by placing tactical nuclear weapons in five NATO member states and allowing citizens of those countries to service and develop skills related to the use of tactical nuclear weapons systems. Lavrov noted that the practice is a serious risk for the NPT.

The exact number of US tactical nuclear weapons deployed in Belgium, Italy, Turkey, Germany and the Netherlands is unknown, but the Center for Arms Control and Nonproliferation research group estimates that around 500 warheads are deployed in those countries.

The NPT is an international treaty to prevent the spread of nuclear weapons and technology as well as to promote peaceful uses of nuclear technology.

http://sputniknews.com/politics/20150422/1021240222.html

US Will Not Survive a Nuclear War against Russia - Jean-Paul Baquiast

A nuclear strikes exchange between the United States and Russia will lead to the complete destruction of the United States, leaving Russia and China in a far better position, editor of the French portal Europesolidaire Jean-Paul Baquiast said.
A potential nuclear war with Russia will have fatal consequences for the US, whose territory would be completely destroyed in the event of mutual rocket exchange, Jean-Paul Baquiast said.

His comment came in the wake of recent internet speculation about the US’ possible intent to carry out a preemptive nuclear attack on Russia.

The concerns have risen after General Robin Rand was appointed as head of the US Air Force Global Strike Command.

There are assumptions that he might take an example from American General Curtis LeMay who became famous in 1949 for preparing a plan for a massive nuclear attack on the Soviet Union.

Unable to subdue Russia by conventional methods, Washington is preparing to destroy it with its armed forces, Jean-Paul Baquiast wrote. In the event of an armed conflict, American politicians may carry out a preemptive nuclear strike.

"Chances of the United States to destroy Russia without consequences for itself are small," Baquiast said.

However, even the highly efficient S-500 missile system, which Russia is currently working on, would be unable to protect the country against a massive launch of ballistic missiles from US submarines, he noted.

In turn, Russia would launch its missiles from its submarines off the coast of the United States. And if the Americans manage to hit only a part of the Russian territory due to its large size, the US will be destroyed completely, the journalist wrote.


S. Korea to Raise Defense Spending by 2020
By Oh Seok-min
April 20, 2015

SEOUL, April 20 (Yonhap) -- South Korea said Monday it will sharply raise the defense budget over the next five years to beef up its capabilities against North Korea's nuclear and missile programs.

The budget injection of 8.7 trillion won ($8.03 billion) is based on the assessment that Pyongyang is believed to have reached a "significant" point in efforts to master the technology to miniaturize nuclear warheads that fit atop missiles.

It is part of the ministry's budget plan for the 2016-2020 fiscal period, which calls for 232.5 trillion won in total, a 7 percent increase on average during the cited period compared to its 2015-2019 version.

While costs for maintaining troops are set at 155.2 trillion won and the rest will be for the improvement of military capabilities, the government, specifically, is to invest 6 trillion won in building the country's preemptive strike apparatus, the Kill Chain, and 2.7 trillion won into the development of the low-tier air defense program, the Korean Air and Missile Defense (KAMD) system, over the next five years.

The aggregate amount is 700 billion won more than the budget plan stated in the 2015-2019 period, which reflects Seoul's will to ensure a stronger deterrence against the belligerent North.

Key assets for the Kill Chain incorporate multi-purpose satellites, Global Hawk unmanned aircraft and Taurus missiles. The KAMD system includes patriot interceptors and mid-range surface-to-air missiles, or M-SAM.
As part of efforts to effectively cope with North Korea's local provocations and to prepare for all-out war with the enemy, Seoul plans to spend 1.8 trillion won on acquiring surveillance systems such as unmanned aerial vehicles and detection radars.

In the face of the North's growing security threats online, South Korea plans to earmark 100 billion won to build a multi-layer protection system and to create a mock training field.

"The mid-term budget plan also focuses on improving circumstances at the barracks and increasing monthly payments to enlisenees by more than double," a ministry official said. "We also aim to augment the investment in research and development from the current 6.5 percent of the total defense budget to 8.4 percent by 2020 to further promote defense fields."

http://english.yonhapnews.co.kr/national/2015/04/17/61/0301000000AEN20150417009700315F.html

The Korea Times – Seoul, South Korea

**NK's ICBM Capability Unreliable: CRS Report**

By Jun Ji-hye
April 22, 2015

North Korea's claim that it is capable of building a nuclear-armed intercontinental ballistic missile (ICBM) to fire at the United States is unreliable and untested, according to a recent U.S. congressional report.

"Although senior North Korean military leaders stated in 2012 their long-range missiles could hit the United States with nuclear weapons, there is no clear evidence that Pyongyang has developed a warhead small enough to fit on an ICBM," the Congressional Research Service (CRS) said.

The summation is part of its report titled "Ballistic Missile Defense in the Asia-Pacific Region: Cooperation and Opposition."

"North Korea has not to date demonstrated a reliable capability to hit targets such as Guam or other U.S. territory with a ballistic missile," the report continues.

The analysis runs counter to recent comments made by U.S. military officials that they believe the isolated state has the ability to build such a missile.

Adm. William Gortney, commander of U.S. Northern Command, said on April 7, "Our assessment is that they have the ability to put a nuclear weapon on a KN-08 and shoot it at the homeland."

In October, Gen. Curtis Scaparrotti, commander of U.S. Forces Korea (USFK), also said that he believes the repressive state has "the capability to have a miniaturized device at this point, and they have the technology to potentially actually deliver what they say they have."

Since 2010, the North Korean military has unveiled new ballistic missiles seemingly based on Russian designs. However, a reported mobile ICBM vehicle paraded through Pyongyang has not been flight tested, which has led some analysts to conclude that it is a mock prototype.

The CRS report noted that the North has made slow progress toward developing a reliable long-range ballistic missile.

"The December 2012 launch was the first successful space launch after four consecutive test failures in 1998, 2006, 2009 and April 2012," it said. It added that its inconsistent progress toward developing a long-range missile calls into question that it could successfully test an ICBM that could deliver a small nuclear payload to the United States by 2015.

The report added that experts remain divided on the potential capabilities of these missile types.
Seoul’s defense ministry has said that it did not believe that the North has completed development because it has yet to test-fire the missile, which is required before operational deployment.

Some critics here have argued that Washington was deliberately creating controversy about the KN-08 ICBM ahead of the visit of U.S. Secretary of Defense Ash Carter to Seoul on April 9 in a bid to deploy the controversial Terminal High Altitude Area Defense (THAAD) system on the Korean Peninsula.


China Scholar Warns of More Nuclear Warheads if THAAD Deployed in S. Korea

April 22, 2015

China could increase its nuclear warheads if an advanced U.S. missile-defense system is deployed in South Korea, a Chinese scholar warned.

Teng Jianqun, a senior researcher at the state-run China Institute of International Studies, has also said the possible deployment of the Terminal High-Altitude Area Defense system to South Korea has become a "tough choice" for how Seoul is balancing bilateral ties with Washington and Beijing.

China's concerns over the possible deployment of the THAAD battery to South Korea have been known, but the warning by Teng took a more caustic and stark tone.

"The possible deployment of the U.S. THAAD system in South Korea will test relationships among China, South Korea, the United States, or even Russia," Teng said in his English-language report dated April 1 and recently posted on the Chinese institute's website.

"It is not simply a military project for the sake of South Korean and U.S. security," Teng said. "If necessary, China will take some solid measures to counter the power of the U.S. missile defense program, including updating and increasing the number of its conventional and nuclear warheads."

To better cope with the growing threats of North Korea's nuclear and missile capabilities, both South Korean and U.S. officials have indicated the need for the THAAD battery.

Arguing that the U.S. missile-defense system could also target China, Beijing has publicly pressed Seoul not to accept the THAAD battery. In return, South Korea's defense ministry has blamed China for trying to "influence" Seoul's security policy.

Last October, South Korean Defense Minister Han Min-koo told lawmakers that deploying a THAAD battery at a U.S. military base in South Korea would help defend against North Korea's missile and nuclear threats. South Korea is home to about 28,500 American troops.

"South Korea used to be very cautious toward the U.S. proposal but today has become more flexible to the possibility in consideration of geopolitics, the economy and the security relationship," Teng said.

"Sandwiched between the two major powers in this region, South Korea has to make a tough choice over the deployment of THAAD in the near future," the Chinese scholar said.

South Korea and the U.S. have called for China, the economic lifeline of North Korea, to do more in reining in North Korea's nuclear and missile programs, but China's stance over its ideological ally, Pyongyang, has often been self-contradictory.
Many analysts believe that China's ruling Communist Party leadership won't put enough pressure on North Korea to give up its nuclear ambitions because a sudden collapse of the North's regime could threaten China's own security interests. (Yonhap)


China Suspects North Korea Has 20 Nuclear Warheads that Could Double by Next Year
By Jayalakshmi K
April 23, 2015

Pyongyang could have more nuclear arsenal than previously thought, believe Chinese experts and suspect that North Korea may already have around 20 nuclear warheads and a uranium enrichment capacity of doubling that number by next year.

This exceeds the US Congressional estimate of the country possessing around 10 to 16 nuclear weapons.

The Wall Street Journal has reported that the Chinese estimate, which was relayed to US nuclear specialists in a closed-door meeting in February, is close to the higher side of a range estimated in a report published in February by the US-Korea Institute at the Johns Hopkins School of Advanced International Studies.

That report stated that the country had 10 nuclear weapons at the end of 2014, while this could double by 2020. The report also assumes that Pyongyang would struggle to find resources by the end of 2020 and would halt producing the weapons thereon.

It also estimated that in a worst case scenario, North Korea could possess around 100 atomic weapons by 2020.

According to the report, Pyongyang has succeeded in miniaturising nuclear warheads, and its missiles can reach neighbouring South Korea and Japan, while it is developing a longer range model capable of targeting the US.

The latest Chinese estimate reflects growing concern in Beijing about the nuclear ambitions of its neighbour and ally.

