



UNITED STATES AIR FORCE
CENTER FOR STRATEGIC
DETERRENCE STUDIES

NEWS AND ANALYSIS

Issue 1369
7 June 2019

Feature Report

“Military and Security Developments Involving the People’s Republic of China 2019”. By Office of the Secretary of Defense; May 2, 2019

https://media.defense.gov/2019/May/02/2002127082/-1/-1/1/2019_CHINA_MILITARY_POWER_REPORT.pdf

Section 1260, “Annual Report on Military and Security Developments Involving the People’s Republic of China,” of the National Defense Authorization Act for Fiscal Year 2019, Public Law 115-232, which amends the National Defense Authorization Act for Fiscal Year 2000, Section 1202, Public Law 106-65, provides that the Secretary of Defense shall submit a report “in both classified and unclassified form, on military and security developments involving the People’s Republic of China. The report shall address the current and probable future course of military-technological development of the People’s Liberation Army and the tenets and probable development of Chinese security strategy and military strategy, and of the military organizations and operational concepts supporting such development over the next 20 years. The report shall also address United States-China engagement and cooperation on security matters during the period covered by the report, including through United States-China military-to-military contacts, and the United States strategy for such engagement and cooperation in the future.”

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NUCLEAR WEAPONS

Defense News (Washington, D.C.)

Defense Policy Bill Opens New Partisan Fight over America's Nuclear Arsenal

By Joe Gould

June 4, 2019

WASHINGTON — Over Republican objections, a Democratic-controlled House panel on Tuesday advanced legislation to halt deployment of a new low-yield nuclear warhead and bar any withdrawal from the Open Skies Treaty.

In a 10-8 party line vote, the House Armed Services Committee's Strategic Forces Subcommittee recommended its portion of the 2020 National Defense Authorization Act, which contained the provisions, to the full committee.

The subcommittee's inclusion sets up partisan fights over the size and cost of America's nuclear arsenal — both in the NDAA markup June 12 and in future talks to reconcile the bill with the GOP-led Senate's version.

One provision would bar funding to deploy a low-yield warhead on a Trident missile, or W76-2, ordered by the Trump administration's Nuclear Posture Review last year. Another would block the U.S. from withdrawing from the Open Skies Treaty, which lets its signatory nations fly over each other's territory to verify military movements and conduct arms control measures, unless Russia is in material breach.

On Tuesday, HASC member Rep. Liz Cheney, who is also the House's No. 3 Republican, offered an amendment that would have killed the language on the W76-2 and the Open Skies Treaty. It would have also deleted language in the bill meant to free the Department of Energy from a requirement to make 80 plutonium pits a year by the end of the next decade.

That amendment was defeated along party lines, 8-10, after a tense partisan debate.

Cheney afterward stopped short of saying Republicans would reject the NDAA overall because of the contentious nuclear provisions.

"I think that you saw how strongly we feel on our side of the aisle about these particular issues, and it is going to be incumbent upon the Democrats to see if they can put their partisanship aside and do what's right for the country," Cheney, R-Wyo., told Defense News. "I think tearing the NDAA apart along partisan lines doesn't serve anyone's purposes, except for those who wish us ill as a nation."

At the hearing, the panel's chairman, Rep. Jim Cooper, D-Tenn., addressed Republican accusations that the mark was partisan, insisting that it was "strong on national security, the mark is patriotic, the mark should be relatively uncontroversial because we agree on 95 percent of these issues."

Defense watchers were expecting this fight ever since Democrats won control of the House last year.

HASC Chairman Adam Smith, D-Wash., is expected to offer still more restrictive language on nuclear weapons in the days ahead, likely triggering more battles. Smith has said he wants Congress to pass an NDAA for a 59th consecutive year, but he will have to navigate partisan crosscurrents to draft a bill that can pass.

Addressing the McAleese/Credit Suisse symposium in March, the Strategic Forces Subcommittee's top Republican, Rep. Mike Turner of Ohio, said his party will not support the NDAA if it contains prohibitions on the W76-2 or on developing technology for space-based missile defense — or a “no first use” policy regarding nuclear weapons, which Smith previously supported.

“We’ve been very clear on the Republican side about issues that are red lines ... because they fundamentally weaken the security of the nation,” Cheney said after Tuesday’s hearing.

During the hearing, Republicans argued the W76-2 makes nuclear war less likely by giving the U.S. a more flexible deterrent to match Russia’s own low-yield arsenal. Cooper argued that it lessens America’s strategic power to replace unmodified Trident II weapons with low-yield weapons in the missile tubes of America’s ballistic missile submarines.

“Hopefully all of us should be focused on the risks faced by a submarine crew that might launch one of these tactical weapons, might waste a missile tube containing one of these weapons when submarines were supposed to be strategic and survivable elements of the [nuclear] triad,” Cooper said.

Cheney argued the Open Skies Treaty allows Russia to collect intelligence against the U.S., while Cooper countered that then-Defense Secretary Jim Mattis supported the treaty and that it enabled the U.S. to surveil the Black Sea after Russia’s attack on Ukrainian naval vessels there last year.

On pit production, Cheney said the country needs greater capacity to sustain its nuclear stockpiles, while Cooper called the expansion to a proposed facility in South Carolina expensive, “pork-barrel spending” and pointed to the existing pit plant at the Los Alamos National Laboratory in New Mexico.

Cheney’s defeated amendment would have also killed the bill’s proposed transparency requirements for the Nuclear Weapons Council, a joint Defense Department and Energy Department group that oversees plans for nuclear weapons programs.

<https://www.defensenews.com/congress/2019/06/04/defense-policy-bill-opens-new-partisan-fight-over-americas-nuclear-arsenal/>

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Defense One (Washington, D.C.)

North Korea’s Nuclear Bomb Is Much Bigger Than Previously Thought

By Patrick Tucker

June 4, 2019

Scientists looking anew at a 2017 North Korean nuclear test discovered that the explosion was likely about two-thirds more powerful than U.S. officials previously thought.

Earlier data put the yield somewhere between 30 and 300 kilotons; the U.S. intelligence community said 140 kilotons. That was already the most powerful device tested by North Korea, topping a 2016 test by about an order of magnitude. But a new look at seismological data suggests that the blast was between 148 and 328 kilotons, and probably around 250 kilotons.

That’s the conclusion from a group of researchers from the University of California, Santa Cruz; the Seismological Observatory of Costa Rica; and elsewhere, as published Monday in the Journal of Geophysical Research: Solid Earth. The team combined sound-wave data recorded during the blast with information about North Korean nuclear tests since 2006 and plugged it all into models

showing how sound would travel through various types of rock at an estimated depth of 430 to 710 meters.

A 250-kiloton weapon would be about 16 times more powerful than the one that leveled Hiroshima. Detonated over Washington, D.C., it would have knocked down virtually every residential structure in the downtown area and inflicted third-degree burns on everyone within a three-mile radius.

Estimating the size of the bombs that North Korea tests underground is no easy matter outside of the country. The regime doesn't release information such as the depth of the testing sites, the density of the surrounding rock and soil, etc. Outsiders are left to look at seismological sound waves of the sort that governments use to measure the size of earthquakes. (Underground nuclear bomb tests produce direct and compressed waveforms, not the wavey ones of natural earthquakes.) Scientists use data from teleseismic stations around the world that measure P, or primary, waves. These are the initial waves that occur in earthquakes when two big tectonic plates slip past each other. The P waves indicate the size of the S, or secondary, waves that knock down buildings.

The 2017 North Korean test produced an earthquake of 6.3 magnitude. But how you look at that data shapes the conclusion that you reach. The new research uses a statistical trick called a "relative waveform equalization procedure," essentially a bit of tuning, like removing static noise from an audio signal, to enable the researchers to better compute "two very closely located explosions recorded at multiple stations," according to the paper.

Steven Gibbons, a geophysicist with the program for Array Seismology and Test-Ban-Treaty Verification at the Norwegian Seismic Array, or NORSAR, who was not affiliated with the study, told the American Geophysical Union, "They've modeled what the reflection would look like for different yields and depths and solved for what the signal would look like if you didn't have to account for this returning wave. The most impressive thing in the paper for me is how similar these waveforms are. This is what gives me confidence that they've done a good job."

<https://www.defenseone.com/technology/2019/06/north-koreas-nuclear-bomb-much-bigger-previously-thought/157469/?oref=d-topstory>

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Los Angeles Times (Los Angeles, Calif.)

Nation's Most Ambitious Project to Clean Up Nuclear Weapons Waste Has Stalled at Hanford

By Ralph Vartabedian

June 4, 2019

The Energy Department's most environmentally important and technically ambitious project to clean up Cold War nuclear weapons waste has stalled, putting at jeopardy an already long-delayed effort to protect the Columbia River in central Washington.

In a terse letter last week, state officials said the environmental project is at risk of violating key federal court orders that established deadlines after past ones were repeatedly missed.

