Feature Report

“*The Potential Costs of Expanding U.S. Strategic Nuclear Forces If the New START Treaty Expires*”. Published by Congressional Budget Office; August 25, 2020

https://www.cbo.gov/publication/56475

The New Strategic Arms Reduction Treaty (New START) between the United States and Russia will expire in February 2021 unless both parties agree to an extension, which could last for up to five years. That treaty places limits on the number of deployed strategic nuclear warheads (1,550) and delivery systems (800 missile launchers and bombers, 700 of which may be deployed at any given time) that each country may field.

How and when the United States or Russia would respond to the expiration of New START is unclear. To help policymakers understand the budgetary implications of one potential course of action the United States could take, the Congressional Budget Office was asked to examine the potential costs that the Department of Defense (DoD) might incur if the United States chose to increase its strategic nuclear forces to levels that are roughly consistent with the limits under three earlier arms control treaties.
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NUCLEAR WEAPONS AND DETERRENCE

Breaking Defense (Washington, D.C.)

**New START’s Demise Could Cost DoD $439B, Or Nothing: CBO**

By Theresa Hitchens
Aug. 25, 2020

WASHINGTON: The demise of the New START treaty that limits US and Russian nuclear forces could wind up costing the United States as much as $439 billion in modernization costs, plus another $28 billion annually for maintenance of a souped-up nuclear arsenal, finds a new study by the Congressional Budget Office (CBO).

Or, it could cost almost nothing at all, says the CBO report, mandated by Democrats on the Senate and House Armed Services Committees.

“DoD’s one-time costs could range widely, from zero if the United States chooses not to make any changes to its current plans, to about $100 million to $172 billion if it expanded its (nuclear) forces to START II levels, to $88 billion to $439 billion if it expanded to START I levels,” CBO’s press release about the study, “The Potential Costs of Expanding U.S. Strategic Nuclear Forces If the New START Treaty Expires,” says.

The estimates only cover costs to DoD for weapons platforms that deliver nukes (called Strategic Delivery Vehicles or SDVs), however. They don’t include development and manufacture costs of any new nuclear warheads, which are built and maintained by the Energy Department. But the study’s cost estimates for each scenario involving a build-up of the arsenal represent new costs — i.e. extra costs beyond currently planned spending for DoD on its on-going nuclear modernization effort. (CBO in January estimated the modernization effort will cost a total of $234 billion over the next 30 years.)

“The report shows that the already excessive and unsustainable financial costs to maintain and modernize the U.S. nuclear arsenal could soar even higher if the treaty expires in five months with nothing to replace it and the United States choses to increase the size of the arsenal,” Kingston Reif, director of disarmament and threat reduction policy at the Arms Control Association, told Breaking D in an email today.

The problem with calculating funding requirements is simply that there is no way to judge what a future president might decide about how many and what types of nuclear weapons platforms are needed because we won’t know as much about the size of the Russian arsenal once New START expires, a CBO official told Breaking D today.

That said, experts say that eventually the momentum toward a US nuclear build-up would become almost unstoppable. Indeed, the need for transparency into each other’s nuclear force structure to serve as a brake on a run-away arms race was the entire reason behind the US-Soviet arms control treaties in the first place.

“If the Russians start building up, our history suggests that our reaction will be to do the same. And in fact, if we thought the Russians were starting to build up — because of course we won’t know anymore because we can’t verify — then history would suggest that we would also build up. So I think there will be some real pressures to build up,” said one long-time arms control analyst.
“Ever-increasing spending on nuclear weapons without an arms control framework that bounds U.S. and Russian nuclear forces is a recipe for budget chaos, undermining strategic stability, and damaging the health of the global nonproliferation regime,” Reif said.

Because there is no way to predict the size of a future US nuclear arsenal — and just as importantly the mix of ICBMs, bomber and nuclear submarines making it up — CBO chose to price out cost ranges for arsenal sizes based on weapons caps included in three former US-Russian treaties: the 1991 Strategic Arms Reduction Treaty (START) I; the 1993 START II; and the 2002 Strategic Offensive Reductions Treaty (SORT, but more commonly called the Moscow Treaty).