The capacity to produce centrifuges needed to enrich uranium and how much of the fissile material would go into making each bomb are some of the factors experts are studying.

And the journal suggests that the country has robust retaliatory capabilities to pose a threat to the United States.

Meanwhile, Siegfried Hecker, a leading expert on North Korea's nuclear programme, who attended the February meeting, has warned that a sizeable North Korean stockpile would make it difficult to persuade Pyongyang to denuclearise.

North Korea carried out nuclear tests in 2006, 2009 and 2013 and has an active ballistic missile development programme.

Pyongyang often launches missiles to protest joint military exercises by the US and South Korean forces in the Korean Peninsula.

The regime had recently declared it has the capability of launching a nuclear missile at "anytime" if attacked. While experts acknowledge the nation has the ability to build nuclear weapons, it remains unclear whether it possesses the technology to miniaturise warheads and mount them on ballistic missiles.

In a white paper published in January, the South Korean defence ministry said the North had already taken its miniaturisation technology to a "significant" level.
Chinese Supercomputer 'Too Slow' to Compete in Race for Hypersonic Weapons, Scientist Warns

By Stephen Chen
Friday, 24 April, 2015

A supercomputer used by China to develop a hypersonic space weapon was too slow, having a processing speed only a tenth of that of its American counterpart, according to a researcher involved in the highly sensitive project.

While China possesses some of the world’s most powerful computers, Ye Youda, researcher at the state laboratory of aerodynamics in Mianyang, Sichuan and a key scientist on the hypersonic weapon project, complained about a shortage of computing power in a paper in the latest issue of the Chinese Science Bulletin.

Ye said the computer used in China’s hypersonic project would need to increase its performance 10 times to match its U.S counterpart, the Pleiades supercomputer at NASA. The US machine did not even make the latest top ten list of world ranking by website top500.org, which compiles statistics on the world’s supercomputers.

China has 61 supercomputers and quite a few models are faster than the Pleiades, including the Tianhe-2 supercomputer developed by the National University of Defence Technology. The computer has held the No.1 position for more than two years with its speed of 33.86 quadrillion calculations per second, outperforming the second-place machine, the Titan in the U.S, by nearly two to one.

But Ye’s paper revealed that top priority weapons research did not always get access to the best supercomputers. Some mainland computer scientists said that machines such as the Tianhe-2 were not created to meet specific needs, but to win a place on the top500 list. They were “face projects”.

Scientists also said that the power of the top machines is not fully used because of the difficulties in writing the complex software needed for some tasks. While the Chinese government invested a lot of resources on hardware to win the supercomputer race, software development was often neglected and short of funding.

Hypersonic weapons are one of the most important military research projects in China, which joined the hypersonic arms race relatively late but is making rapid progress. Despite Ye’s complaint however, the military conducted a third test flight of a hypersonic weapon system last December.

At hypersonic speeds, a missile or delivery vehicle could travel up to 10 times the speed of sound to reach anywhere in the world within an hour. Most defence systems would not be able to intercept an object at such a high speed.

As in many countries, China’s programme is top secret, but in the paper Ye revealed some of the important breakthroughs in the last five years.

He said military researchers had developed several prototypes with various designs to achieve high aerodynamic efficiency, while “significant advancements” had been made in heat control, flight stability and wind tunnel buildup.

But he warned that a weakness in high-performance computing was hampering China’s endeavours. Without faster computers, Chinese researchers would have to waste time breaking down sophisticated calculations into smaller jobs so they could be run on less advanced machines.

At the same time, the lack of computing power slowed down scientists’ effort to create and verify innovative designs for hypersonic weapons, he wrote.
A good supercomputer could be used as a “digital wind tunnel” to quickly develop prototypes for test flights and help the decision on the choice of models for production.

Ye did not name the supercomputer system his team wanted to use for the hypersonic project.

However, since each supercomputer has a unique physical structure, scientists would have to develop new algorithms and software if they wanted to move the weapon project to a new platform, such as the Tianhe-2, Ye said.

Besides the Tianhe-2 in Guangzhou, China’s other high-performance computers include the Tianhe-1A at the National Supercomputer Centre in Tianjin, the Nebulae in Shenzhen and Sunway Blue Light in the eastern city of Jinan.


S-400 Missile Defense Strength Doubled in Russia's Far East
April 20, 2015

Another top notch S-400 missile defense system has been deployed to Russia's far eastern Kamchatka Peninsula. The new generation weapons with a range of up to 400 kilometers can bring down small planes and nuclear charged ballistic missiles.

Thirty-six units of military hardware that make up one S-400 ‘Triumph’ (NATO codename SA-21 Growler) regiment were delivered to Kamchatka in the Far East from Southern Russia by sea. The Defense Ministry says it’s already been unloaded and taken to its permanent location near the city of Petropavlovsk-Kamchatsky.

It’s planned that five S-400 echelons will protect Kamchatka’s skies. Each delivery follows the systems’ thorough testing and training of personnel at the Kapustin Yar military range in the south of the country.

S-400’s are already protecting the skies over Moscow and St. Petersburg, and Severomorsk – the headquarters of the Northern Fleet, the Kaliningrad region – the most western part of the country, locked between Poland, Lithuania and Belarus and home to Russia’s Baltic Fleet, and also southern regions and the coast of the Sea of Japan in the Far East.

The S-400 is a new generation anti-aircraft system, which can be equipped with very long-range missiles (up to 400km), long-range (250km) and medium-range (120km). It’s capable of shooting down anything from small aircraft to cruise missiles such as the Tomahawk, and even ballistic missiles armed with nuclear warheads.

For the next few years Russia doesn’t plan to export the system. It will only sell the older S-300. However, a future S-400 shipment deal has been struck with China, which became the first state on the list of at least eight other countries wanting to get their hands on it, including Saudi Arabia and Turkey.


Russia Will Not Deploy Nuclear Forces Outside its Territory — Lavrov

Russia is interested in ensuring its conventional forces should be capable of coping with missions around the globe, Russian Foreign Minister said
April 22, 2015
MOSCOW, April 22. /TASS/. Russia does not believe that for maintaining its security it may have to deploy nuclear weapons outside its national territory, but at the same time it is interested in ensuring its conventional forces should be capable of coping with missions around the globe, Russian Foreign Minister Sergey Lavrov said in a live interview to three radio stations on Wednesday.

"We do not believe that the security of our country must be maintained by moving our nuclear forces some other places," he said. "As far as the conventional forces, including the Navy and the Air Force, are concerned, we are interested in ensuring they should be able to cope with tasks around the globe. We use airfields and ports and are prepared to negotiate the creation of logistic facilities with other countries."

Lavrov said Russia did not need foreign bases identical to those of the United States.

"But the opportunities for making a stop, fuelling the tanks, giving the crew sometime for rest and recreation and replenishing supplies should certainly be built up," he added.

According to the minister, Moscow doubts the sincerity of the US idea of a ‘nuclear zero’ because it is necessary to take into account new technologies in the nuclear sphere.

"The nuclear zero idea looks crafty in a sense. We have not just set the task of banishing nuclear weapons. We have set the task of making the world a safe place," he said. "That means that we must rely on the new military technologies that have emerged since the invention of nuclear weapons and that influence strategic stability."

"For instance, the United States is developing hypersonic weapons, which will be non-nuclear, but still strategic. The program is called prompt global strike," Lavrov said. "The ultimate aim is to have the capability to attack any spot on the globe within an hour after the decision has been made."

"True, this weapon will be more humane than the one used in Hiroshima or Nagasaki, but from the point of view of its military effects it will be more powerful that nuclear weapons," Lavrov said. "Also, there is a great problem with US plans for putting weapons in space and attaining the same aims from there."


Sputnik International – Russian Information Agency

**Russia Conducts Simulated Launches of Iskander-M Missiles**

24 April 2015

An Iskander-M missile unit of Russia’s Eastern Military District performed a computer-simulated launch of one of Russia’s most advanced rockets during a snap drill, the RMD’s press spokesman Alexander Gordeyev said Friday.

"Members of a missile brigade of the Eastern Military District deployed Iskander-M missile complexes at the Bidzhan test range and performed electronically simulated launches as part of a test check for the winter training season," Colonel Gordeyev said.

The Iskander-M tactical missile system (also referred to as NATO’s reporting name SS-26 Stone) is considered to be among the most advanced surface-to-surface missiles available today.

The system is characterized by high mobility and maneuverability, as it takes just 20 minutes to be readied for launch.

The system is capable of hitting targets at a distance of up to 500 kilometers, with a precision of around 30 centimeters.

It can hit adversary troops or underground command centers, depending on the warheads placed on the rockets. If necessary, its missiles can also be armed with nuclear warheads.

The advanced missile system has been used by the Russian military since 2006.
TASS Russian News Agency – Moscow, Russia

**Russian Military General Says US, West Wage First Phase of Hybrid War on Russia**

The anti-Russian policies of the Baltic countries have allowed deployment of 1,000 troops from the 3rd US infantry division in the territories of Estonia, Latvia and Lithuania

April 24, 2015

MOSCOW, April 24. /TASS/. The United States and its allies in the West are waging the first phase of hybrid warfare against Russia, the commander of Russia's Western Military District, Colonel-General Anatoly Sidorov said on Friday. In doing this they use political and economic methods with the aim of destabilizing the situation in the country, he explained.

"The United States is using greater intensity of the Russian Armed Forces’ operative and combat training in the Western ‘strategic direction’, and also Crimea’s reunification with Russia in attempts to form the image of our country as an aggressor against European countries," Sidorov said.

He recalled NATO had considerably stepped up its military presence in Eastern Europe.

"The anti-Russian policies of the Baltic countries’ political leadership have allowed for the forward deployment of 1,000 troops from the 3rd US infantry division in the territories of Estonia, Latvia and Lithuania," he said.

"Besides, the situation in the region is keynoted by a brainwashing campaign with the aim to foment steady anti-Russian sentiment in society," Sidorov said.