Two multibillion-dollar industrial facilities intended to turn highly radioactive sludge into solid glass at the Hanford nuclear site have been essentially mothballed. Construction was halted in 2012 because of design flaws and Energy Department managers have foundered in finding alternatives, state officials said last week in a terse letter that threatens new litigation.

The department has stored 56 million gallons of radioactive sludge left over from the production of plutonium in 177 leaky underground tanks on a desert plateau a few miles from the Columbia

River, raising concerns that the material has migrated into groundwater and eventually will reach the largest river in the West.

The original idea was to chemically treat the sludge, mix it with sand and then melt the combination in furnaces to create glass that would be stable for centuries, but the plan was harder than expected because the sludge is so chemically and radioactively toxic. The process required the construction of a massive industrial complex.

The issue of tank waste is just one of the difficult problems at the Hanford site. Last year, the Energy Department halted demolition of its shuttered plutonium finishing plant after plutonium dust repeatedly set off evacuation alarms at the work site, drifted miles away to a public road and coated workers' cars. In 2017, an old tunnel at the site that stored radioactive debris collapsed.

Maia Bellon, Washington's Department of Ecology director, said in the letter that federal officials have taken repeated unilateral actions that will make their cleanup unlikely to meet critical deadlines set up in a 2016 consent decree in federal court, which came after the department violated a 2010 legal agreement.

The department has committed to removing and disposing all of the underground tank waste by 2047, though Bellon said the state doesn't think that is possible at current funding levels. The six-page letter was addressed to Anne White, chief of environmental management at the Energy Department. The Times obtained the letter from Hanford Challenge, a watchdog group that has closely monitored the contaminated facility.

"This is clearly setting the table for litigation," said Tom Carpenter, executive director of the group. "The Energy Department is going to miss all of these deadlines."

Carpenter noted that in February, the Energy Department issued a new cost estimate to remediate the entire Hanford site, taking it from \$110 billion to as much as \$660 billion, a cost increase that has staggered Congress and has fueled sentiment to cut short the cleanup goals. "They are walking away from important elements of the cleanup," he said.

A spokeswoman at the Energy Department's site office in nearby Richland said they had not seen the letter. A spokesman for White did not return calls seeking comment. White announced her resignation last week.

The Energy Department's original plan was to chemically separate the sludge into separate streams of low-level and high-level waste, sending them to separate glass-making plants. But internal whistleblowers alleged that much of the design was deeply flawed and construction was largely halted by the Obama administration.

Afterward, the Energy Department came up with an alternative plan to begin vitrifying — turning into glass — low-level waste directly taken from the tanks at a newly designed facility, but it abandoned that plan last year, the letter said. It turned instead to a plan to process the waste with mobile equipment at the tanks that could remove the radioactive cesium in the sludge. The cesium would have to be separately glassified or disposed of some other way.

The cleanup was originally outlined in a 1989 legal deal with state officials and the U.S. Environmental Protection Agency, after the federal government lifted the secrecy that had covered up the vast extent of the contamination at the sprawling facility. Nuclear weapons cleanup across the nation has cost about \$6 billion a year.

Bellon's letter lays out a two-part proposal. First, there would be a new round of negotiations over the next six to nine months. Second, the state wants a low-level treatment system operating by no later than 2023, full production of high-level waste glass by 2036 and renewed commitments to

removing all tank waste. Without a “holistic approach” to the cleanup, the state will not abide by further changes to its legal agreements, it said.

If the Energy Department doesn’t accept the state’s proposal or the negotiation does not result in an acceptable cleanup program, the state “reserves our right” to pursue action in court, the letter said.

<https://www.latimes.com/nation/la-na-hanford-nuclear-cleanup-20190604-story.html>

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US ARMS CONTROL

VOA (Washington, D.C.)

Experts: US-China Trade Tensions Could Impact Pyongyang Sanctions Support

By Cho Eun-jung

June 5, 2019

WASHINGTON — Christy Lee of VOA’s Korean Service contributed to this report.

The escalating trade dispute between the United States and China could distract Beijing from dealing with nuclear North Korea and undermine its efforts to enforce international sanctions, potentially hampering the U.S. attempt to denuclearize the country, experts said.

Even as the Trump administration pursues its “maximum pressure” campaign to push North Korea to denuclearize, Washington has engaged in rounds of talks with China that have turned into a bitter tit-for-tat trade war.

With the aim of making American-made goods competitive in the United States relative to cheaper Chinese imports, the U.S. launched an investigation into Chinese trade policies in 2017. Washington imposed tariffs on more than \$250 billion out of total \$539 billion worth of Chinese goods the United States imported in 2018.

Beijing retaliated by raising tariffs on \$110 billion of a total \$120 billion U.S. goods imported last year.

The latest hike came earlier in May when the Trump administration raised U.S. tariffs on \$200 billion in Chinese imports from 10% to 24%. Trump threatened to add a 24% tariff on the remaining \$325 billion worth of imports from China.

This was followed by Beijing’s retaliatory tariff hike on American goods as high as 25% from 10%, affecting \$60 billion in American imported goods starting June 1.

China has accused the United States of starting what it called “the largest war in economic history” and an “economic terrorism.” On Sunday, China said it will “not back down” in the escalating trade war with the United States.

Tension between Beijing and Washington over a trade deal has caused concern among North Korean watchers wondering if the dispute will affect the U.S. effort to denuclearize North Korea.

China, as North Korea’s largest trading partner, is responsible for approximately 90% of its imports and exports. As such, Beijing could play a pivotal role in denuclearizing the nation on its southeastern border, because according to William Overholt, a senior research fellow and Asia

expert at Harvard's Kennedy School of Government, "China is very determined to eliminate North Korea's nuclear weapons."

The consuming battles in the U.S.-China bilateral trade agreements could distract China from the North Korean nuclear issue, said Scott Snyder, director of the U.S.-Korea policy program at the Council of Foreign Relations.

"The main impact of trade tensions between the U.S. and China is (lowering) the priority of North Korea as an issue on the agenda of U.S.-China relations," said Snyder. "And so, it's going to be harder to get China to cooperate as much as the United States would like because they're focused on other issues in the relationship."

The biggest role China could play in denuclearizing North Korea is enforcing international sanctions issued since 2016. Targeting Pyongyang's key export commodities such as coal and seafood, the sanctions were designed to cut off foreign income that could be used to support its nuclear weapons and missile programs.

Joseph DeTrani, a former U.S. special envoy for nuclear talks with North Korea, emphasized China's role in enforcing sanctions, saying, "Failure to work in concert (with China) in sanctions implementation would weaken our efforts to succeed with North Korea and its nuclear and missile programs."

But a drawn-out trade war could make Beijing do less to enforce the sanctions, according to Ryan Hass, who served as the director for China, Taiwan and Mongolia at the National Security Council from 2013 to 2017.

"The level of rigor that sanctions are enforced (with) depends upon the level of manpower and the level of resources that are devoted to the task," said Hass. "It isn't necessarily the case that China would turn its back on the sanctions, but it may just choose to allocate its resources and its manpower to other priorities."

After all, Beijing is more concerned with achieving its chief objective of stability than it is with sanctions, said Robert Manning, a senior fellow at the Atlantic Council.

"While the sour climate and rising tensions in U.S.-China relations complicates U.S. diplomacy on North Korea, China's cooperation was never a favor to the U.S.," said Manning. "Beijing's interests on the Korean Peninsula toward North Korea (have) been based on a sober assessment of China's desire to see a non-nuclear Korea and stability on the Korean Peninsula."

China, as one of five permanent members of the United Nations Security Council (UNSC), joined the rest of the UNSC members in issuing stronger sanctions on North Korea in response to multiple missile and nuclear tests it conducted in 2016 and 2017.

When Washington and Pyongyang began engaging diplomatically in 2018, culminating in their first historical summit in Singapore in June 2018, Beijing suggested international sanctions on North Korea be eased. Several months after the Singapore summit, a report by the U.S.-China Economic and Security Review Commission came out indicating China has relaxed enforcing sanctions on North Korea.

Diplomatic efforts have been stalled since the breakdown of their second summit in Hanoi in February. At issue were conflicting demands and expectations: Pyongyang wanted all sanctions lifted before undertaking a step-by-step denuclearization process, while Washington wanted full denuclearization before lifting sanctions. Given that, the trade disagreements between Washington and Beijing could push China to truncate its support on sanctions, said Stapleton Roy, former U.S. ambassador to China during the George H.W. Bush and Bill Clinton administrations.

“Under those circumstances, it’s not clear whether China will be as willing as it was before to support very strong sanctions on North Korea,” said Roy.

Bruce Klingner, former CIA deputy division chief for Korea and current senior research fellow at the Heritage Foundation, said Beijing could not threaten outright to refuse to implement sanctions as a trade negotiations tactic since doing so would be defying the U.N. But “Beijing could, however, be less vigilant in implementing and enforcing U.N. sanctions,” said Klingner.