“The lower end of each of those ranges reflects a lower-cost, less-flexible approach that emphasizes loading more warheads on each missile and buying fewer new systems; the upper end reflects a more-flexible, higher cost approach that emphasizes keeping warhead loadings on missiles similar to what the United States deploys today,” CBO’s release explains.

The study does note that expanding the nuclear arsenal could take many years. “Available warheads could be uploaded relatively quickly, but additional delivery systems and warheads would probably not be available before the late 2030s or early 2040s. Most of the additional costs of expanding forces would thus occur a few decades from now.”

The study found:

Expanding forces to Moscow Treaty limits (1,700 to 2,200 warheads) would not increase the Department of Defense’s (DoD’s) costs relative to its current plans, which call for fielding a new generation of strategic nuclear delivery vehicles to replace the current generation. CBO estimates that DoD’s production costs (not including development or operation costs) for implementing its current plans would total $240 billion over the next few decades.

Expanding forces to START II limits (3,000 to 3,500 warheads) or to START I limits (6,000 warheads) could be accomplished by increasing the number of warheads on each missile (which CBO refers to as the lower-cost approach) or by increasing the number of delivery vehicles (missiles, submarines, and bombers), which CBO refers to as the more flexible approach, or by some combination of the two.

Increasing warhead loadings to reach the START II limits would incur about $100 million in onetime costs for DoD. Increasing the number of delivery vehicles while maintaining current warhead loadings would increase DoD’s onetime costs by up to $172 billion over several decades and annual operating costs by $3 billion to $8 billion. (All costs are in fiscal year 2020 dollars.)

If DoD expanded forces to START I limits using the lower-cost approach, its onetime costs would rise by $88 billion to $149 billion and its annual costs by $4 billion to $10 billion. Under the more flexible approach, DoD’s onetime costs could increase by $410 billion to $439 billion and its annual costs by $24 billion to $28 billion. Total production costs would be nearly triple what DoD is currently planning to spend on production over the next few decades.

In addition, to aid future analysts as decisions are made about purchasing new platforms, CBO provided estimates for buying additional delivery platforms equipped for carrying their maximum number of warheads (i.e., one additional SSBN ballistic missile submarine, one B-21 bomber, and 10 new Ground-Based Strategic Deterrent (GBSD) silos.) For example, the study finds that 1 B-21 with 10 Long-Range Stand-Off (LRSO) cruise missiles and capable of launching eight nuclear warheads would cost $500 million, and $40 million a year (in 2020 dollars) to maintain.

New START, currently the only remaining US-Russia treaty capping nuclear weapons arsenals, will expire in 2021. The treaty limits Russia and the US each to no more than 1,550 deployed strategic warheads and 700 deployed strategic delivery vehicles (meaning ICBMs, submarines and bombers).
As Breaking D readers know, the Trump Administration has been publicly waffling on whether it will pursue a five-year treaty extension to avoid New START’s demise. Instead, President Donald Trump has ordered his staff to begin work on a possible new trilateral nuclear arms control treaty that he hopes include China and cover sub-strategic weapons (of which the Russians have more than the US) that are not covered by New START. Such a multilateral treaty is widely considered pie-in-the-sky by nuclear arms control experts.

Indeed, in a press briefing June 24 following a meeting with Russian counterparts in Vienna, Trump’s top arms control envoy Marshall Billingslea laid out conditions for any US agreement to extend New START that arms control experts say simply cannot be met. (Billingslea, a protégé of former National Security Advisor John Bolton, is, like his mentor, famous for his distaste for nuclear arms control.) These conditions include: China joining the treaty; expanding coverage to non-strategic weapons; and new verification clauses.

“Russian officials have reiterated their readiness to extend New START now. Amb. Billingslea’s conditions will thwart extension for the foreseeable future. That’s unfortunate. By not extending New START, the Trump administration forgoes a simple action that would strengthen U.S. national security and make Americans safer,” wrote Steven Pifer, a former State Department Russia hand and arms control negotiator now an affiliate at Stanford University’s Center for International Security and Cooperation (CISAC), on CISAC’s website June 30.


Atlantic Council (Washington, D.C.)