**Hybrid wars are main type of modern military conflicts**

The general noted that hybrid wars are the main type of international conflicts these days, with the emphasis placed not on combat operations, but large-scale propaganda campaigns inside the potential enemy country.

"Central to modern wars are ever more often unconventional, hybrid types of operations, incorporating both military operations and activities without the use of military force," he said. As an example of countries conducting the so-called hybrid wars Kartapolov mentioned the United States, which was trying "to shake loose the Russian economy with the blows of economic sanctions and to impair greater independence of the European Union and its main engines - Germany and France."

In part, Kartapolov said, this is seen in the US Ukraine Freedom Support Act, adopted on December 19 last year, which called for using non-commercial political organizations in Russia "for the sake of attaining the US aims of disorganizing Russia’s national development," Kartapolov said.

http://tass.ru/en/russia/791533

**Khamenei: Iran Nuke Weapons are American ‘Myth’**

Al Arabiya – Dubai, U.A.E.

Iran's Supreme Leader Ayatollah Ali Khamenei said on Sunday the United States had created the "myth" of nuclear weapons to portray Iran as a threat, hardening his rhetoric before nuclear negotiations resume this week.

http://sputniknews.com/russia/20150424/1021328730.html

Return to Top
Khamenei has supported the talks but has continued to express deep mistrust of the United States. As the highest authority in Iran, the withdrawal of his support could cause the negotiations to collapse.

"They created the myth of nuclear weapons so they could say the Islamic Republic is a source of threat. No, the source of threat is America itself," Khamenei said in comments cited by the semi-official Fars news agency.

"The other side is methodically and shamelessly threatening us militarily ... even if they did not make these overt threats, we would have to be prepared," he said in an address to military commanders.

Iran and six world powers including the United States reached a framework accord on Iran's disputed nuclear program this month and will resume negotiations in Vienna this week aiming to reach a final deal by the end of June.

Despite significant progress, the two sides still disagree on several issues, including how quickly international sanctions would be lifted under a final deal.

Meanwhile, a senior commander in Iran's Revolutionary Guard said Sunday that inspectors would be barred from military sites under any nuclear agreement with the world powers.

"Humiliating a nation"

Gen. Hossein Salami, the Guard's deputy leader, said on state TV that allowing the foreign inspection of military sites is tantamount to "selling out."

"We will respond with hot lead (bullets) to those who speak of it," Salami said. "Iran will not become a paradise for spies. We will not roll out the red carpet for the enemy."

A fact sheet on the framework accord issued by the State Department said Iran would be required to grant the U.N. nuclear agency access to any "suspicious sites." Iran has questioned that and other language in the fact sheet, notably that sanctions would only be lifted after the International Atomic Energy Agency has verified Tehran's compliance. Iran's leaders have said the sanctions should be lifted on the first day of the implementation of the accord.

The fact sheet said Iran has agreed to implement the Additional Protocol to the Non-Proliferation Treaty, which would grant the IAEA expanded access to both declared and undeclared nuclear facilities.

But Salami said allowing foreign inspectors to visit a military base would amount to "occupation," and expose "military and defense secrets."

"It means humiliating a nation," Salami said on state TV. "They will not even be permitted to inspect the most normal military site in their dreams."

Iran allowed IAEA inspectors to visit the Parchin military site in 2005 as a confidence-building measure, but denied further visits, fearing espionage.

Western nations have long suspected Iran of secretly pursuing a nuclear weapons capability alongside its civilian program. Tehran denies such allegations, and insists its nuclear program is entirely peaceful.

http://english.alarabiya.net/en/News/middle-east/2015/04/19/

Return to Top

FARS News Agency – Tehran, Iran
Monday, April 20, 2015

Iran: IAEA Convinced about Neutron Transport Issue

TEHRAN (FNA) - Iranian experts have convinced the International Atomic Energy Agency (IAEA) about the issue of the papers published in the country in relation to neutron transport and associated modeling, a spokesman
announced on Monday, adding that Tehran will provide the IAEA with only one time access to the Parchin military site.

"The AEOI experts convinced them that this (paper) is merely an academic essay and such a paper could be published on any other topic such as enrichment and of course, I think that the IAEA has been convinced, but is mulling (to declare) its acceptance," Spokesman of the Atomic Energy Organization of Iran (AEOI) Behrouz Kamalvandi told reporters in a press conference in Tehran today.

The spokesman had said in March that the two cases which had remained unsettled with the IAEA were the alleged initiation of explosives in Marivan, and the papers published in Iran in relation to neutron transport and associated modeling and calculations and their alleged application to compressed materials.

Kamalvandi was also asked by reporters today about the possibility of the IAEA's visit to Parchin military site.

"Mr. (Hassan) Rouhani, the Iranian president, in a meeting with IAEA Chief Yukiya Amano has stressed that the IAEA will be allowed to pay an exclusively one-time visit to Parchin and of course this will happen provided that no new allegations, ambiguities and questions will be raised in this very regard again," he added.

Parchin military center, which contains no nuclear or nuclear-related facilities or installations, has already been visited twice by IAEA inspection teams, headed by former deputy director general of the world body when Mohamed ElBaradei was the IAEA Director General.

Kamalvandi also said that in none of the recent meetings between Iran and the IAEA, the issue of Parchin has been raised.

He also elaborated on the heavy water produced by Arak reactor in Central Iran, and said, "At present, we have 100 tons of heavy water and we can export a part of it after the final agreement (is struck with the world powers)."

Kamalvandi reminded that Iran has spent a lot of money in its heavy water reactor in Arak, and it is, thus, determined to keep its achievements there.

In relevant remarks in March, AEOI Chief Ali Akbar Salehi stressed that Iran's redlines for any final nuclear deal with the Group 5+1 (the US, Russia, China, Britain and France plus Germany) remain unchanged, reiterating that Tehran was resolved to keep its Arak heavy water reactor and Fordo Enrichment Plant.

Salehi said at the time that "the function and nature of the Arak Heavy-Water Reactor...will remain unchanged as a heavy water facility".


Return to Top

Bloomberg News – New York, NY

Inspectors Need Full Access in Iran Nuclear Deal, Moniz Says

Access to sites remains a potential hurdle to a final deal designed to prevent Iran from developing a nuclear weapon.

By Jim Snyder
April 20, 2015

Nuclear inspectors will need unfettered access in Iran as part of a deal to lift economic sanctions, U.S. Energy Secretary Ernest Moniz said a day after an Iranian general said military sites must be off limits.

“We expect to have anywhere, anytime access,” Moniz, a nuclear physicist who negotiated the technical details of a framework nuclear accord, said Monday in a meeting with editors and reporters at Bloomberg’s Washington office.
Inspections of Iran’s military sites under the proposed long-term agreement wouldn’t be “frivolous;” they would be part of “a well-defined process,” he said. United Nations inspectors would need access to any location if they had well-founded suspicions of covert “out-of-bounds activities.”

On Sunday, Brigadier General Hossein Salami, deputy head of Iran’s Revolutionary Guard Corps, said “they will not even be permitted to inspect the most normal military site in their dreams,” according to the state-run Press TV.

The U.S. and five other world powers on April 2 in Switzerland announced a framework for an agreement to curb Iran’s nuclear program in exchange for relief from economic sanctions. The negotiators have set a June 30 deadline to reach a final deal.

**Inspectors’ Access**

Access for UN inspectors is one of the biggest hurdles to a final deal designed to prevent Iran from developing a nuclear weapon. Iran’s Ayatollah Ali Khamenei has said inspectors would be barred from certain military facilities.

In response to Moniz’s comments, the deputy head of Iran’s Atomic Energy Agency, Behrouz Kamalvandi, said Iran hasn’t agreed to “anywhere, anytime” inspections, saying “negotiations are continuing,” the Iranian Students’ News Agency reported.

The other major obstacle to a deal is agreement over the pace of sanctions relief. Iran wants oil and financial sanctions lifted immediately upon signing a deal, while the U.S. and its partners have said Iran first needs to scale back its nuclear program -- a process that Moniz predicted would take six months to complete -- before sanctions will be eased.

White House spokesman Josh Earnest signaled a possible compromise Monday, saying sanctions relief can come after “Iran has begun taking the tangible, measurable, verifiable steps that they commit to.” Until now, U.S. officials have insisted Iran will have to complete -- rather than simply begin -- limiting its nuclear activities before sanctions relief will begin.

**‘Creative Negotiation’**

Earnest said there will be no lifting of sanctions before actions are taken by Iran. On Friday, President Barack Obama said getting agreement over sanctions relief will require “creative negotiations” on the part of Secretary of State John Kerry and his team, including Moniz.

In his interview, Moniz said he thought it would take Iran at least six months to meet the terms of a deal sufficient to warrant relief from the sanctions. Those terms include reducing its stockpile of enriched uranium to 300 kilograms from 10,000 kilograms and cutting the number of centrifuges.

“I would say six months or so, to me, looks to be about perhaps the minimum that will be required to execute all those steps,” so that inspectors can verify Iran’s compliance before sanctions relief is given, Moniz said on Bloomberg Television. “Iran may be able to pick up the pace and lower that somewhat.”

“Sanctions timing and access are going to be the two issues that have to be resolved appropriately,” Moniz said. “And if not appropriately, I don’t see how we can go forward.”

**Oil Exports**

Moniz also discussed calls from lawmakers to permit U.S. oil exports, which have largely been banned since the Arab oil embargo 40 years ago.

Senator Lisa Murkowski, an Alaska Republican and the chairman of the Senate energy committee, said last week the restrictions were inappropriate given the increase in U.S. oil production, and the prospect Iran would be able to sell its oil on world markets if a nuclear deal is struck.

Moniz said the administration was reviewing the policy, but he noted that the U.S. is still “a very large” importer of oil, unlike Iran.
“I think that perspective has to be retained in this discussion,” he said.

A potential swap of light sweet crude from the U.S. with heavier crude from Mexico, now under review by the U.S. Commerce Department, was an “interesting possibility,” as an interim step, Moniz said. U.S. producers have said U.S. production may outstrip the ability of refiners to process the oil, creating a glut that would discourage more drilling and lead to additional job losses for the industry.