Complicating the matter, Snyder said if Beijing views Washington attempting to prevent China’s economic ascendancy over the U.S. while engaged in the trade war, its interpretation of the U.S. attitude could induce it to curtail “the amount of cooperation that (it could) provide the United States on North Korea.”

<https://www.voanews.com/a/korea-trade-war/4946424.html>

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Japan Times (Tokyo, Japan)

‘Don’t Test Our Patience,’ North Korea Tells U.S. As One-Year Anniversary of Singapore Summit Looms

By Jesse Johnson

June 5, 2019

In the latest in a spate of increasingly threatening warnings by North Korea, the country’s Foreign Ministry has urged the U.S. to “change its current method of calculation” in nuclear negotiations or risk turning last year’s Singapore joint declaration into a “mere blank sheet of paper.”

The statement by an unnamed ministry official carried by the official Korean Central News Agency (KCNA) late Tuesday said the fate of the declaration that emerged from last June’s historic Singapore summit between U.S. President Donald Trump and North Korean leader Kim Jong Un “will not be promising” if the United States “fails to carry out its obligation” and continues its “hostile policy” toward the country.

“It is regrettable to see that the United States has become ever more undisguised during the past year in its scheme to annihilate us by force while deliberately turning its face away from the implementation of the DPRK-U.S. Joint Statement and only insisting on our unilateral surrender of nuclear weapons,” the statement said, using the acronym for the North’s formal name, the Democratic People’s Republic of Korea.

The North said its stance “remains unchanged” and that it will “cherish and implement in good faith the June 12 DPRK-U.S. Joint Statement personally signed by the supreme leaders of the DPRK and the U.S.”

But, it said, whether the statement “will remain effective or turn out to be a mere blank sheet of paper will now be determined by how the U.S. would respond to our fair and reasonable stand.”

“There is a limit to our patience,” it ominously concluded.

The warning was the fifth published by KCNA since April 20 to take a similar tack on stalled nuclear talks with the U.S. Those negotiations have been deadlocked since the second Kim-Trump summit, in Hanoi in February, collapsed without a deal due to major differences over the scope of North Korea’s denuclearization and potential sanctions relief by the U.S.

On May 24, the North warned that the nuclear talks “will never be resumed” unless Washington halts what Pyongyang said were “hostile acts” and demands of “unilateral disarmament,” warning of a “fiercer” response if those demands continued.

The North has sought to heap pressure on the U.S. with tests of what the Pentagon said were short-range ballistic missiles on May 4 and May 9. Those tests ended a more than 500-day pause in such launches that began in late 2017.

Despite such test-firings being in violation of U.N. sanctions, Pyongyang has referred to them as “regular” military drills, and said that halting them would be “tantamount to a demand that the DPRK should give up its self-defensive right.”

Trump, who has repeatedly touted the halt of the missile tests as one of his top foreign policy achievements, has played down the significance of those launches, calling them “very standard.”

In an interview Tuesday, U.S. Secretary of State Mike Pompeo brushed aside the North Korean demands that the Trump administration soften its nuclear negotiating posture.

“I hope we get another opportunity to sit down with them and have a serious conversation,” Pompeo told The Washington Times.

Speaking at the end of a weeklong visit to Europe, Pompeo claimed that Kim had agreed to give up his nuclear arsenal at the Singapore summit.

“They need to do what Chairman Kim said that they would do,” Pompeo said. “That’s been our posture since the beginning. We’re happy to talk about the best way to achieve that. We’re happy to talk about what the right tools and mechanisms are so we can facilitate that.”

That claim has been disputed by experts, who say the vaguely worded pledge that emerged from the Singapore talks, in which the North said it would “work toward complete denuclearization of the Korean Peninsula,” was not a unilateral commitment to relinquish its nuclear weapons.

Mintaro Oba, a former U.S. State Department official who worked on North Korean issues, said the North is using its Foreign Ministry to craft a narrative that Washington, not Pyongyang, is the recalcitrant partner in the nuclear negotiations.

“They are sending a message at a sufficiently high level to mean something but not so high that the regime can’t walk away from it,” Oba said. “It is a way of putting pressure on the United States and publicly defining a narrative where North Korea is acting in good faith and the United States is the obstacle to progress.

“The North Koreans have long been proactive and effective at using public statements to heighten their leverage,” he added. “That Washington is not is a huge detriment to our negotiating strategy.”

<https://www.japantimes.co.jp/news/2019/06/05/asia-pacific/politics-diplomacy-asia-pacific/dont-test-patience-north-korea-tells-u-s-one-year-anniversary-singapore-summit-looks/>

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VOA (Washington, D.C.)

Iran Vows to Keep Missile Program, Rejects US Offer to Negotiate

By VOA News

June 4, 2019

Iran's Supreme Leader says his country will not give up its missile program after the United States said last week it is willing to negotiate with Iran.

Ayatollah Ali Khamenei said in a speech on state television Tuesday "this political trick will not deceive Iranian officials and the Iranian nation."

Khamenei's comments were made on the 30th anniversary of the death of Islamic Republic of Iran founder Ayatollah Ruhollah Khomeini and one week after U.S. President Donald Trump called on Iran to negotiate a new deal. Trump said Iran "has a chance to be a great country with the same leadership," and that "We're looking for no nuclear weapons."

Iran has previously said the U.S. must return to the agreement before any talks begin.

Iran-U.S. tensions have escalated in the past month, one year after the U.S. withdrew from a pact between Iran and global powers to limit Tehran's nuclear program in exchange for lifting international sanctions.

Khamenei said the U.S. sanctions have adversely affected Iranians and have made better economic conditions the government's top priority.

"Resistance has a cost, but the cost of surrendering to the enemy is higher," he said.

U.S. Secretary of State Mike Pompeo said Sunday the U.S. was ready to talk with Iran "with no preconditions," a remark Iran dismissed as "word-play."

Trump has repeatedly criticized the deal, commonly known as the Joint Comprehensive Plan of Action (JCPOA), which is designed to limit Iran's nuclear program.

Trump maintains the agreement is not permanent and fails to cover Iran's ballistic missile program.

The pact was signed in 2015 by the U.S., Iran, China, France, Germany, Russia and Britain.

<https://www.voanews.com/a/iran-vows-to-keep-missile-program-rejects-us-offer-to-negotiate/4945498.html>

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The Hill (Washington, D.C.)

Overnight Defense: Pentagon Intel Chief Believes Russia Cheating on Nuke Treaty ...

By Rebecca Kheel

May 29, 2019

THE TOPLINE: The United States is accusing Russia of "probably" violating another control agreement.

The accusation that Russia may not be following an agreement that bans nuclear tests came from public remarks Wednesday by the top U.S. defense intelligence officer.

"The United States believes that Russia probably is not adhering to its nuclear testing moratorium in a manner consistent with the 'zero-yield' standard," Defense Intelligence Agency Director Lt. Gen. Robert Ashley said in remarks at the Hudson Institute.

"Our understanding of nuclear weapon development leads us to believe Russia's testing activities would help it to improve its nuclear weapons capabilities," he added.

But when pressed by a reporter on the comment, Ashley said only that "we believe they have the capability to do it the way they are set up" without again saying Russia likely is doing the testing.

Background: At issue is the Comprehensive Nuclear Test Ban Treaty (CTBT), a United Nations agreement negotiated in the 1990s to ban nuclear explosions. Not enough countries have ratified the treaty for it to enter into force, but world powers, including the United States and Russia, agreed to adhere to a ban on tests. The zero-yield standard in the agreement means any explosions, even those that produce a low yield, are prohibited.

The U.S. accusation that Moscow could be violating its test ban commitment comes at a critical time for U.S.-Russian arms control.

The Trump administration is in the process of withdrawing from a Cold War-era treaty that banned the United States and Russia from having nuclear and conventional ground-launched ballistic and cruise missiles with certain ranges. U.S. officials dating back to the Obama administration have repeatedly accused Russia of violating that accord, known as the Intermediate-range Nuclear Forces Treaty.

Meanwhile, a separate Obama-era treaty known as New START that caps the number of deployed nuclear warheads the United States and Russia are allowed is up for renewal in 2021. The Trump administration has indicated it wants to expand the scope of the treaty in order to renew it, including folding in new weapons not covered by the deal and possibly including China.

Criticism: Arms control advocates quickly criticized the administration Wednesday, saying Ashley presented no evidence to back up his accusation.

"The most effective way for the United States to enforce compliance with the zero-yield standard is for the Trump administration and the U.S. Senate to support ratification of the treaty and help to bring it into force, which would allow for intrusive, short-notice, on-site inspections to detect and deter any possible cheating," the Arms Control Association said in a statement.

"In the meantime, if the U.S. has credible evidence that Russia is violating its CTBT commitments, it should propose, as allowed for in Articles V and VI of the treaty, mutual confidence building visits to the respective U.S. and Russian test sites by technical experts to address concerns about compliance," the association added.