US Needs to Change the Way It Invests in Defense If It Wants to Compete with Rising Rivals

By Atlantic Council

Aug. 26, 2020

Key takeaway: Successive years of stagnant defense spending levels and the prospect of lasting economic damage from the coronavirus pandemic could threaten to leave the United States handicapped in its growing military competition with rising powers China and Russia. According to Michèle Flournoy, former US undersecretary of defense for policy at the Department of Defense (DoD), if the United States does not significantly invest in new and emerging capabilities, as well as research and development (R&D), “over the next decade, the US risks losing its military technological edge [and] losing the ability to confidently deter China, Russia, other powers.”

US Representative Michael Turner (R-OH), who joined Flournoy in an Atlantic Council Elections 2020 event on August 26, further warned that China and Russia “are not just becoming adventurous. They have already modernized” and could soon “be able to exceed what we have” in terms of modernized military equipment.

In this event, introduced by Deputy Director of Forward Defense Clementine Starling, and moderated by Atlantic Council Senior Vice President and Scowcroft Center for Strategy and Security Director Barry Pavel, both Turner and Flournoy argued that the United States needs to rethink the way it invests in its military capabilities if Washington wants to effectively deter its rising rivals. Here’s a look at what they said:

United States has fallen behind its rivals on modernization:
The impact of sequestration: Turner explained that the United States has fallen behind Russia and China’s modernization efforts due to the focus on the War on Terror, which “cannibalized” defense resources, and the effect of sequestration in freezing additional defense investments. The United States is now trying “both to get back to modernization, backfill the effects of sequestration” and retain the basic military functions of mobilization and mobility, Turner said.

Moscow and Beijing exploiting US weaknesses: While focus on Washington was divided between competing priorities, China and Russia have “gone to school on the US military,” Flournoy explained, spending “the last twenty, thirty years investing in asymmetric counters to our strengths.” This progress means that Washington is now “going to have to exceed what their [China and Russia’s] capabilities are,” Turner argued, if the United States hopes to “hold them at bay.”

Increased investment amid continued budget constraints

Defense spending sends a signal: Turner’s top priority going forward is “to defend the topline for the overall defense budget,” suggesting that initial projections show that spending needs “growth of three to five percent over the next several years to be able to accomplish modernization and ensuring that we are committed to the plans that we have in place.” While this money may be hard to find amid the growing financial cost of the coronavirus pandemic, he argued that continued investment is “going to be the biggest signal to our adversaries on whether or not America is going to remain a strong power in this great power competition.”

Don’t just match Russia and China though: Flournoy cautioned, however, that the United States “shouldn’t be thinking symmetrically,” when it comes to countering China and Russia’s growing military capabilities. Rather than trying to match them “plane for plane, tank for tank, [or] ship for ship,” the DoD should aim to “use our tremendous capacity for innovation to come at them asymmetrically, to undermine their strengths, [and] to exploit their vulnerabilities.”

Ingenuity to be found in private sector: Turner agreed, adding that the United States has “to be inventive, we have to look to ingenuity for how we exceed [Russia and China’s] capabilities.” He argued that much of this innovation can be found in the private sector and the DoD should change their approach to how they work with the marketplace. Rather than coming up with new capabilities and then going to companies to bid on production, Turner suggested that US officials “look at the marketplace and see what capabilities are already out there,” and see how these technologies could be adapted for military use.

Tradeoffs needed: With competing domestic and international priorities, both Turner and Flournoy conceded that increased investments in some areas will require cuts in others. “There is only so much and there will have to be tradeoffs,” Turner said, lamenting that the United States is “in this unenviable position of having to invest in readiness, invest in training, to catch up on modernization that we had on the books.” Flournoy argued that defense officials will need to judge the point at which investments in new modernization projects are worth abandoning the procurement of a conventional system, such as a ship or airplane.

Agility requires working with Congress:

Learning to embrace risk: In order to unlock the “kind of agile development and the leveraging of the commercial cutting edge technology that is out there and bring it into the defense realm,” Flournoy argued, defense officials are going to have to build “a higher risk tolerance” in their operations. Defense officials have often been reluctant to take chances, she explained, because the acquisition process is focused on being “extremely risk adverse, to focus on keeping programs on cost [and] on schedule.”