Moniz said U.S. refiners are modifying their facilities to process greater amounts of the light crude produced in places like North Dakota’s Bakken field and Texas’s Eagle Ford formation.


Press TV – Tehran, Iran

Syria’s Assad Denies Alleged Use of Chlorine Gas in Idlib

Tuesday, April 21, 2015

Syrian President Bashar al-Assad has flatly denied reports that his government was behind an alleged chlorine gas attack in the northwestern Idlib province last month.

“We didn’t use it (chlorine gas). We don’t need to use it. We have our regular armaments, and we could achieve our goals without it,” said Assad in a wide-ranging interview with France 2 television network on Monday.

While insisting that Damascus has never used chlorine gas in its battle against foreign-sponsored terrorists, he further pointed out that a Syrian chemical factory in north of the country near the Turkish border remains under the control of foreign-backed Takfiri terrorists and even international inspectors have not been allowed to visit the plant.

The Syrian president also refuted some media reports about the use of the so-called barrel bombs, asking the interviewer, “What are barrel bombs?” He then reiterated that Syrian forces possess no such weapons and have never used banned armaments.

During the interview, President Assad further insisted that Washington was responsible for the creation of the ISIL Takfiri terrorist group, adding that the notorious terror enterprise was established in Iraq back in 2006 when the country was in control of the US-led military forces.

"The ISIL was created in Iraq in 2006 under the supervision of the Americans. I wasn’t in Iraq. I wasn’t controlling Iraq. The Americans controlled Iraq, and ISIL came from Iraq to Syria," he said.

He further blasted France and other western nations for extending support to Takfiri terrorists across Syria.

“France and other countries don’t have the right to support anyone within our country. This is a breach of the international law, this is a breach of our sovereignty, this is a breach of the values... One of these values is democracy. Is it democracy to send armaments to terrorists?” Assad argued.

“So [do] I have the right to support the terrorists who attacked Charlie Hebdo for example?” he then asked.

The Syrian president also acknowledged inviting the Lebanese resistance movement Hezbollah to his country to help in the battle against the foreign-sponsored militants, but denied accusations from the foreign-backed opposition and Saudi Arabia that Iran has troops on the ground in Syria.

"We invited Hezbollah, but not the Iranians. There are no Iranian troops in Syria and they have not sent any force," said Assad.
Iran Rejects US Call for ‘Anywhere, Anytime Access’ to Military Sites
Tuesday, April 21, 2015

Iran has rejected a call by US Energy Secretary Ernest Moniz for unlimited access of the International Atomic Energy Agency (IAEA) inspectors to the Islamic Republic’s military sites.

In a Monday interview with ISNA news agency, the spokesman for the Atomic Energy Organization of Iran (AEOI) described Moniz’s demand as “not practical and acceptable.”

Behrouz Kamalvandi noted that negotiations aimed at reaching an agreement over Iran’s nuclear program “are still underway,” urging the other side to put forward its views during the talks.

Kamalvandi stressed that Tehran will not undertake any commitments beyond “common laws and regulations.”

Earlier on Monday, Moniz said nuclear inspectors will need free access in Iran as part of a possible deal on the Iranian nuclear program.

“We expect to have anywhere, anytime access,” added the nuclear physicist, who has been part of the recent nuclear talks between Iran and the P5+1 group of countries.

He stated that inspections of Iran’s military sites under a proposed long-term agreement would not be “frivolous” and would be part of “a well-defined process.”

Moniz also said it would take at least six months to lift nuclear-related anti-Iran sanctions. However, Tehran insists that the sanctions must be lifted immediately after the nuclear deal takes effect.

The comments came after Brigadier General Hossein Salami, the second-in-command of the Islamic Revolution Guards Corps (IRGC), said the Islamic Republic will never permit inspections of its military sites.

“Not only will we not grant foreigners the permission to inspect our military sites, we will not even give them permission to think about such a subject,” he said.

He added that a harsh response awaits anyone who talks about such inspections.

There have been reports in the Western media that a final deal between Iran and the P5+1 group of countries could see Tehran allow international inspectors to visit its military sites. Tehran has categorically denied the reports, describing them as mere rumors and wrong interpretations of the understanding reached in early April in Switzerland.

Iran and the P5+1 group – comprised of Russia, China, France, Britain and the US plus Germany -- reached a mutual understanding on Tehran’s nuclear program on April 2 in Switzerland. The two sides are expected to start drafting a final inclusive deal which they seek to sign by the end of June.
MOSCOW, April 23 (Xinhua) -- Russia will not deliver S-300 anti-aircraft missile systems to Iran any time soon despite a lift of the ban, a senior Russian diplomat said Thursday.

"This is not a matter of the nearest future," Deputy Foreign Minister Sergey Ryabkov said. "I cannot forecast anything regarding the timing (of S-300 delivery), but it is clear that situation has changed after the decision made by the Russian president."

Meanwhile, the diplomat stressed that Russia is not going to automatically re-impose sanctions even if Iran would violate its obligations stipulated during the talks in Switzerland with international mediators.

"New sanctions should be imposed only by adopting a new UN resolution," Ryabkov said.

Earlier this month, President Vladimir Putin signed a decree to lift the ban on the sales of S-300 anti-aircraft missile systems after Iran and six world powers, including Russia, reached a framework accord on parameters of Iran's controversial nuclear program.

Moscow and Teheran signed an 800-million-U.S.-dollar contract in 2007 to supply Iran with five S-300 systems.

In September 2010, then Russian President Dmitry Medvedev canceled the contract to comply with a resolution of the UN Security Council, which banned the supply of conventional weapons to Iran.
On April 2, the two sides reached a framework nuclear agreement after more than a week of intensive negotiations in Lausanne, Switzerland, with both sides committed to push for a final deal until the end of June.


Return to Top

TASS Russian News Agency – Moscow, Russia

Withdrawal of Iran's Nuclear Materials to Russia Possible — Diplomat

However, Moscow and Tehran have disagreements on the issue
April 24, 2015

VIENNA, April 23. /TASS/. Russia is viewing a possibility of nuclear material withdrawal from Iran to Russia upon an agreement with the world six powers (comprising five UN permanent member countries - Russia, the United States, United Kingdom, France and China - alongside Germany known as the P5+1), Russia’s Deputy Foreign Minister Sergey Ryabkov told TASS on Thursday.

However, Moscow and Tehran have disagreements on the issue, he said.

"Speaking about nuclear materials, there is such a possibility but, as we understand it, our Iranian friends have a somewhat different opinion on what should happen to that material," he said.

Iran and P5+1 group reached a breakthrough agreement in Switzerland’s Lausanne on April 2 on containing Tehran’s nuclear program in exchange for gradual sanctions relief. The deadline for coordinating the final agreement is June 30.

http://tass.ru/en/world/791423

Return to Top

FARS News Agency – Tehran, Iran
Friday, April 24, 2015

Iran's New Satellite Ready for Launch

TEHRAN (FNA) - Iran is preparing to launch another indigenously-made satellite into space in the near future, Chancellor of Sharif University of Technology Mahmoud Fotouhi announced on Friday.

"Sharif Sat 2 has been manufactured by Iranian researchers and is ready to be sent into orbit," Fotouhi told FNA today.

He noted that the researchers of Sharif University of Technology have prepared both Sharif Sat 1 and 2 and they are waiting to be launched.

In November 2014, Iranian Vice-President Mohammad Shariatmadari announced that Tehran was preparing to orbit its new home-made satellite, 'Sharif Sat'.

"The Iranian Defense Ministry which is in charge of launching the country's satellites into orbit has announced its readiness to put Sharif Sat into orbit before February 11, 2015 which marks the anniversary of the victory of the 1979 Islamic Revolution in Iran," Shariatmadari said.

Last year, Deputy Head of Iran's Space Agency Hamid Fazeli announced that the country will send new home-made satellites, mostly made by Iranian universities, to the space in the current Iranian year.

"Based on the foreseen timeline, Fajr, Sharif Sat, Tolou, Zafar, and A-Test will be sent to the space by the end of the current year," Fazeli told reporters in Tehran.

Sharif Sat will orbit at a distance around 500 kilometers from the Earth and it will be launched on the back of home-made 'Safir B1' (Ambassador B1) carrier.
Iran had sent small animals into space - a rat, turtles and worms - aboard a capsule carried by its Kavoshgar-3 rocket in 2010.

Iran has taken wide strides in aerospace. The country sent the first biocapsule of living creatures into space in February 2011, using its home-made Kavoshgar-3 (Explorer-3) carrier.


Islamic Republic News Agency (IRNA) – Tehran, Iran
24 April 2015

**Araqchi Says Useful Discussions Held with US, EU on Sanctions**

Tehran, April 24, IRNA – Senior nuclear negotiator Seyyed Abbass Araqchi said on Friday that useful discussions were held with the US and the EU sides on the removal of sanctions as well as the law being approved by the Congress.

Araqchi who is in Vienna at the head of a delegation said, 'We have started drafting the text and course of reaching a conclusion on the mechanism of beginning the task and frameworks is a little slow, but on the aggregate, drafting is progressing well.'

Araqchi, also deputy foreign minister for legal and international affairs, said in response to a question that which issue will be atop of drafting, he said the priority of the current round of talks will be sanctions and related issues.

The nuclear team is currently engaged in drafting the text of the deal and is discussing details of the issue, he said.

Araqchi had said before leaving for Vienna that removal of sanctions will top the negotiations' agenda.

http://www.irna.ir/en/News/81583125/

Russia & India Report – New Delhi, India

**OPINION/Article**

**Why the BrahMos Armed Sukhoi is Bad News for India’s Enemies**

*By successfully modifying the Su-30MKI to carry the supersonic BrahMos missile, India has signalled its intent to strike with devastating force early on in a conflict.*

By Rakesh Krishnan Simha
April 20, 2015

India has signalled its intent to strike enemy targets with devastating force early on in a conflict.