SHANAHAN BREAKS WITH TRUMP ON NORTH KOREA TESTS: Acting Defense Secretary Patrick Shanahan has garnered a reputation for toeing the company line.

But on Wednesday, he contradicted President Trump's assessment about whether North Korea's recent short-range missile tests violate U.N. Security Council resolutions.

"I -- let me just be clear, the short -- these were short range missiles and those are a violation of the UNSCR. Yes," Shanahan told reporters traveling with him to Asia, according to the Pentagon's transcript.

Context: Trump has said several times over the last few days he is not bothered by the recent tests after national security advisor John Bolton said they violated U.N. Security Council resolutions.

"North Korea fired off some small weapons, which disturbed some of my people, and others, but not me," Trump tweeted Saturday.

"All I know is that there have been no nuclear tests. There have been no ballistic missiles going out. There have been no long-range missiles going out. And I think that someday we'll have a deal," Trump added Monday in Japan, saying he was not "personally" bothered by the tests.

Trump's comments in Japan also broke with Japanese Prime Minister Shinzo Abe, who like Bolton and Shanahan said the test violated Security Council resolutions.

At State: Later in the afternoon Wednesday, the State Department spokeswoman was asked Shanahan's comments at her first on-camera press briefing and whether the department also believes the tests violated U.N. resolutions.

Spokeswoman Morgan Ortagus demurred, referring back to comments she made Tuesday at an off-camera briefing that "the entire North Korean WMD program" is "in conflict" with U.N. resolutions.

DUNFORD ELABORATES ON IRAN THREATS: The top general in the U.S. military on Wednesday said he viewed recent threats from Iran that precipitated U.S. deployments to the region as different because they were "more of a campaign" than previous threats.

"What's not new are threat streams. What was new was a pattern of threat streams that extended from Yemen, so threats emanating from Yemen, threats in the Gulf and threats in Iraq," Chairman of the Joint Chiefs of Staff Gen. Joseph Dunford said in his most detailed public remarks yet on the threats from Iran.

"We also saw in the intelligence that there was a question about both the will and capability of the United States to respond. What I would argue was qualitatively different is we saw something that was more of a campaign than an individual threat," he added.

"And it was the geographic span and the perception that activity would try to be synchronized in time that caused us to look at that threat differently than 40 years, by the way, of malign activity by the Iranians. So malign activity and threats to our forces by the Iranians were not new, but a more widespread, almost campaign-like perspective for the Iranians was what we were dealing with."

Shanahan offers some details: Shanahan also provided a tidbit of detail on the troop deployments the Pentagon announced last week.

The 900 new troops being deployed to counter Iran will be sent to Saudi Arabia and Qatar, he said.

Asked about sharing more information on the intelligence behind the deployments, Shanahan suggested he wants to share more but is trying to protect sources.

"I spent a lot of time trying to balance how much can be shared and how much to protect. In a perfect world more is better, but I really need to protect the sources," he said.

Bolton in UAE: Meanwhile, Bolton told reporters traveling with him in the United Arab Emirates on Wednesday that alleged sabotage of four oil tankers off that country's coast was carried out with "naval mines almost certainly from Iran."

Bolton was in the UAE ahead of a meeting of regional leaders to discuss the tanker attacks, as well as drone strikes on oil pumping stations in Saudi Arabia. Iran-linked Houthi rebels in Yemen have taken credit for the drone strikes.

<https://thehill.com/policy/defense/overnights/446063-overnight-defense-defense-intel-chief-says-russia-probably-cheating>

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COMMENTARY

Jerusalem Post (Jerusalem, Israel)

U.S.-Iran Tensions and the Nuclear Card

By Halmat Palani

June 4, 2019

When Donald Trump assumed the office of the president of the United States in 2017, it was clear to many analysts and individuals in foreign policy-making circles that relations between Iran and the US would sour, especially when President Trump pulled his country out of the Iran nuclear deal last May.

However, recent tensions between the United States and Iran have raised alarms and led many to forecast a growing probability of full-scale war between the two states.

Many in the West view the growing tension as a reaction to the paranoia of a nuclear Iran and proliferation of nuclear weapons in the Middle East. In the past, Ayatollah Khomeini – the founder of the Islamic republic – and Ayatollah Khamenei – its current supreme leader – have expressed their opposition to nuclear weapons as un-Islamic and against humanity.

However, Iran has been guilty of efforts to conceal its nuclear activities and facilities in the past, according to IAEA in the 2000s. If one does not wish to develop nuclear weapons, why conceal such activity?

It is thus not inconceivable to assume that the regime might have covert nuclear projects or plans to enrich uranium to the level that would make the development of a nuclear weapon possible.

As a matter of fact, The New York Times reports Khamenei's threatening to enrich uranium to weapons-grade levels on May 14, 2019, amidst the growing tension and military maneuvering by the United States in the Gulf region.

This raises the question of who is to blame for the recent escalation of tensions and just what is behind it all? Tehran political analyst Prof. Mohammad Marandi argues that Iran has not violated the JCPOA and is, in fact, abiding by international law.

Assuming this is true, it is important to take into account the Iranian regime's extremely poor track record when it comes to abiding by international treaties and norms. What guarantees are there that it will not violate any nuclear deal that it signs if it suits its interests or can ensure its survival?

While the US did sign up for the nuclear deal, it must be noted that the deal negotiated by the Obama administration only restricts Iran's uranium enrichment for a certain time period, which means that this deal is likely to expire and require renegotiation in the near future.

Given that the Iranian regime is willing to do whatever is necessary to ensure its survival, what is to stop it from using the nuclear issue and the development of nuclear weapons to continue its expansionist foreign policy and domestic repression.

The usage of its nuclear program and the threat of possibly developing nuclear weapons has been part of the Islamic regime's central strategy against the United States and its allies for more than a decade now.

While the US is certainly no saint, the Iranian regime's behavior from its inception until the aftermath of the Arab Spring demonstrates the hostile and expansionist nature of this pariah power. In my view, the recent tension is thus more a result of Iran's military activities and posturing regionally than concerns about it developing nuclear weapons or violating the nuclear deal.

The tough rhetoric from the United States in response to reports and intelligence claims that Iran or its proxies are threatening US allies and interests in the Middle East must thus be understood as a defensive maneuver within this context rather than preparation to strike Iran first.

According to Holly Dages, an Iranian-American analyst, "The bomb is the Iranian government's wild card, which it uses to indicate to the United States and the world that it is better to be in business with Tehran than to ostracize it." Thus, while the nuclear question remains an important and pressing issue for the United States and its allies, it is the desire to strip Iran from playing this card that the Trump administration seems to be most concerned about.

The nuclear card works to Iran's advantage in that it gives it the liberty to crackdown on dissenting voices domestically, but it also exports its revolution and influence regionally through its various proxies in neighboring countries with little to no consequences. In other words, Iran is using the nuclear deal to justify and legitimize its regional expansion by funding and commanding its proxies in several countries in the region.

So long as Iran has this card of developing nuclear weapons to play in its quarrel with the West, it will remain a thorn in the side of the US, and the probability of a full-scale war or efforts at regime change remains inevitable.

The author is an English teacher and freelance writer located in Vancouver and is a contributor for Kurdistan24, Rudaw and other Kurdish news organizations.

<https://www.jpost.com/Opinion/US-Iran-tensions-and-the-nuclear-card-591590>

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Center for Strategic & International Studies (Washington, D.C.)

The Iranian Missile Threat

By Anthony H. Cordesman

May 30, 2019

There is no doubt that Iran and North Korea present serious security challenges to the U.S. and its strategic partners, and that their missile forces already present a major threat within their respective regions. It is, however, important to put this challenge in context. Both nations have reason to see the U.S. strategic partners as threats, and reasons that go far beyond any strategic ambitions.

Iran is only half this story, but its missile developments show all too clearly why both countries lack the ability to modernize their air forces, which has made them extremely dependent on missiles for both deterrence and war fighting. They also show that the missile threat goes far beyond the delivery of nuclear weapons, and is already becoming far more lethal and effective at a regional level.

Iran's Perceptions of the Threat

Iran has certainly carried out missile developments that could allow it to deliver nuclear warheads anywhere in the region, hit much of Europe, and develop some form of ICBM. This presents an all too real potential threat if the JCPOA or alternative efforts to halt Iran's nuclear programs should fail.

However, there is another side to Iran's missile programs, and to the perceptions and strategic considerations that drive them – what the British strategist Liddell Basil-Hart called the "other side of the hill." Seen from an Iranian perspective, Iran is responding to proven threats from its neighbors and the U.S., and its inability to properly modernize its military forces since 1980.

Iran provoked the hostage crisis with the U.S. in 1979, but this crisis was a reaction in part to the Anglo-American coup that brought the Shah back to power in 1953. It also led to a broad cutoff in U.S. and European arms transfers that has continued ever since ever since 1980, and left Iran heavily dependent on aircraft, surface-to-air missiles, armor, and ships that were developed in the 1960s and 1970s.