Bring Congress to the table: In order to get over this reluctance, Flournoy advocated for “much more of an open partnership...between the [Defense] Department and Congress” which is often the
most outspoken in criticism of costly Pentagon projects. If Congress can explicitly “allow the Department to acquire some experimental technology” so that they can do testing, it could save money over the long run by determining its value before committing to a multi-year production project, she argued.

Ability to fail: Turner agreed, saying that Congress needs to “encourage ingenuity that will allow failures so that we can find the answer” to unlocking new technologies. While Congressional oversight is certainly needed to avoid wasteful spending, there is “an approach to oversight that would allow Congress to partner with the Department to allow [a] kind of agility” needed to spur innovation, Flournoy said.

Competition beyond the battlefield

American power starts at home: Flournoy also maintained that China and Russia’s competition with the United States is not just about military assets. She explained that both countries “have invested in propagating a narrative of US decline,” taking advantage of the United States’ difficulty in containing the coronavirus pandemic, tackling systemic racism, and economic uncertainty. The “first thing we have to do is show that we are not in decline, that we are a resilient country, and we are taking the steps that we need to get the pandemic under control [and] to recover economically,” she said.

Don’t forget allies: The United States also needs “to be showing up more strongly diplomatically around the world, we need to be showing up and leading and communicating [that] we have interests, we have allies, and we are willing to stand by them and defend them,” Flournoy argued. Turner agreed, adding that “part of our overall deterrence planning has to be deter any threats to our allies.”

Transparency is key: Turner stressed that a main way the United States can help harness the power of its allies to confront the threat from China and Russia is to become more open with US partners about what these adversaries are doing. Turner explained that US officials often keep information about Russian and Chinese military activities “classified because we are so worried about means, methods, and techniques or someone knowing what we know, that we forget to tell everybody what we know.” Flournoy also said the United States should continue to use transparency to “out” the disinformation narratives of Beijing and Moscow. “The best way to counter some of this meddling, this propaganda is with facts and truth and openness,” she argued.


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Air Force Magazine (Arlington, Va.)

Barksdale Changes Course, Evacuating Bombers Ahead of Hurricane Laura

By John A. Tirpak

Aug. 26, 2020

As Hurricane Laura strengthens to a Category 4 storm, Eighth Air Force is moving most of its 47 or so B-52 bombers at Barksdale Air Force Base, La., to other locations and putting base personnel at HURCON 2, the second-highest storm readiness level, rather than evacuating personnel, a 2nd Bomb Wing spokesman said.
Barksdale, which hosts 8th Air Force, Global Strike Command, and about half the Air Force’s B-52H force, is located in northwest Louisiana, almost directly in the path of Laura, which is predicted to skirt the Louisiana/Texas border after making landfall the night of Aug. 26. The National Hurricane Center predicted Laura will still be at about Category 1 strength, with winds up to 95 miles per hour, when it reaches the vicinity of Shreveport and Bossier City, where Barksdale is located, the morning of Aug. 27.

“I need the Airmen of Team Barksdale to take this seriously,” 2nd Bomb Wing Commander Col. Mark C. Dmytryszyn said in a message to base personnel. “Ensure you have adequate supplies and are prepared to weather this storm.”

Ellington Field Joint Reserve Base, near Houston, Texas, is expected to take a heavy but not direct hit from Laura. It has moved its MQ-9 Reapers and F-16s—which normally sit alert at the facility—into hangars to ride out the storm, a spokesman said. The base, which hosts Reserve units from all services and the Coast Guard, also “stands ready” to serve as a forward air relief and logistics site after the storm, “as we did after Hurricane Harry and Ike,” an Air Force Reserve spokesman said.

Barksdale B-52 Evacuations

A B-52H bomber takes off from Barksdale Air Force Base, La. on Aug. 26, 2020, ahead of Hurricane Laura, which is expected to bring high winds and possible water damage to the base on Aug. 27, 2020. The destination of the bombers was not disclosed for reasons of operational security. Photo: USAF

Global Strike Command does not confirm or deny the presence of nuclear weapons at any base, but Barksdale’s B-52Hs have a nuclear mission with the AGM-86B Air-Launched Cruise Missile. The spokesman declined to comment on the configuration of the bombers as they depart the base, and would not say where they were headed until they arrived, citing operational security.