In September 2010 India’s newly constituted tri-services Strategic Forces Command (SFC) submitted a proposal to the Defence Ministry for setting up two dedicated squadrons of aircraft comprising 40 Su-30MKI air dominance fighters. The task of this “mini air force” is to deliver nuclear weapons.

The picture became clearer in October 2012 when the Cabinet Committee on Security green lighted a programme to carry out structural and software modifications on 42 Su-30MKIs and acquire 216 air-launched BrahMos missiles. Until then, the BrahMos – the product of an India-Russia joint venture – was for exclusive use by the Navy.

In March 2015 the SFC received the first of these 42 Sukhois equipped with the air launched version of the supersonic BrahMos. This is the first time that the SFC, which at present depends on the Indian Air Force (IAF) for delivering nuclear weapons under its command, is acquiring its own aerial assets.
Currently, India’s nuclear delivery system is based on land-based ballistic missiles such as the Agni and Prithvi plus the IAF’s nuclear-capable Mirage 2000, Su-30 MKI and Jaguar fighter-bombers. The final element of the nuclear triad, submarine-launched missiles, is still being tested.

Individually, the Su-30 and BrahMos are powerful weapons. But when the world’s most capable fourth generation fighter is armed with a uniquely destructive cruise missile, together they are a dramatic force multiplier.

The BrahMos’ 3000 km per second speed – literally faster than a bullet – means it hits the target with a huge amount of kinetic energy. In tests, the BrahMos has often cut warships in half and reduced ground targets to smithereens. The Sukhoi’s blistering speed will add extra launch momentum to the missile, plus the aircraft’s ability to penetrate hardened air defences means there is a greater chance for the pilot to deliver the missile on to its designated targets.

Likely targets

Considering that India’s primary enemy is Pakistan and that country’s chief backer is China, against which India has fought two conflicts – losing in 1962 and winning in 1967 – these two countries are the obvious targets.

Against Pakistan, the targets are obvious. A two-squadron attack using most of the SFC’s air assets can within minutes utterly cripple the country’s command and control centres; nuclear power plants, including the Kahuta ‘Death Star’ where the majority of the “Islamic” bombs are manufactured; the Sargodha Central Ammunition Depot west of Lahore where these warheads are stored; ballistic missile bases in Gujranwala, Okara, Multan, Jhang and Dera Nawab Shah; Pakistani Army Corp headquarters in Rawalpindi; the Karachi Port, Pakistan’s only major harbour and its Naval HQ; and ordinance factories that manufacture tanks and fighter aircraft.

The supersonic BrahMos armed with a conventional warhead can theoretically penetrate hardened command, control and communication centres. However, there is no guarantee these targets will be 100 per cent destroyed unless the BrahMos is nuclear tipped. A pre-emptive nuclear strike will therefore ensure that Pakistan’s offensive capability is effectively neutralised and it is never again a threat to India.

Against China, the Sukhoi-BrahMos one-two punch seems counter-intuitive as Chinese targets are located deep inland or on the coast. However, the Su-30MKI has a maximum range of 3000 km (extendable to 8000 km with in-flight refuelling). Now add the BrahMos’s 300 km reach and India can hit targets 3300 km inside China.

Why the Sukhoi-BrahMos option?

The Su-30MKI is an obvious choice. The SFC does not want untested fighters but the ones which can be relied upon to deliver nuclear-tipped missiles. The aircraft has a titanium airframe strong enough to fly a high-speed terrain following profile. The batch of 42 Sukhois will also have hardened electronic circuitry to shield them from the electromagnetic pulse of a nuclear blast.

Having a dedicated aircraft for the nuclear attack role offers India’s war planners strategic flexibility and increases the odds of success. Because ballistic missiles are used only as a weapon of last resort, they cannot really be deployed at will. Once released, they cannot be recalled and if shot down are not easily replaced. Fighter aircraft, on the other hand, can perform repeated sorties and be directed to bomb targets as they move. For instance, if Pakistan moves its warheads out of Sargodha depot, which is presumably under constant watch by Indian satellites, the Sukhois can be vectored against a column of Pakistani trucks transporting their nuclear cargo.

The SFC’s mini air force of 42 Sukhois can also launch their missiles against Pakistani targets from within Indian airspace or while flying over international waters, thereby complicating the enemy’s defences. It is a lot easier for India to destroy Pakistani war fighting capability because not only is Pakistan relatively smaller but it has also concentrated its defences in one province, Punjab.

Further developments

Because heavy modifications were necessary for integrating such a heavy missile onto the Su-30MKI, initially it seemed to make little sense to deploy a single missile. Aviation Week reports that initially even Sukhoi was
reluctant to go along. That prompted HAL to go solo, but Aviation Week says Sukhoi came on board in 2011. The Russian side provided HAL with technical consultancy especially for the modifications to the fuselage in order to accommodate the 9-metre-long missile.

“Work is also underway on a modified lighter and smaller-diameter version of the BrahMos for deployment on the Indian navy’s MiG-29K and, potentially, the Dassault Rafale,” says Aviation Week.

And signalling the country’s immunity from western sanctions, DRDO scientists say the 300 km cap on the missile’s range will be removed. The next generation BrahMos is likely to be a longer range weapon. And with the planned increased in speed, the missile will have considerably enhanced kinetic energy despite its smaller size optimised for relatively smaller aircraft such as the MiG-29.

That’s really bad news if you are in the Sukhoi-BrahMos crosshairs.

The opinion of the writer may not necessarily reflect the position of RIR.

http://in.rbth.com/blogs/2015/04/20/why_the_brahmos_armed_sukhoi_is_bad_news_for_indias_enemies_42687.html

Return to Top

The Moscow Times – Moscow, Russia
OPINION/Commentary

Russia’s Military Lacks Direction
By Alexander Golts
April 20, 2015

Once again, our national leader Vladimir Putin has personally ensured the defense and security of Russia. However, first things first. When I initially learned that the so-called "international conference" that the Defense Ministry had taken months to prepare would fall on the same date as Putin’s live call-in television show with the Russian people, I even felt some sympathy for military commanders. It was obvious that the call-in show would completely eclipse the military conference.

I could only guess as to the reason for the scheduling snafu. Had the authorities lost all ability to plan properly, or was it an attempt by Defense Minister Sergei Shoigu to show everyone how highly he ranks in Putin’s power vertical?

Now I know the real reason. Putin heroically used his show to divert the attention of the international media away from the military conference, thereby sparing Russia’s top brass the humiliation they would have inevitably suffered if outside observers had made even the most superficial analysis of their speeches at that gathering.

Although Russia’s military chiefs last year managed to conjure up the remarkable new theory that "color revolutions" are a new form of military action, this year the Defense Ministry proved unable to produce a comparable masterpiece of creativity.

This time, the speeches by Defense Minister Shoigu, General Staff Chief Valery Gerasimov and General Staff Deputy Chief Andrei Kartapolov were an endless rehashing of the same old ideas.

They argued that Russia acted within the law when it annexed Crimea because the majority of the peninsula’s residents voted in favor of the move. Of course, they made no mention of the fact that dozens of local deputies voted to hold the referendum only after Russian troops — the so-called "polite men in green" — had seized Crimea’s parliament building.

Russia’s military chiefs gave vent to a chorus of complaints over the fact that the United States and NATO have greatly reinforced their military presence near Russia’s border by dramatically increasing the number of military maneuvers and deploying additional troops to the area.
At the same time, Russian generals diligently pretended that they saw no direct connection between the “aggressive” actions of the West and Russia’s annexation of Crimea, as well as the hybrid war it has been stoking in southern and eastern Ukraine.

They also continued to accuse the United States of wanting to create a missile defense system that only at some future date might threaten Russian strategic missiles. All of these arguments, whether true or not, would only make sense if they were intended as the starting point of bilateral discussions.

The problem, however, was that in contrast to the previous three such international military conferences, Western officials simply ignored this event. It was therefore unclear to whom Russian generals were addressing their angry remarks.

What’s more, they said nothing new this time. The one exception was General Gerasimov, who hinted at the possibility of a direct military confrontation with Ukraine. "We do not know what instructions the Ukrainian authorities are receiving from their Western 'handlers' and where Kiev might direct its aggression in the future," he said. "But in any case, that uncertainty does not exclude a military threat to Russia."

But these hints and allusions were not enough to give the conference a sense of purpose. And so, by default, the attention shifted to some of the more "interesting" states present. For example, North Korean Defense Minister Hyon Yong Chol exclaimed: "We will not beg for peace and will not tolerate abuses by the U.S. and its minions. We will decisively respond to any attack — whether it is a war of conventional weapons or nuclear forces — and will rally even closer around Comrade Kim Jong Un," he said.

Disregard for a moment the ritual glorification of the North Korean dictator and ask yourself whether that statement fundamentally differs from these words spoken by the head of Russia's General Staff: "In its efforts to 'put Russia back on its knees,' the intention of the U.S. and its NATO partners to create a crisis situation in Russia's border regions becomes increasingly clear. ... The state is not unprepared to respond appropriately to the security challenges now facing it. The measures now being taken in this regard enable it to reliably protect Russia's interests," Gerasimov said.

But the real star of the conference was the defense minister of Iran — the country that Russia only days ago promised to sell S-300 missile defense systems. The Iranian Minister quickly responded: "I would like to support the idea of developing multilateral cooperation on defense between China, Iran, Russia and India to counter the deliberate movement to expand NATO eastward and the deployment of a missile shield in Europe."

Frankly, nobody but the Iranian general made any mention of such a bold proposal. I honestly doubt that China and India are ready for such "multilateral cooperation on defense." What the Iranian minister proposed is essentially a military alliance with Moscow, a move that would turn Russia into the main rogue state on the planet.

As one Gazeta.ru military expert with close ties to Russia's top brass recently wrote, "Russia is now in a state of strategic isolation and is trying to establish contact with anyone it can in an attempt to show that is not, in fact, isolated."