The hostage crisis was also casualty free. The Iran-Iran War was not. Iraq invaded Iran that same year, and Iraq's Arab neighbors, Europe, and the U.S. then backed Iraq once the Iraqi invasion collapsed after Iran's successful creation of a massive mix of conventional and "revolutionary" military forces in the first two years of the eight year-long Iran-Iraq War. Iraq ultimately recovered, however, and the war crippled Iran's economy, and produced estimates of up to 1,000,000 casualties and 500,000 dead – although the number of the casualties on each side is highly questionable.

The Iran-Iraq War also exposed a very real Iraqi nuclear, chemical, and biological threat, and Iraq triggered a missile war against Iran's cities. This led to Iran creating its own missile forces, and the revival of the Iran chemical warfare and nuclear programs that Khomeini had cancelled.

While France and Russia led the arming of Iraq, the U.S. played its own role in shaping Iran's defeats in 1987 and 1988. The reflagging of Kuwaiti tankers led to a U.S.-Iranian "tanker war" in 1987-1988. At the same time, America's European allies provided major transfers of arms to Iraq, including modern combat aircraft, surface-to-air missiles, and some precision munitions.

Iran has exploited Arab divisions and fault lines ever since the end of the Iran-Iraq War, and has sometimes covertly attacked U.S. forces and targets. The aftermath of the Iran-Iraq War saw

periods where the U.S. and Iran seemed to be easing their tensions, along with periods of improvements in Gulf Arab and Iranian relations. However, it also saw the creation of permanent U.S. bases in the Gulf, and the steady improvement of every aspect of Israeli as well as Arab forces.

The first Gulf War to liberate Kuwait in 1990-1991 then demonstrated the rising levels of U.S. and Arab military capabilities and triggered a further major build-up of Southern Gulf Arab forces that has continued ever since. The U.S. ended low-level cooperation with Iran over the Afghan conflict after 2001 because of the "axis of evil" policy. The U.S.-led invasion of Iraq in 2003 then placed major U.S. forces in Iraq on Iran's border. While most of these forces withdrew in 2011, the U.S. then returned to face the rise of ISIS.

While the U.S., its Arab partners and Israel all have good reason to see Iran as a threat and a cause of regional instability, Iran's leaders and senior military feel they have equal cause to see all three as a major threat. The ongoing struggles for control and influence in Syria, Iraq, Lebanon, Yemen, and the Gaza are not the result of some abstract Iranian interest in exporting a revolution. From an Iranian perspective, they are a natural reaction to an all too real threat.

Iran's Inferiority in Arms Imports

It is also a threat where Iran's missile programs are part of a focus on asymmetric warfare where Iran has had no other options. Like its Arab neighbors, Iranian military modernization is critically dependent on arms imports. So far, Iran has not been able to raise its military production capabilities to the point of producing most forms of advanced major weapons, although it has done well in producing missiles, munitions, and smaller weapons systems. Iran has also only had sporadic access to Russian arms and no recent access to advanced new combat aircraft, tanks, major combat ships other than three submarines.

The totals for the Arab side show that Iran is anything but the hegemon of the Gulf. If one looks only at the Arab GCC states – and ignores Israel and Iraq – the GCC states have had continuing access to the most modern arms available since at least 1990, and have taken full advantage of the fact.

From 1980 to the present, Iran has faced massive new U.S. and European arms transfers to the Southern Arab Gulf states. If one looks at the volumes of new arms import orders reported by the Congressional Research Service using declassified U.S. estimates since the end of the first Gulf War, the Southern Arab Gulf states alone had had a vast lead over Iran in total imports from all sources.

The latest such CRS numbers cover 2008-2015. According to this report, Iran ordered only ordered \$900 million worth in 2008-2015. In contrast, Saudi Arabia ordered \$93,500 million worth during 2008-2015. The UAE ordered \$25,700 million, Bahrain ordered \$900 million, Kuwait ordered \$8,000 million, Oman ordered \$10,500, and Qatar ordered \$23,900. The GCC total for these six states – which ignores the cost Egypt, Iraq, Israel, and Jordan and the modernization of U.S. power projection forces – is \$162.5 billion vs. \$900 million for Iran: 181 times more than Iran. And this ignores the steady improvement of U.S. power projection forces, new missile defense ships and stealth fighters like the F-35.

The Air Balance Overwhelmingly Favors the Other Side

This gross imbalance in access to arms imports has been a key reason for Iran's dependence on missiles. From 1980 to today – a period of nearly 40 years – Iran has received only very limited transfers of modern combat aircraft. Iran's most competitive fighters are dated export versions of the MiG-29 and Su-24. Iran has only begun to acquire anything approaching modern surface-to-air and limited missile defenses with the Russian delivery of the first elements of the S-400 system in 2018. The Southern Arab Gulf states received massive transfers of modern aircraft and precision strike munitions and built up major surface-to-air and missile defenses.

Iran currently has no aircraft that can compete with U.S. power projection assets or the first line assets of America's European strategic partners. According to the 2019 edition of the IISS Military Balance, the relative fixed wing combat aircraft strength of key regional air forces most likely to engage Iran in late 2018 was:

- Iran: 336 combat Aircraft: No fully modern, 94 semi-modern. FTR 184+: 20 F-5B Freedom Fighter; 55+ F-5E/F Tiger II. 24 F-7M Airguard; 43 F-14 Tomcat; 36 MiG-29A/U/UB Fulcrum; up to 6 Azarakhsh (reported) FGA 89: 64 F-4D/E Phantom II; 10 Mirage F-1E; up to 6 Saegheh (reported); up to 7 Su-22M4 Fitter K; 3+ Su-22UM-3K Fitter G. ATK 39: 29 Su-24MK Fencer D; 7 Su-25K Frogfoot (status unknown); 3 Su-25UBK Frogfoot (status unknown), ISR: 6+ RF-4E Phantom II*
- Bahrain: 28 combat Aircraft: 20 fully modern. 8 F-5E Tiger II; 4 F-5F Tiger II, FGA 20: 16 F-16C Block 40 Fighting Falcon; 4 F-16D Block40 Fighting Falcon
- Iraq: 65 combat capable. 21 fully modern, 19 semi-modern. FGA 21: 18 F-16C Fighting Falcon; 3 F-16D Fighting Falcon; ATK 30: 10 L-159A; 1 L-159T1; ε19 Su-25/Su-25K/Su-25UBK Frogfoot ISR 10: 2 Cessna AC-208B Combat Caravan*; 2 SB7L-360 Seeker; 6 Beech 350ER King Air.
- Israel: 352 combat capable. 322 fully modern. FTR 58: 16 F-15A Eagle; 6 F-15B Eagle; 17 F-15C Eagle; 19 F-15D Eagle. FGA 264: 25 F-15I Ra'am; 78 F-16C Fighting Falcon; 49 F-16D Fighting Falcon; 98 F-16I Sufa; 14 F-35I Adir ISR 6 RC-12D Guardrail ELINT 4: 1 EC-707; 3 Gulfstream G550 Shavit AEW 4: 2 B-707 Phalcon; 2 Gulfstream G550 Eitam (1 more on order)
- Kuwait: 66 combat capable, 39 fully modern. FGA 39: 31 F/A-18C Hornet; 8 F/A-18D Hornet. TRG 11 Hawk Mk64*; 16 EMB-312 Tucano*
- Oman: 63 combat capable, 35 fully modern, FGA 35: 17 F-16C Block 50 Fighting Falcon; 6 F-16D Block 50 Fighting Falcon; 12 Typhoon TRG 4 Hawk Mk103*; 8 Hawk Mk166; 12 Hawk Mk203*; 12 PC-9*
- Qatar: 18 combat capable, 12 Fully modern. FGA 12: 9 Mirage 2000ED; 3 Mirage 2000D. TRG 6 Alpha Jet*.,
- Saudi Arabia: 407 combat capable, 266 fully modern, 79 semi-modern. FTR 81: 56 F-15C Eagle; 25 F-15D Eagle. FGA 185+: up to 67 F-15S Eagle (being upgraded to F-15SA configuration); 47+ F-15SA Eagle; 71 Typhoon. ATK 67 Tornado IDS. ISR 14+: 12 Tornado GR1A*; 2+ Beech 350ER King Air. AEW&C 7: 5 E-3A Sentry; 2 Saab 2000 Erieye. ELINT 2: 1 RE-3A; 1 RE-3B. TRG: 24 Hawk Mk65* (incl aerobatic team); 16 Hawk Mk65A*; 22 Hawk Mk165.
- UAE: 156 combat capable, 78 fully modern, 66 semi-modern. FGA 137: 54 F-16E Block 60 Fighting Falcon (Desert Eagle); 24 F-16F Block 60 Fighting Falcon (13 to remain in US for trg); 15 Mirage 2000-9DAD; 44 Mirage 2000-9EAD. ISR 7 Mirage 2000 RAD*. SIGINT 1 Global 6000 AEW&C 2 Saab 340 Erieye. TRG 12 Hawk Mk102*;

These totals do not recognize massive orders of new fighters by Israel and the Arab Gulf states that are now pending while Iran as yet has no backlog of such orders. However, if one compares the total of first line fighters on each side, Iran has none, the Arab Gulf states (less Iraq) have 450, and Israel has 322. The U.S. is actively deploying the F-25, has the F-22, and is building up its inventory of AEGIS missile defense ships.