In the runup to the arrival of now-Tropical Depression Marco and Hurricane Laura, the base remained at Hurricane Condition 4, but the base commander upgraded that to a HURCON 2, on a scale where the lower number indicates greater danger, as Laura gained strength. At HURCON 2, destructive winds are expected within 24 hours, and base personnel are expected to have secured outdoor objects, prepared their homes with protective measures and emergency supplies, and prepared go-kits for short-notice evacuation, although the plan remains for personnel to “shelter in place,” the spokesman said.

Low-lying areas on base are being protected with sandbags, the spokesman said, though he was not immediately able to say what measures would be taken to protect aircraft down for maintenance and unable to fly.

In 2005, Barksdale suffered moderate structural damage and downed trees as a result of Hurricane Rita, but Laura is expected to arrive with stronger force.

Laura is expected to push a storm surge of more than 20 feet along the western Louisiana coast, and surge as much as 30 miles inland in some places, according to the National Weather Service.


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Defense News (Washington, D.C.)

**Trump Administration Sends Mixed Signals on Nuclear Weapons Budgeting**

By Joe Gould and Aaron Mehta

Aug. 25, 2020

WASHINGTON — Defense hawks in Congress are pushing a contentious plan to give the Pentagon a stronger hand in crafting nuclear weapons budgets, but the Trump administration has been sending mixed messaging over recent weeks about whether the change is needed.

The Senate-passed version of the annual defense policy bill would give the Pentagon-led Nuclear Weapons Council a say in the budget development of the National Nuclear Security Administration, a semi-autonomous agency within the Department of Energy that’s responsible for the stockpile’s safety, security, and effectiveness.

However, Assistant Secretary of Defense for Strategy, Plans, and Capabilities Vic Mercado told reporters that change is unneeded; the status quo between the Defense Department’s nuclear modernization efforts and NNSA is appropriate.

“I think right now we have it about right,” Mercado said in an interview this month. Nuclear deterrence falls under Mercado’s portfolio as an adviser to the defense secretary and undersecretary for policy.

The remarks could be read as neutral as the House and Senate debate competing proposals as part of their deliberations on the 2021 National Defense Authorization Act.

A Senate-passed proposal would grant the Nuclear Weapons Council new authority to edit NNSA’s budget request after the Energy Department crafts it and before the request is submitted to the White House budget office.

The House-passed bill would instead establish the secretaries of defense and energy as co-chairs of the Nuclear Weapons Council, versus the undersecretary of defense for acquisition of sustainment and the NNSA administrator today.

Mercado said that he had “heard of all these initiatives to try to skew it one way or the other,” but that the Undersecretary of Defense for Acquisition of Sustainment Ellen Lord, NNSA Administrator Lisa Gordon-Hagerty, the armed services and DoD’s policy shop, today all share, “a very healthy and productive” relationship on the topic of nuclear weapons.

“The work we’ve done with NNSA, as we go through modernization, prioritization and efforts like that to make sure that their industrial base and [plutonium] pit generation is healthy and supports us — I think there’s always creative tension, but I think it’s healthy tension,” Mercado said.

Separately, the House passed a prohibition on DoD coordinating the NNSA budget within the Nuclear Weapons Council as part of a larger appropriations package.

The White House’s July 30 threat to veto the package objected to that provision, saying: “While respecting the independence of each department is important, ensuring the proper degree of coordination in the nuclear modernization efforts of both departments is also important.”

Key Republicans on the Senate Armed Services Committee have been pressing for more public advocacy from the administration against those Democrat-led proposals.
At an Aug. 6 hearing, several lawmakers prompted the nominee to be assistant secretary of defense nuclear, chemical, biological, and defense programs, Lucas Polakowski, to argue the council should provide guidance and assistance to the NNSA as it develops its budget each year.

SASC Chairman Jim Inhofe, R-Okla., and a top nuclear modernization advocate asked Polakowski: “If confirmed, what would you think if you were prevented from even seeing the NNSA budget until after it was finalized for submission to Congress?”