However, this Defense Ministry conference only demonstrated that "strategic isolation" coupled with the willingness to team up with whatever allies are at hand only indicates a condition of intellectual and moral poverty.

*Alexander Golts is deputy editor of the online newspaper Yezhednevny Zhurnal.*


*Return to Top*

Union of Concerned Scientists – Cambridge, MA

*OPINION/The Equation*
U.S. and Russian Generals Call for Reducing the Risk of Inadvertent Nuclear War

By David Wright, physicist & co-director, Global Security
20 April 2015

In an important New York Times op-ed, retired U.S. and Russian Generals James Cartwright and Vladimir Dvorkin call for the two countries to take steps to reduce the risk of nuclear weapons being launched by mistake, particularly during a time of crisis.

End Launch-on-Warning

In particular, they call for the two countries to jettison their Cold War nuclear plans that allow them to launch missiles on warning of an incoming attack. “Launch-on-warning” means what it sounds like: launching a nuclear strike based on data from warning sensors—satellites and ground radars—that indicate an incoming attack is underway. The president would have only 10-15 minutes after receiving warning to try to decide if the warning is accurate and whether to launch a nuclear strike in retaliation.

As the two generals write:

...these timelines are very compressed and the opportunities for ill-considered decisions very real. Launch-on-warning puts enormous strain on the nuclear chains of command in both countries.

In the past, the militaries in both countries have received erroneous information from early warning sensors or have misinterpreted warning data and mistakenly believed there was an attack underway. In fact, this has happened frequently enough to make it a serious concern.

The risks inherent to launch-on-warning are particularly high in a time of crisis between the countries, since leaders may be more likely to interpret ambiguous warning as real. The generals have a clear recommendation for the U.S. and Russia: End launch-on-warning

...to relieve the pressures to “use or lose” nuclear forces during a crisis and minimize the risk of a mistaken launch.

Take Missiles Off Hair-Trigger Alert

Currently, to have the option of launching their missiles on warning, both the U.S. and Russia keep a large number of their nuclear missiles on “prompt-launch status,” commonly called hair-trigger alert. This status allows them to launch these missiles within minutes. A decision to end launch-on-warning as a dangerous relic of the Cold War would mean there is no reason to keep missiles on hair-trigger alert.

Taking missiles off hair-trigger alert would eliminate the risk of launching an attack based on erroneous or misinterpreted warning. It would also essentially eliminate the risk of accidental or unauthorized launches.

UCS is urging President Obama to take missiles off hair-trigger alert in a particularly simple and effective way—by “safing” U.S. land-based missiles using a safety switch in the missile silos that is used to prevent a launch when maintenance workers are in the silo.

Some people argue that if you take missiles off alert, you run the risk that putting them back on alert during a crisis could result in a “re-alerting race” that could be destabilizing by further upping tensions. Even if this were true it misses the generals’ key point: they argue that the U.S. and Russia should not have their missile on hair-trigger alert, especially in a crisis, due to the high risks it presents.

Instead, the generals believe the threat of retaliation following an attack—not on warning of attack—is more than enough to deter an attack in the first place. They state that foreswearing launch-on-warning

...would not destabilize nuclear deterrence: Both countries still have nuclear forces designed to withstand a first-strike attack, guaranteeing retaliatory strikes.
With no need to re-alert, there would be no re-alerting race.

Reducing Nuclear Risks

The generals’ warning is particularly relevant given current U.S.-Russian tensions. They note that:

*In periods of heightened tensions and reduced decision times, the likelihood of human and technical error in control systems increases. Launch-on-warning is a relic of Cold War strategy whose risk today far exceeds its value.*

*This is therefore the riskiest scenario, since provocations or malfunctions can trigger a global catastrophe.*

There is no reason to accept the serious risks that U.S. and Russian launch-on-warning policies entail. Nor is there a reason to wait for Russia to reduce this risk; while it would be best if the two countries took these steps together, President Obama can make the U.S.—and the world—safer by taking the first step and removing U.S. land-based missiles from hair-trigger alert.

David Wright is a physicist and the co-director of the Global Security Program. He is a nationally known expert on the technical aspects of missile defense systems, missile proliferation, and space weapons.


Pakistan’s Nuclear Weapons Program: 5 Things You Need to Know

*Pakistan’s nuclear program has created a bleak security environment in South Asia.*

By Akhilesh Pillalamarri

April 21, 2015

While the world continues to focus primarily on the threat of Iran’s nuclear weapons program, a potentially much greater nuclear threat has emerged just to its east: Pakistan, the Islamic world’s only nuclear-weapons state.

Pakistan is one of the world’s only eight declared nuclear powers and probably the one that causes the most mischief. Pakistan sponsors and harbors militant groups that carry out attacks in all of its neighbors: India, Afghanistan, Iran, and even China.

Although Pakistan argues that its nuclear weapons are well-guarded, many experts are not so sure, pointing out that the Taliban and other militants have frequently struck at supposedly secure military bases with impunity. More worrisome, though, is Pakistan’s history of proliferation, which increases the chance that one day some element or the other in the Pakistani military will provide nuclear materials to an even more dangerous third party—or even to a stable country like Saudi Arabia, which could set off an arms race in the Middle East.

Also troubling is the steady radicalization of Pakistan’s military, which could at some point turn into the ideological equivalent of the Taliban. American lawmakers who constantly fret about the irrationality of the Iranian government should take note of the continuous Islamization of Pakistan’s military. Here are five things you need to know about the world’s most dangerous nuclear weapons program.

**Why does Pakistan have Nuclear Weapons?**

At first glance, it may seem strange that Pakistan has nuclear weapons, as it maintains close relations with China and the United States, neither of which would allow it to be dismembered. Even its rival India does not wish to see it collapse, but that doesn’t stop Pakistan from having nuclear weapons largely for one reason—India.

This is not only because India itself has nuclear weapons (ostensibly because China has them), but also to achieve parity with a rival that is many times larger than it in terms of size, population, and economic prowess.
Ultimately, however, nuclear weapons give Pakistan reassurance that it will never be humiliated the way it was in 1971, when Indian forces decisively defeated Pakistan in a two-front war that lead to the independence of east Pakistan as Bangladesh. If Indian forces were to ever enter Pakistani territory in such force again, it is likely that Pakistan would compensate for its conventional military inferiority by using battlefield nuclear weapons to prevent a repeat of its total defeat in 1971. This plan makes India’s Cold Start military doctrine—a swift incursion into Pakistan that would capture vital territory before Pakistan could retaliate—hard to implement.

Nuclear weapons also help Pakistan continue to bleed India. Pakistan’s possession of nuclear weapons are considered its “shield” to guard against retaliation from any punitive strike in response to attacks conducted by terrorists based in Pakistan. This gives Pakistan significant leeway in making mischief in India.

History

Pakistan conducted peaceful nuclear research from the time of its independence but began a nuclear weapons program in earnest only after its defeat by India in 1971. India itself conducted a nuclear test in 1974 and rejected proposals for a nuclear free zone in South Asia. Pakistan’s nuclear weapons program began in 1972 under Prime Minister Zulfikar Ali Bhutto, who had always been a proponent of going nuclear. Bhutto famously declared: “If India builds the bomb, we will eat grass or leaves, even go hungry, but we will get one of our own.”

Indeed, it was Pakistan’s poverty that held it back from pursuing a nuclear program in the 1960s, despite reports that India was secretly working on nuclear weapons. To compensate for this, and to accelerate the development of its own program, Pakistan resorted to subterfuge, deceit, and help from generous friends in order to go nuclear.

Pakistan’s nuclear weapons program took off under the leadership of Dr. Abdul Qadeer (A.Q.) Khan, who began trying to enrich uranium at the secret Engineering Research Laboratories (ERL) in 1976. Prior to this, A.Q. Khan worked from 1972-75 at the Physics Dynamic Research Laboratory in Amsterdam where he had access to information on uranium enrichment. Subsequently, he left the Netherlands for Pakistan with secret documents that detailed the construction of a uranium centrifuge. Once back in Pakistan, Khan’s laboratories developed a uranium enrichment plant. Khan was convicted in absentia for theft in 1983; later on, he was linked to the sale of nuclear designs and materials to North Korea, Iran, Iraq, and Libya.

In the meantime, a 1983 U.S. State Department report revealed that China had assisted Pakistan with its nuclear program—most probably to keep India in check—and had even supplied Pakistan with complete blueprints for a nuclear bomb. By 1984, Pakistan had the ability to enrich uranium to weapons grade levels. Yet work stalled for a few years in the late 1980s for a variety of reasons: American pressure and Pakistani fear of an Indian or Israeli strike. Throughout this period, Pakistan continued to improve its deliver capabilities. Pakistan finally conducted a nuclear test in 1998, in response to an Indian test that same year.

Current Capabilities

Pakistan currently possesses about 120 nuclear weapons, more than India and Israel. Pakistan does not have a nuclear triad, but that is likely to change soon with the news that Pakistan has bought eight diesel-electric submarines from China, which could be equipped with nuclear missiles.

Pakistan currently has extensive land and air based nuclear capabilities. With the development of Pakistan’s newest missile, Shaheen-III, which has a range of 2,750 kilometers, Pakistan is capable of hitting all of India and can also reach Israel. Pakistani F-16 fighters can also drop nuclear bombs deep in Indian territory and can hit major cities like Mumbai and Delhi. Finally, Pakistan is believed to be developing tactical, battlefield nuclear weapons, which are necessary for its strategy to counter India. Pakistan’s Nasr Missile has a range of 60 kilometers.