Iran (and North Korea's) Dependence on Missiles

As is the case with North Korea (and was the case with Iraq during the first Gulf War) missiles offer Iran the ability to strike deep into Arab territory in spite of its gross inferiority in airpower power and precision air strike capability. They have limits, but so do aircraft, and many of the key limits to today's missiles are now vanishing with improvements in missile accuracy and lethality.

Missile defenses are also so far limited. Although the Arab states do have some missile defense capability, it is nowhere near the capability of their air defense forces to deal with Iran's limited air forces. Missile strikes have also so far had a major initial impact on populations even if they were only capable of limited point-target lethality in largely random strikes on area targets like cities and population centers.

The U.S. (and Arab and Israeli) focus on the potential nuclear threat from a future nuclear-armed ICBM is valid, but it is only part of the story. It also ignores the fact that any actual Iranian use of nuclear weapons – like a strike by North Korea on outside targets – would probably trigger the destruction of Iran. As Henry Kissinger once remarked in a different context, the threat of committing suicide is a poor deterrent to being murdered.

The U.S. (and Arab and Israeli) focus on the potential nuclear threat from Iran also ignores the fact that even moderately advanced powers with weak airpower already can use missiles as a key part of their mix of deterrence and defense. Iran and North Korea's current ballistic missile systems may lack the mix of accuracy and lethality to hit point targets with anything approaching predictable effectiveness, but they still have deterrent value, political impact, and reinforce the potential threat posed by the risk they may eventually be armed with weapons of mass destruction.

Short and medium range missiles also are relatively easy to disperse, and are still much harder to target and destroy than aircraft tied to an airbase once the missiles have been sheltered, hidden, or are actively mobile. They pose an enduring threat while – as the first Gulf War and invasion of Iraq demonstrated – aircraft can be relatively easy to suppress or destroy once a given side has established air superiority.

The IISS Estimate

At the same time, it is important to note that the open source data on Iran's missile forces are extremely unreliable and contradictory. This not only affects missile numbers, but leads to largely speculative data on nominal performance that ignores the lack of reliable test data, "guesstimates" performance, focuses on the theoretical accuracy of the guidance platform rather than actual missile performance, ignores the lack of any data on the actual warhead, and fails to address major aspects of Iran exercise performance, doctrine, targeting.

Some estimates of Iran's actual ballistic missile forces from highly respected sources remain relatively small and only cover the number of launchers – not the numbers of missiles. The 2019 edition of the IISS Military Balance provides the following estimate for Iran's major missiles – which are operated by its Islamic Revolutionary Guard Corps Aerospace Force – although these figures do not include some short-range Army systems and long range artillery rockets, coastal defense systems, and efforts to develop ship and submarine-launched versions of the Fateh SRBM:

Missile Forces

- 1 bde with Shahab-1/-2; Qiam-1?
- 1 bn with Shahab-3?

Missile Launchers

- MRBM • Conventional up to 50: Shahab-3 (mobile & silo); some Ghadr-1 (in test); some Emad-1 (in test); some Sajjil-2 (in devt); some Khorramshahr (in devt)

- SRBM • Conventional up to 100: some Fateh 110; Some Khalij Fars (Fateh 110 mod ASBM); some Shahab- 1/-2; some Qiam-1; some Zelzal

UAVs – Unmanned Aerial Vehicles

- CISR • Medium Shahed 129

An IHS Jane's Estimate

An April 2019 estimate by IHS Jane's, another widely respected source, is very different and seems to track better with official background briefings. It states that Iran has a major production facility in Parchin. It warns that many aspects of range and reliability are unclear, but that Iran has exported missiles to Iraq, Syria, and Yemen and states that Iran is establishing a missile production facility in Syria. It also notes that Iran has supplied Shahab (dubbed 'Burkan' by Houthi forces), Qiam-1 (dubbed 'Burkan-2' and 'Burkan-2H'), and Soumar cruise missiles to the Houthi in Yemen.

The IHS Jane's brief states that Iran's Islamic Revolutionary Guards Corps Air and Space Force (IRGCASF) has the following five brigades:

- 15th Ghaem Missile Brigade, with short-range missiles such as the Fajr
- 5th Ra'ad Missile Brigade equipped with Shahab-3/-4, based in the Karaj area, northwest of Tehran
- 7th Al-Hadid Missile Brigade equipped with Shahab-1 and -2 (Scuds B and C) missiles, based in the Karaj area; and controls the Imam Ali Missile Site in Khorramabad, western Iran. IHS Jane's notes that North Korea supplied Iran with 6-12 Scud-B TELs and up to 200 missiles between 1987 and 1992, and that the US-based Federation for American Scientists estimated in 2008 that Iran possessed between 300 and 400 Shahab-1s and Shahab-2s armed with conventional warheads and distributed among 3-4 battalions.
- 19th Zulfiqar Missile Brigade, equipped with Nazeat and Zelzal short-range missiles, based in the Karaj area
- 23rd Towhid Missile Brigade, based at Khorramabad.

IHS Janes estimates that Iran's short-range missile holdings are separate, and include the Fateh, Shahab-1 and Shahab-2, and enhanced and modified variants of the original Scud-B and Scud-C systems. It also describes five different variants of the Fateh – including anti-ship, anti-radar, and 750 -kilometer range systems. It also reports that China sold up CCS-8 (M-7/Project 8610) short-range, road-mobile, solid-propellant, single-warhead ballistic missiles and 30 TELs based on modifications of the SA-2 to Iran in 1989. It is not clear they are still fully operational, but they have a 190 kg warhead, a 150 km range, and very poor accuracy. Iran calls them the Tondar 69. Some 90 missiles were delivered to Iran in 1992, and a further 110 may have been delivered later.

When it comes to Iran's longer-range missiles, the report indicates that the Nazeat 10 began to be tested in 2014, and is called an MRBM – although its range is unclear. It is felt to be more accurate than the Nazeat – although such reporting seems to focus on the guidance platform rather than missile tests.

IHS Janes indicates that its liquid-fueled Qiam missiles have been mass produced since 2011, and has a range of up to 700 km with a 650 kg payload. It also cites three different versions of the liquid-fueled Shahab missile – which is derived from the North Korean No Dong, and exceeds the 1,000-kilometer range limit set by the UN. These versions include the Shahab-3A (Ghadr 101) with a range of 1,500-1,800 km, the Ghadr-1 with a range of 1,800 km, and Shahab-3B (Ghadr 110) with a range of 2,000-2,500 km.

The Shahab is being replaced or supplemented by the more accurate Qadr F with a range of 1,600 km, the Qadr H with a range of 2,000 km and improved multiple re-entry vehicle, and the Qadr S with a range of 2,000 km with cluster munitions warhead.

The Khorramshar is said to still be in the test phase, and similar to the North Korean Hwasong-10 (KN-07) liquid-fueled missile with a maximum range of 2,000 km. The Seiji-2 is estimated to be another longer-range solid fueled system with a range of 2,200 km with a 750 kg warhead. A third system called the Emad may be a modification of the Qadr and to have started delivery in 2016. Finally, Iran seems to be developing an ICBM called the Simorgh (Safir-2) out of its Simorgh satellite launch system.

Peering Through the Fog

It should be stressed here that open-source estimates are heavily dependent on trying to interpret Iranian data that are deliberately designed to confuse and often to exaggerate Iran capabilities. The data focuses on the maximum range based on a nominal payload which is often never fully specified or defined, and not actual payload or test data. There are no reliable data on actual performance, there almost always seem to be too few actual tests to properly establish a derived aim point level of accuracy, and it is generally assumed that the warhead is either unitary high explosives or cluster munitions without terminal guidance or missile defense countermeasures.

Just as Iran often deliberately exaggerates the size and nature of its military exercises, it exaggerates its missile capabilities. It has issued faked videos of salvo launches, and images of its ability to use missiles to target airfields. It also plays name games with its missiles to exaggerate or confuse the nature of its development programs. This is all too "fair" in hybrid warfare, but it also means that any Iranian or outside open source reports on Iranian missile performance need to be approached with extreme caution.