“I think that would be a mistake and would severely impair not only our existing triad but our modernization efforts going forward in the future and, in fact, could potentially jeopardize our national defense quite significantly,” Polakowski responded.

Inhofe outlined the House proposal, eliciting Polakowski’s opinion: “I think that’s a mistake and I would not support it, senator.” Polakowski also agreed with Inhofe that this would give the energy secretary new, “veto power” in the budgeting process.

Inhofe earlier in the year clashed with Energy Secretary Dan Brouillette after he backed a larger budget request than Brouillette sought.

In an exchange with Airland Subcommittee Chairman Tom Cotton, R-Ark., Polakowski warned that if DoD didn’t participate in NNSA’s budget process, it would lead to “uncontrolled spending. And most importantly, our nation’s deterrent would suffer.”

Polakowski would be designated staff secretary for the Nuclear Weapons Council. A managing member at IT firm Everest Technologies, he previously served as deputy director at U.S. Strategic Command’s Center for Combating Weapons of Mass Destruction.

Earlier in the hearing, SASC ranking member Sen. Jack Reed, D-R.I., told Polakowski of his, “concerns about your expertise in nuclear matters, since you have great experience in chemical and biological weapons. I would hope you will focus a great deal of your attention on getting up to speed with respect to nuclear matters.”

As Congress deliberates on the defense policy bill, the conservative Heritage Foundation think tank released its recommendations Tuesday, which argued against elevating the chairmanship of the Nuclear Weapons Council to the secretary level, as the House proposed. For one, the undersecretary of defense for acquisition of sustainment has, “the expertise and time to give nuclear weapons the attention they deserve.”

“The House change would put the Secretary of Energy in a position to veto decisions that relate exclusively to DOD capabilities,” the report reads. “As the customer of the NNSA, the DOD should maintain its sole leadership of the council.”


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US COUNTER-WMD

Defense News (Washington, D.C.)

**Latest Variant of Patriot Missile Misfired in Major Test of Command System**

By Jen Judson

Aug. 26, 2020

WASHINGTON — The most advanced variant of the Patriot missile misfired during a major test of the U.S. Army’s air and missile defense battle command system, which involved tactical ballistic missile and a cruise missile targets, an Army official confirmed.

Inside Defense, on Aug. 24, first reported the failure that occurred at White Sands Missile Range, New Mexico, on Aug. 20.

A Patriot Advanced Capability-2 Guided Enhanced Missile was used against the cruise missile target, but the Patriot Missile Segment Enhancement missile that was intended to intercept the tactical ballistic missile target misfired, Col. Phil Rottenborn, the Integrated Battle Command System project manager within the Army’s Program Executive Office Missiles and Space, confirmed for Defense News in an Aug. 26 statement.

Lockheed Martin is the manufacturer of all Patriot missile variants.

The test set up two interceptors to go up against the tactical ballistic missile, which was a Black Dagger Zombie target missile, and “the [IBCS] system did what it was designed to do” by deploying a PAC-3 Cost Reduction Initiative, or CRI, missile when the Patriot Missile Segment Enhancement missile misfired, which continued the engagement and took out the tactical ballistic missile, Rottenborn said.

An additional CRI was available but was not launched due to the system’s confirmation that an interceptor had destroyed the target, he added.

“Root cause analysis on the MSE misfire is ongoing, but preliminary indications are that all IBCS commands to the launcher were executed successfully,” Rottenborn said, “and that the error may lie within the missile, but further analysis is required to determine that with certainty.”

Rottenborn noted the MSE weapon is “a proven and capable missile with a great track record, and I’m confident the team will sort this out quickly.”

The Army’s IBCS system is undergoing a major limited-user test through mid-September ahead of a production decision expected by the end of the year. The system has had a plagued past; it failed its first limited-user test in 2016 after a few days of trying to get it up and running.

Army officials including Army Vice Chief of Staff Gen. Joseph Martin and Army Under Secretary James McPherson told reporters on a call last week shortly after the live-fire test that it was a success and the two incoming targets were destroyed nearly simultaneously. There was no mention of the MSE misfire during the call.