Pakistan does not have to worry about its second strike capabilities to the extent that some other countries do because of its size, which allows nuclear weapons to be scattered around multiple sites and because it has not adopted a no-first-use nuclear doctrine, meaning Pakistan is perfectly willing to use a nuke first, before retaliation. This hurts India’s nuclear deterrent capabilities, since theoretically Pakistan can hit every Indian nuclear site first (India has a no-first-use policy).
Pakistan's Alleged Nuclear Umbrella

Various reports indicate that Pakistan has joined the United States in offering to use its nuclear weapons to shield allies against nuclear threats. In Pakistan’s case, these countries include the six Arab members of the Gulf Cooperation Council (GCC), especially Saudi Arabia. Saudi Arabia is said to have funded Pakistan’s continued expansion of its nuclear stockpile in return for a guarantee that Pakistan would provide Saudi Arabia with a weapon or a nuclear shield in the case of Iran getting a bomb.

Therefore, Pakistan’s nuclear program is not only a cause of instability in South Asia; it also makes the Middle East much more dangerous. There is no guarantee that Saudi Arabia may not try to secretly acquire a nuclear weapon from Pakistan no matter what Iran does. The Wall Street Journal reported that Saudi Arabia all but expects Pakistan’s instant support in the nuclear field whenever needed.

Future

Nuclear rivalry in South Asia has reached an especially dangerous phase as Pakistan can now reach all of India and deploy battlefield nukes. The New York Times is right to note that in nuclear terms, Pakistan is the “biggest concern.” Pakistan’s factional government filled with rogue agencies is a much bigger threat to nuclear nonproliferation than Iran ever will be as there is no guarantee that someone will not provide nuclear material to terrorists or rogue groups despite orders not to do so. At least Iran is tightly controlled and methodical about what it does.

Pakistan’s arsenal of 120 nuclear weapons is rapidly growing, and could triple in a decade, giving it more nukes than France, Britain, and China. Yet Pakistan remains a desperately poor country, plagued by instability and extremism. These make it especially dangerous and more likely that its nuclear weapons will at some point be misused. All of this makes it more likely that Pakistan will continue to avoid becoming a normal country, driven by trade and development, and more likely to compensate for these failures through distracting its population with the mostly baseless India threat.

Ultimately, Pakistan’s behavior is unlikely to change because it can continue to support militants against India without fear of major retaliation. The expansion of its nuclear program merely reinforces this and adds to instability in South Asia. The only incentive to change its way would be ideological, and Pakistan continues to head in an even more radical direction while the military remains obsessed with the threat of India over all else. Pakistan’s nuclear program has given security in South Asia a very bleak future.

Akhilesh Pillalamarri is an assistant editor at the National Interest.


Return to Top

The National Interest – Washington, D.C.
OPINION/Feature

India’s Nuclear-Weapons Program: 5 Things You Need to Know

India's challenge is how to deal with Pakistan without triggering a nuclear war.
By Akhilesh Pillalamarri
April 22, 2015

India is one of the world’s greatest emerging powers today. Its economy is growing rapidly and its military is one of the largest in the world, with over a million soldiers.

India sees its nuclear weapons capacity to be an integral part of its vision as a great power, and its nuclear program is important for both its prestige and security doctrine.
Yet, India’s nuclear weapons program has not been free of controversy and criticism. India is not a signatory to the nuclear non-proliferation treaty (NPT), and is not one of the five nuclear weapons powers the treaty recognizes. India’s nuclear tests in 1974 and 1998 led to criticism and even sanctions.

Since then however, sanctions have largely been lifted and the United States had quietly accepted India’s possession of nuclear weapons so long as India does not carry out further nuclear tests, though officially, the United States has not recognized India as a nuclear weapons state. This has also led to many claims of double standards on the part of the United States for making exceptions for India—including getting the Nuclear Suppliers Group to agree to a waiver on export restrictions of nuclear materials for India—that have been granted to no other countries. This demonstrates the strategic importance of India for the West and the general global perception of its trustworthiness and stability.

Here are five things you need to know about India’s interesting nuclear program.

Why did India build Nukes?

Indian nationalist leaders speculated about the possibility of acquiring nuclear weapons even before its independence. India’s first prime minister, Jawaharlal Nehru justified this by arguing: “As long as the world is constituted as it is, every country will have to devise and use the latest devices for its protection. I have no doubt India will develop her scientific researches and I hope Indian scientists will use the atomic force for constructive purposes. But if India is threatened, she will inevitably try to defend herself by all means at her disposal.”

The main impetus for India going nuclear, however, was China, which tested a nuclear weapon in 1964. Two years prior, China defeated India in a short but decisive border conflict and relations between the two countries were subsequently tense. Taken together, Indian leaders felt that India needed nuclear weapons to counter China’s conventional superiority and defend Indian territory, some of which China was perceived to have occupied.

Nonetheless, India and China both have nuclear no-first-use doctrines and it is highly unlikely that either would risk nuclear war over a non-existent border dispute. This raises the question of why India felt it needed a nuclear weapon to counter China, a luxury many other countries with disputed borders with China forewent. Yet, India’s nuclear program was not just about countering China, but being equal to it, since Indian leaders believed that India and China were both destined to be the leaders of Asia.

Today, India’s nuclear weapons are also important as a deterrent toward Pakistan, though it developed them first and Pakistan only later developed its weapons in response. However, given Pakistan’s military stance and weapons, India’s continued possession of weapons is necessary for its security vis-à-vis its western neighbor.

History

Nuclear research in India first began at the Institute of Fundamental Research (IFR) from 1944 onward, and even prior to then, Indians had access to some Western scientific journals, the result being that India was theoretically more ahead on the path to a nuclear weapon than most other developing countries at the time. In addition to enriching plutonium and uranium, a unique component of India’s nuclear activity has been thorium, as India contains twenty-five percent of the world’s thorium deposits. Thorium is not ideal for weapons, but its use for civilian power could free up virtually all of India’s uranium and plutonium for military uses.

After India’s defeat by China in 1962, India moved toward the construction of a nuclear weapon and design work began in 1965 under Dr. Homi Bhabha. Development accelerated under Prime Minister Indira Gandhi, who both wanted to accentuate her popularity and due to fears of Chinese or American involvement in India’s 1971 war with Pakistan.

In 1974, India detonated its first plutonium device, although it characterized it as a “peaceful nuclear explosive.” Because of this characterization, India was able to avoid the worst of criticism directed against it for alleged developing a nuclear weapon, though independent observers maintained that it was part of a nuclear weapons program and Indian scientists privately admitted as much.
After 1974, India continued to develop and improve upon its nuclear weapons, experimenting with different types of designs and materials. India officially went nuclear in 1998, conducting five nuclear tests (one fusion bomb, four fission bombs), a move met with high domestic approval. Pakistan responded with its own nuclear tests, bringing South Asia’s nuclear-armed reality into the open.

The India Security Debate

While much criticism has been levied against the dangers of the Pakistani nuclear weapons program, a valid debate can also be had over whether the Indian nuclear weapons program actually improved or hurt security and stability in South Asia. This point was debated right here on The National Interest back in 2013 in a series of articles by Zachary Keck and Dhruva Jaishankar.

Keck argues “Indian leaders built the bomb with a very specific security threat in mind. Unfortunately, nuclear weapons have proven ill-suited for addressing that security threat, while India’s pursuit of atomic weaponry has opened up new challenges that wouldn’t have existed otherwise.” In his view, China’s limited objectives toward its dispute with India did not necessitate India getting a bomb in order to improve its own security, as nuclear weapons are only useful as deterrents against large-scale attacks. On the other hand, Pakistan developed nuclear weapons, a fact that undermined India’s own security vis-à-vis to its prior position.

Jaishankar counters that China’s objectives are more expansive than its seemingly limited border dispute with India and that China had in fact been giving Pakistan aid to go nuclear long before India’s 1998 test in a bid to contain India.

In fact, according to Jaishankar, China conducted a test for Pakistan in 1990, effectively making it a nuclear state. Combined with Pakistan’s prior incursions into India, India’s development of a nuclear weapon was an apt response for Chinese and Pakistani adventurism. In a response, however, Keck points out that Pakistan continued to use proxies after India’s acquisition of a nuke and that China seized some 640 kilometers of Indian territory.

The debate over whether or not India’s acquisition of nuclear materials improved its security situation continues to remain unresolved.

Capabilities

India has around 110 nuclear weapons, which is actually slightly less than how many Pakistan has (120). This is consistent with the amount of weapons-grade plutonium it has previously produced.

India, along with China, the United States, and Russia, possesses a full nuclear triad consisting of extensive air, sea, and land capabilities. India maintains multiple nuclear capable aircraft, including the Sukhoi Su-30MKI, the Mikoyan MiG-29, and the Dassault Mirage 2000, among others. India also operates nuclear submarines and has recently produced the indigenous INS Arihant. However, India’s submarine-launched ballistic missiles (SLBMs) have limited range, and Indian submarines would therefore have to creep fairly close to Chinese shores before they would be able to deliver a nuclear weapon to the mainland.

The Indian missile arsenal is large and will soon include an intercontinental ballistic missile (ICBM). In fact, earlier this India successfully tested its Agni-V for the third time. Although the Agni-V has a range of 5,000 kilometers, and is therefore technically only an intermediate-range ballistic missile (IRBM), it is frequently referred to as an ICBM in Indian media. In any case, its range could be extended in later variants, and it is already able to reach all of China. India is also developing the Agni-VI, which may have a range of up to 10,000 kilometers.

While India is ahead of Pakistan in terms of the range of its weapons and its delivery systems, its program is mostly geared towards the nuclear threat of China rather than Pakistan. Pakistan has more smartly tailored its nuclear program to the geographical and logistical characteristics of South Asian warfare by focusing on battlefield nukes, something India has not done. However, India’s nuclear strategy does not necessarily need battlefield nukes, because of its no-first-use policy; if a battlefield nuke were to be used on India, India would retaliate much more massively with regular nukes.

Future
India is expanding its stock of nuclear weapons, but not as fast as Pakistan is, since India’s has met the minimum needed for deterrent purposes while Pakistan may intend to use its nuclear weapons for offensive or battlefield purposes. India’s industrial base also enables it to build more and different types of nuclear weapons at shorter notice than Pakistan so it does not necessarily need to redirect its energies to building more weapons unless it feels them necessary.