That said, Iran has conducted enough credible tests, and transferred enough missiles and missile technology to third parties like the Houthi in Yemen, to show its missile capabilities are still very real. It is building on well-established Russian, Chinese, and North Korean missile technology, and a purchasing and espionage network it has steadily refined since the Iran-Iraq War. US, Israeli, and other experts do report major improvement in Iranian missile design and manufacturing capability, and Iranian shorter and medium range systems do seem to be relatively rugged in a the few known field tests where the data seem moderately convincing.

Missiles and Current Warfighting Capability

One needs to be equally cautious about any effort to go from these uncertainties to Iran's ability to use its missiles to deter, influence/shape events, and actually fight. At least for the next few years, Iran does not possess the deterrent capabilities of a nuclear-armed missile force. These capabilities, however, are extremely scenario-dependent since any actual use of such weapons by Iran would almost certainly lead to nuclear retaliation or to some forced outcome that destroyed the current regime and led to Iran's occupation. As noted earlier, the threat is one thing, actual use against U.S. and allied forces in the Gulf would border on regime suicide.

Iran might make demonstrative or terror-related use of other forms of weapons of mass destruction. Iran is a self-acknowledged chemical weapons power under the terms of the Chemical Weapons Convention, and has the technical based to create advanced biological weapons. Ballistic missiles are scarcely ideal ways to deliver such weapons, and the political and escalatory consequences might well be far worse than any advantages Iran can gain.

Slow fliers like cruise missile offer far more effective forms of line source delivery of CBW agents and might well be harder to detect or clearly assign to Iran. At the same time, the history of military escalation is not particularly rational. Moreover, even firing a missile with a non-functioning

chemical warhead could have a major terror or deterrent effect. This kind of option seems more likely to be used by a state like North Korea, but cannot be totally dismissed.

When it comes to Iran's use of missiles with conventional high explosive warheads, it is important to note that experts like Uzi Rubin believe Iran is already in the process of deploying missiles accurate enough to hit critical military and civil point targets – options that will be discussed in the following section.

Most current Iranian missiles, however, lack such accuracy and lethality. Even large salvos would probably do little or no damage to point targets and hit well outside of the blast range of the missile warhead. In broad terms, the real world accuracy/reliability of any missile without fully functional GPS guidance or terminal homing is so limited that only luck – the equivalent of a "magic bullet" – will allow it to hit a critical point in a major industrial facility, air or other military base, port, desalination plant or other area targets.

Iran also faces Arab Gulf and Israeli air forces with precision strike air launched missiles with ranges over 100 kilometers like the Storm Shadow, and U.S. stealth aircraft and cruise missiles. As long as Iran is reliant on older ballistic missile technology without precision strike capability, it would be far more vulnerable to air-delivered precision counterstrikes than its potential target.

As a result, Iran might reserve its missiles as a retaliatory deterrent, keeping them as an active threat that it could use to deter outside first use of precision strikes or limit their scope. If it did use missiles offensively, it would probably seek to use them in asymmetric or hybrid attacks that would limit counterattacks and counter-escalation.

Iran has several clear options. Iran could seek to use a third party as it has the Houthis – transfers which might include the Assad regime or Hezbollah – to limit the risk or counter escalation. It might also conduct limited launches against key Gulf petroleum facilities, tanker loading ports, or other critical targets where sporadic launches might avoid triggering a general response but be enough to force a shutdown of such a facility or halt tanker and shipping movements and loadings. Firing at an airport or center of government might be another case. Such efforts to decouple any use of a ballistic missile from retaliation would be uncertain at best, but demonstrative escalation could also occur against a non-target.

Large-scale retaliation is also a more credible option. Launching as many retaliatory missile strikes as possible in the face of a major threat to the regime, or volleys against cities and key bases in the face of more limited outside attacks, might not achieve high levels of critical lethality, but it seems unlikely that Iran's regime would accept a passive defeat or fail to try to use more focused retaliation to the extent it could.

The Coming Precision Strike Era

The nature of the Iranian missile threat is already changing, however, in ways that will radically increase the value of conventional Iranian missile strikes. Iran may be claiming levels of precise accuracy, and countermeasure capabilities against missile defenses that it does not yet have. However, it seems likely that Iran will develop a far more effective mix of forces over the next few years. Here, the U.S., Israel, and Arab strategic partners must consider the following key force changes:

Precision strike conventionally armed ballistic missiles. Iran has already claimed to have made extensive tests of ballistic missiles like the "Fateh 313" with much more accurate guidance and a range of 500 km. Some sources also claim that a version of the Fateh has a satellite navigation system-assisted inertial navigation system guidance package, and an imaging infrared sensor which could give it a capability to hit moving targets, including ships. While sources vary, Iran seems to have claimed that its Emad had a CEP of only 500 meters after tests in October 2015 – although this

claim may refer only to the accuracy guidance platform and not the entire system. Work by Uzi Rubin also suggests that Iran may have a much broader family of precision strike images.

It currently is unclear how much real-world progress Iran has made, what types of improved guidance it is seeking to deploy, and what kind of ballistic missile force it is seeking to evolve. What is clear is that even a relatively large conventional warhead requires accuracy in meters to tens of meters to destroy many critical targets, and that accuracy/reliability and terminal guidance are the critical aspects of conventional missile lethality because of the inverse cube limits to improving blast lethality. The U.S. has also demonstrated how damaging even relatively small UCAV warheads and laser-guided bomb warheads can be.

The Gulf is filled with high value components and targets where precision-strike systems – whether a bomb, cruise missile, or ballistic missile – could do critical damage with months to years of long-lead replacement and repair time. These include key C4I/battle management, IS&R, and sensor/radar links. They also include a wide variety of key petroleum, port, water and desalination, electric power, and other civilian facilities, and a major precision strike could potentially do the same level of damage in days and hours that took the U.S. weeks in the 1991 attacks on Iraq.

Countermeasure equipped ballistic missiles. Iran has already claimed to have some countermeasure capability and its booster could deliver relatively large warheads with such measures at long ranges.

Firing older missile types as cover and to saturate defenses. Iran could retain large numbers of older missiles in static disperse launch sites and try to saturate missile defenses with volleys of older systems while it launches more modern and accurate systems.

Mixes of cruise missiles and UCAVs. Iran already is developing cruise missiles and unmanned combat aerial vehicles including small drones. Its level of progress is unclear, but it has recovered part of one U.S. stealth UAV, and seems to have modified Russian Raduga Kh-55 cruise missiles to create a ground-based system called the Soumar with claims it could be modified to have a range as long as 3,000 km. It also has developed anti-ship missiles like the Zafar, Nasr, Noor, and Ghader (Qader) that have related technologies. This creates the possibility of developing mixes of precision guided ballistic and cruise missiles, and UCAVs that could greatly complicate any missile defense effort as well as make it easier to deny attribution to future precision strikes with smaller missiles and transfer systems to third parties and non-state actors.

Precision targeting inventories. Iran already has some satellite and UAV targeting capability. Iran can almost certainly already carry out its missile launches with military grade GPS coordinates. Given the uncertain level of Gulf Arab security and dependence on foreign workers, it can use field agents and cellphone size devices to get precise GPS coordinates and cell phone images of the exact location of critical facilities and major components for target purposes – possibly using small drones as well. Many targeting problems that existed in the past could be eliminated.

Added missile mobility and shelters. Improved boosters and reliability can make it far easier to disperse and support Iran's ballistic missiles. Creating a "shell game" set of disperse shelters and improved mobile missile launchers is a relatively cheap option.

Russian or Chinese sales of advanced combat aircraft. Russia or China may see Iran as a more credible strategic option as its missile forces improve and/or be willing to sell more advanced fighters and air systems for other reasons as part of their strategic competition with the U.S.

Other hybrid or asymmetric attack modes. Iran's improving strike capabilities will interact with its ability to threaten shipping in the Gulf and through the Strait of Hormuz, and support other states and non-state actors by creating a far more serious threat of retaliation if Arab states, Israel, or the U.S. escalate or threaten Iran for such actions.

Deployment of the S400 and S500 Russian air and missile defense systems. Iran already is deploying its first major improvement in surface-to-air and missile defense systems in decades – with the exception of small numbers of a Russian very short-range defense system called the 299K331 Tor-M1 (SA-15 Gauntlet). It may acquire the S500 with far more advanced missile defense capabilities as well. Over time, this could sharply degrade the present advantage the U.S, Israel, and Arab states have in air combat and precision strike capability.

There is no current way to predict how many of these options Iran will execute or how well it will execute them. It seems highly unlikely, however, that Iran will fail to take advantage of many – if not all – of these options. It is also clear that powers like North Korea will have similar opportunities. For all the present concern with nuclear-armed missiles – and weapons of mass destructiveness – it may well be conventional armed precision missiles that become weapons of mass effectiveness that come to dominate both the Iranian and North Korean threat.

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Defense One (Washington, D.C.)

Time to Abandon Denuclearization?

By Eric M. Brewer

June 2, 2019

The U.S. objective of a nuclear weapons free North Korea has thus far failed. Yet denuclearization—the elimination of North Korea’s nuclear weapons, the means to produce and deliver them, and its other WMD—has remained a sticky concept among successive U.S. administrations. To its credit, the policy has resulted in a strong international consensus against the North’s nuclear and missile activities and, relatedly, a robust sanctions regime. But using those accomplishments as the key measures of success confuses means with ends. Since its first nuclear test over a decade ago, North Korea’s arsenal has expanded qualitatively and quantitatively. It now possesses ICBMs, thermonuclear weapons, and a growing nuclear and missile stockpile. Thus, denuclearization as a policy has a lot to answer for.

But what are the alternatives? Are they any better? And are there risks of moving away from denuclearization as the goal?

On the one hand, deterrence and assurance are still feasible and desirable. Decoupling fears raised by North Korea’s ability to deliver a nuclear weapon to the United States and Pyongyang’s possible threats to use nuclear weapons for coercion and blackmail are valid concerns. The U.S. extended deterrent and its alliances with Seoul and Tokyo provide adequate foundations to adapt responses to address these potential new vulnerabilities. But what policy goal should the United States pursue while it works to prevent nuclear and conventional war on the peninsula, if not denuclearization?

The North’s expanding capabilities, the perception of heightened risk of (nuclear) war between the United States and North Korea in 2017, and the leader-led diplomacy between the United States, South Korea, and North Korea have led to renewed calls for approaches that shift the U.S. policy focus away from denuclearization. These other objectives include measures intended to foster conditions for greater stability and reduced risk of nuclear use, working toward a smaller deal that

caps, rather than eliminates, the North Korean nuclear threat, and doubling down on bold, transformative diplomacy.

In the past, some such proposals have been summarily rejected by U.S. policymakers, in large part because of fears that they would signal “acceptance” of North Korea’s nuclear threat, and that a series of calamities would follow. Former National Security Adviser H.R. McMaster echoed some of these in a recent interview. It is true that alternatives must grapple with this challenge, and that such a policy shift comes with risks. But it is worth examining what these risks might be, their severity, and whether they can be mitigated.

There are three common objections that focus on the nuclear nonproliferation consequences of “acceptance.”

1. Abandoning denuclearization would set a bad precedent and encourage others to adopt the North Korean “model” toward the bomb. According to this argument, if the United States drops its insistence on North Korea’s disarmament it will prove to other countries that they can wait out U.S. pressure. Washington—and by extension, the international community—will eventually give up and accept their nuclear status.

Of course, there are already other cases—India and Pakistan, for example—that arguably provide better examples to follow. But neither of these seemed to stimulate significant increases in proliferation motives among other countries. Moreover, the North Korea “model” is attractive to few, if any, nuclear aspirants. Few regimes would be willing to endure the type of economic deprivation and diplomatic isolation that North Korea has lived under for decades. Not even Iran sees North Korea as a viable path.

This argument also overweighs the degree to which countries debating their nuclear options take their cues from predecessors. Although a leader or government might draw inspiration from a state that successfully got the bomb, or use inconsistencies in U.S. policies as a talking point to defend their actions, this is not enough to guide policy or strategy (and a leader predisposed to wanting nuclear weapons will likely find the inspiration they desire anyway). More often, governments see their needs and risks as specific to their own strategic situation and circumstances. There are certainly reasons why Iran, Syria, or others might seek nuclear weapons, but “because North Korea got away with it,” is likely lower on the list.

2. Accepting North Korea’s arsenal and its expansion makes it more likely Kim will sell nuclear weapons or materials. Some fear that unless North Korea’s weapons are eliminated, there will always be a risk that its leadership will sell them abroad. A related argument holds that as North Korea’s stockpile increases it could be more willing to part with spare nuclear material, especially if it were in dire economic straits. There is good reason to worry: North Korea was building a nuclear reactor in the Syrian desert until an Israeli strike destroyed it in 2007, the North apparently provided uranium hexafluoride to Libya in the early 2000s, and it has reportedly sold a variety of missile technologies to multiple countries, including Iran.

But there is not a direct and linear relationship between more nuclear weapons and willingness to sell them. More nuclear weapons would not alone change Kim’s risk calculus. That calculus is more about the chances he would be caught, and the penalties he would incur. On the first element of that decision (detection), the above examples suggest there is a realistic probability that the international community will pick up on these transfers eventually (whether that remains “good enough” for U.S. policymakers is another question). On the second element of that decision (penalties), it is hard to make the case that Kim believes he would suffer serious consequences. There have so far been no discernible costs imposed on the Kim regime that would signal that those brazen proliferation attempts are markedly worse than other provocations.

The good news, again, is that few countries would seek to partner with North Korea on nuclear weapons. If presumably they aren't already economically or diplomatically isolated—or in a strategically desperate state—they have far more to lose in that endeavor than Pyongyang. The destruction and exposure of the reactor in Syria also probably does not instill much confidence in would-be recipients that they could get away with it.

Thus, the challenge is real, but bounded. The United States must continue to monitor for such transfers and consider how to make clearer the seriousness with which it would treat any nuclear or missile cooperation with North Korea. But Washington should not let this concern artificially constrain its consideration of alternative North Korea policy options.

3. Abandoning denuclearization as the goal would be unacceptable to our allies and increase the risk that South Korea and Japan would go nuclear. According to this argument, the dramatic reversal of decades of U.S. North Korea policy—the basic goal of which is strongly supported by Washington's allies in the region—would up the pressure on South Korea and Japan to develop their own nuclear weapons. By cementing North Korea's nuclear status, allies would feel the United States has abandoned them and a shared strategic vision for regional security. Combined with the reality that the North Korean nuclear threat would now only grow, this would compel South Korea and Japan to develop their own independent nuclear deterrents.

But caution here is warranted. For starters, the region has already ticked through the “milestones” that were supposed to cause Japan and South Korea to go nuclear. These included North Korea's acquisition of nuclear weapons, its testing of them, and its demonstration of an ICBM capability. Yet both Tokyo and Seoul remain non-nuclear. This suggests that the United States and its allies are better at adapting to changes in the security environment than they—and observers—often give themselves credit for. It also suggests that, to some degree, the North Korean nuclear threat is already baked into their threat perceptions.

Presumably, there would also be more to a new policy than just “not denuclearization.” Equally if not more important to shaping the reactions by South Korea and Japan would be how the United States arrives at and executes any policy shift. Is it sudden? Or are allies consulted along the way? Is it the result of a deliberate choice and replaced by an alternative policy deemed more necessary and likely to succeed? Or is it a de facto position reached over time? Perhaps the result of a series of attempts to secure smaller, interim deals with a mistaken assumption that they would amount to the larger goal of denuclearization? What, if any steps, does the United States take to bolster deterrence of North Korea and assurance of its allies along with such a policy? Is the goal of denuclearization eliminated from the lexicon entirely, or simply punted further afield in place of other more near-term objectives? The answers to these questions matter greatly for shaping a new policy less centered on denuclearization and managing associated risks of proliferation.

The arguments here are not an endorsement of abandoning denuclearization, nor do they advocate for any particular alternative. There are also additional objections beyond those mentioned that need consideration. Moreover, the risks of moving away from denuclearization are only one metric. Whether other policies are desirable and obtainable, and whether trends suggest that denuclearization might in fact be more likely in the future, matter as well.

But the analysis above demonstrates that an unwavering faith in the gospel of denuclearization is not supported by an objective evaluation of its track record, and that some of the fears of moving toward a new policy are overblown. Moving forward, a careful examination of the tradeoffs of different policy frameworks is needed (e.g. if the United States wants to transform the relationship with North Korea, what limits must it be willing to accept on its deterrence posture?), and consideration given to whether and how to sequence these frameworks.

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<https://www.defenseone.com/ideas/2019/06/time-abandon-denuclearization/157366/?oref=skybox>

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ABOUT THE USAF CSDS

The USAF Counterproliferation Center (CPC) 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's Director for Nuclear and Counterproliferation (then AF/XON) and Air War College commandant established the initial personnel 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.

In 2008, the Secretary of Defense's Task Force on Nuclear Weapons Management 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." This led to the addition of three teaching positions to the CPC in 2011 to enhance nuclear PME efforts. At the same time, 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 professional continuing education (PCE) through the careers of those Air Force personnel working in or supporting the nuclear enterprise. This mission was transferred to the CPC in 2012, broadening its mandate to providing education and research on not just countering WMD but also nuclear operations issues. In April 2016, the nuclear PCE courses were transferred from the Air War College to the U.S. Air Force Institute for Technology.

In February 2014, the Center's name was changed to the Center for Unconventional Weapons Studies (CUWS) 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. In May 2018, the name changed again to the Center for Strategic Deterrence Studies (CSDS) in recognition of senior Air Force interest in focusing on this vital national security topic.

The Center'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. The Latin inscription "Armis Bella Venenis Geri" stands for "weapons of war involving poisons."

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