India is also less reliant on nuclear weapons for its security as Pakistan and is focused on improving its military capabilities elsewhere, especially naval and Himalayan-based land capabilities. Additionally, India’s largest focus remains economic development and it does not feel existentially threatened.

Nonetheless, India is developing its nuclear capabilities and expanding its weapons, enriching uranium in addition to plutonium. India’s nuclear deal with the United States and the granting of a waiver for importing nuclear materials (which must be for non-military purposes) allows it to use more of its indigenously produced nuclear material for weapons. India is has also heavily invested in research on using thorium in reactors (or even potentially weapons), which will free up its other nuclear material for weapons. India hopes to soon operate thorium reactors.

One problem India needs to resolve going into the future is how to make its nuclear deterrent useful. The fact that Pakistan has nuclear weapons makes it difficult for India to make good on its threats of retaliation in the case of a terrorist attack originating from Pakistan on Indian soil. Ultimately, no Indian leader wants to trigger a nuclear war in South Asia, but no Indian leader wants to allow Pakistan to make mischief in India. Obviously, India will not give up its nuclear weapons to get Pakistan to do so, so a nuclear-armed South Asia is the premise of any future discussion on the region. Figuring out a strategy to handle this dilemma will be an important task for the Indian establishment.

Akhilesh Pillalamarri is an assistant editor at the National Interest.


Return to Top

Federation of American Scientists – Washington, D.C.

OPINION/Strategic Security

Is China Planning To Build More Missile Submarines?

By Hans M. Kristensen

April 23, 2015

Is China increasing production of nuclear ballistic missile submarines?

Over the past few months, several US defense and intelligence officials have stated for the record that China is planning to build significantly more nuclear-powered missile submarines than previously assumed.

This would potentially put a bigger portion of China’s nuclear arsenal out to sea, a risky proposition, and further deepen China’s unfortunate status as the only nuclear-armed state party to the nuclear Non-Proliferation that is increasing its nuclear arsenal.

US Projections For Chinese SSBNs

China does not provide information about how many nuclear submarines it plans to build, but US government officials and agencies occasionally give projections.

The most recent comes from the commander of US Pacific Command (PACOM), Admiral Samuel Locklear, who in his prepared testimony to the US Congress earlier this month stated that in addition to the three Jin-class SSBNs currently in operation, “up to five more may enter service by the end of the decade.”
National Intelligence Director James Clapper was a little less specific in his testimony to the Senate in February when he predicted that China “might produce additional Jin-class nuclear-powered ballistic missile submarines.”

The Pentagon’s annual report on Chinese military issues from June 2014 stated that three Jin-class SSBNs (Type-094) were operational and that “up to five may enter service before China proceeds to its next generation SSBN (Type-096) over the next decade.” That projection was not seen as implying that five additional SSBNs would be produced but that a total of five might be built. But in hindsight it could of course be seen as similar projection as the latest PACOM statement.

PACOM’s projection of “up to five” additional Jin-class SSBNs is a doubling of the projection of “4-5” SSBNs that the Office of Naval Intelligence made in 2013. That projection followed the first estimate from late-2006 of “a fleet of probably five” submarines.

Production of five additional SSBNs by the end of the decade would require fielding one SSBN per year for the next five years, a production pace that China has yet to demonstrate. The first three Jin SSBNs took more than a decade to complete and a fourth boat is rumored to have started sea trials in 2014. The fourth SSBN might be the one seen on commercial satellite images in the dry dock at Huludao in October 2013.

Google Earth images from 2014 and 2015 do not show SSBNs at Huludao, only attack submarines. However, unassembled 10-meter diameter hull sections seen at the shipyard in December 2014 indicate that construction of additional Jin SSBN hulls may be underway (see image below).

Although no Jin-class SSBN has been visible at Huludao shipyard on Google Earth since October 2013, possible Jin-class hull sections seen later indicate additional construction.

Potential Effect on Nuclear Arsenal

Construction of additional Jin SSBNs obviously would have implications for the size of China’s nuclear arsenal. With each submarine capable of carrying 12 Julang-2 (JL-2) long-range ballistic missiles, the low- and high-end projection of a fleet of 4-8 submarines would be able to carry 48-96 missiles with as many warheads. (Despite occasional
claims on the Internet that the JL-2 carries MIRV, the US Intelligence Community assigns only one warhead to each missile.

We estimate that China has a stockpile of approximately 250 nuclear warheads of which nearly 150 are for land-based missiles, 48 for submarines, and perhaps 20 for bombers. Some have speculated that China might have several thousand nuclear weapons, but former USSTRATCOM Commander General Kehler in 2012 rejected this saying that “the Chinese arsenal is in the range of several hundred” nuclear weapons. If China builds eight Jin SSBNs, it would presumably have to produce more warheads for their additional missiles. This could increase the stockpile to around 300 warheads (see table below).

<table>
<thead>
<tr>
<th>Weapon Type</th>
<th>Missiles</th>
<th>Warheads</th>
<th>Missiles</th>
<th>Warheads</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land-Based Missiles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF-4</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>Retiring</td>
</tr>
<tr>
<td>DF-5A</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>Updated</td>
</tr>
<tr>
<td>DF-21 (Mods A and B)</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>DF-31</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>Program stalled</td>
</tr>
<tr>
<td>DF-31A</td>
<td>30</td>
<td>30</td>
<td>40</td>
<td>40</td>
<td>Deploying</td>
</tr>
<tr>
<td>DF-41 (other?)</td>
<td>0</td>
<td>0</td>
<td>?</td>
<td>?</td>
<td>In development</td>
</tr>
<tr>
<td>Subtotal</td>
<td>148</td>
<td>148</td>
<td>148</td>
<td>148</td>
<td></td>
</tr>
<tr>
<td>Sea-Based Missiles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xia/JL-1</td>
<td>(1/12)</td>
<td>(12)</td>
<td>0/0</td>
<td>0</td>
<td>Not operational</td>
</tr>
<tr>
<td>Jim/JL-2</td>
<td>(3/36)</td>
<td>(36)</td>
<td>4-8/48-96</td>
<td>48-96</td>
<td>Nearly operational</td>
</tr>
<tr>
<td>Subtotal</td>
<td>(4/48)</td>
<td>(48)</td>
<td>4-8/48-96</td>
<td>48-96</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bombers (H-6)</td>
<td></td>
<td>20</td>
<td>20</td>
<td></td>
<td>Possible secondary role</td>
</tr>
<tr>
<td>Cruise missiles (DH-10/20)</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td></td>
<td>Status uncertain</td>
</tr>
<tr>
<td>Total</td>
<td>196</td>
<td>216</td>
<td>196-244</td>
<td>196-264</td>
<td></td>
</tr>
</tbody>
</table>

The total stockpile in 2015 is estimated to include approximately 250 warheads. With eight Jin SSBNs, the stockpile might grow to an estimated 300 warheads.

Other weapon systems have also been rumored to have nuclear capability, although status is uncertain: The DH-10 ground-launched land-attack cruise missile is listed by Air Force National Air and Space Intelligence Center (NASIC) as “conventional or nuclear”; the DH-20 (CJ-20) air-launched cruise missiles was listed in 2013 by US Air Force Global Strike Command the DH-20 (CJ-20) as nuclear-capable; and a CIA intelligence memorandum in 1993 concluded that China “almost certainly has developed a warhead” for the DF-15 short-range ballistic missile and predicted that deployment of a nuclear-armed DF-15 would start in 1994. A nuclear test in January 1972 was with a small bomb delivered by a fighter-bomber (Q-5), although it is uncertain if the capability was ever operationalized and fielded.

SSBN Operational Questions

If China is indeed building significantly more Jin SSBNs, as the statement by PACOM implies, then it is a surprise that raises a number of questions.
The first question is whether it is accurate. The PACOM projection is above and beyond the estimate of 4-6 SSBNs projected by the Office of Naval Intelligence in 2013. The Jin-class is a work in progress and the submarines are noisier than Soviet Delta III SSBNs developed in the 1970s. Presumably the Chinese navy is working hard to make the Jin SSBNs survivable, but up to eight would be an expensive experiment. And China appears to be designing a newer SSBN type anyway, the Type-096. Projections such as these often prove too much too soon, so only time will tell.

But if China were to deploy up to eight Jin SSBNs with up to 96 missiles, it would be a significant shift in China’s nuclear posture, which up till recently was almost entirely focused on land-based nuclear weapons. And this is odd. Why, after having spent significant sources on building mobile ICBMs to hide in forests and caves across China’s vast territory to protect its nuclear deterrent from a first strike, would the Chinese government chose to deploy a significant portion of its nuclear warheads on noisy submarines and send them out to sea where US Navy attack submarines can sink them?

A more important question is how China would actually operate the SSBNs. The Central Military Commission (CMC) does not normally hand out nuclear weapons to the military services but the whole point of having SSBNs is to hide nuclear weapons in the oceans as a secure retaliatory capability. It would be a significant change for Chinese nuclear policy if the CMC loaded warheads on the submarines and deployed them outside Chinese territory. Perhaps they will not be continuously deployed in peacetime but serve as a surge capability in a crisis.

And China does not have much (if any) experience in operating SSBNs on lengthy deterrent patrols. It has only recently started operating nuclear-powered attack submarines on lengthy patrols, including into the Indian Ocean, but the SSBNs have yet to conduct one. PACOM predicted the first would happen last year, but that didn’t happen. Now they predict it will happen this year. We’ll see.

As a party to the nuclear Non-Proliferation Treaty (NPT), a significant increase of the SSBN fleet would further deepen China’s unfortunate status as the only nuclear-armed state party to the treaty that is increasing the size of its nuclear arsenal.

This publication was made possible by a grant from the New Land Foundation and Ploughshares Fund. The statements made and views expressed are solely the responsibility of the author.

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http://fas.org/blogs/security/2015/04/china-subs/

Return to Top

ABOUT THE USAF CUWS

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

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

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

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