The cruise missile and advanced tactical ballistic missile targets were launched from different places toward Army air and missile defenders, while multiple, disparate radars sent data to IBCS as they tracked the incoming targets. IBCS pieced the data together into a uniform track of each target missile. The system then informed the defenders which interceptors would be best to engage the threats.
Officials reported that soldiers launched a Patriot Advanced Capability-2 missile and destroyed the cruise missile target, while a PAC-3 was launched and destroyed the ballistic missile.

The live-fire test falls on the heels of another major test executed a week ago at White Sands, where IBCS successfully coordinated the defeat of two incoming cruise missile threats amid debris while a portion of the system was brought down by jamming.

In that test, IBCS made it possible to engage a single interceptor per target, Col. Tony Behrens, the Army capability manager and director of Army Air and Missile Defense Command, said at the time of the event. Typically, two interceptors, one following the other, are deployed against a single missile target in case the first misses.

With IBCS, the Army will be able to use fewer interceptors in engagements, Behrens said.


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UPI (Washington, D.C.)

**Lockheed Nets $18.8M to Support Japan’s Aegis Ashore System**

By Ed Adamczyk

Aug. 26, 2020

Aug. 26 (UPI) -- Lockheed Martin won an $18.8 million modification contract for planning and risk reduction of the Aegis Ashore defense system in Japan.

The modification of the contract with the U.S. Missile Defense Agency was announced on Tuesday and increases its value from $3.27 billion to $3.29 billion.

Lockheed Martin Rotary and Mission Systems will continue performing engineering design support and analysis of services of the Aegis Ashore Japan system.

The land-based missile defense system is a part of the security alliance between Japan and the United States, and provides defense against short to intermediate-range ballistic missiles. Aegis missiles have been part of Japan’s military defense strategy since 1993.

Lockheed Martin was awarded a $70.2 million contract to support sea-based Aegis development for the U.S. Navy and the governments of Japan, South Korea and Norway in June. Plans to cancel use of the land-based Aegis Ashore system at two sites in Japan were announced days later, citing cost and technical issues.

Japan’s military had planned to deploy it to counter threats from North Korean missiles, but increasing problems raised the $2.15 billion estimated cost to over $4 billion, including purchase cost and an expected 30-year use.


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Carnegie Endowment for International Peace (Washington, D.C.)

**Solid Ambitions: The U.S.–South Korea Missile Guidelines and Space Launchers**

By Ankit Panda

Aug. 25, 2020

Seoul’s missile activities have long been constrained by decades-old limits that South Korea agreed on with its longtime ally, the United States. At various junctures, these limits have gradually been loosened, though the latest such change may not upset the regional security balance as much as it may appear to at first blush.

Most recently, following nine months of negotiations, the United States and South Korea agreed to further revise these bilateral missile guidelines in the summer of 2020. On July 28, 2020, South Korean Deputy National Security Adviser Kim Hyun-chong announced that, pursuant to the newly agreed revisions, South Korean individuals and entities will be, for the first time, capable of “developing, producing, and possessing” space launch vehicles (SLVs) making use of solid rocket motors without restrictions. Kim went on to announce, “As of July 28, 2020, limits on the use of solid fuel in space launch vehicles are completely removed.”

The decision opens a new era for South Korean space launch activities and has raised questions about possible military applications for large-diameter solid rocket boosters. While these technologies hold economic promise for a country that seeks to scale its space program quickly, they can also contribute to a long-range missile program. Ballistic missiles that use solid propellants are generally more operationally nimble than their liquid-propellant counterparts and, as a result, can be more militarily useful.

The revised guidelines were announced during the start of a new era of possible missile proliferation in the Asia-Pacific region, and these revisions coincide with a deteriorating geopolitical environment amid growing U.S.-China frictions. Moscow’s and Washington’s scrapping of the 1987 Intermediate-Range Nuclear Forces Treaty in 2019 has introduced the possibility of new U.S. short- and intermediate-range conventional missile deployments in Asia.[1] Meanwhile, Japan and Australia are both exploring standoff strike capabilities to better deter perceived threats, China continues to expand its large arsenal of conventional and dual-capable missiles, and North Korea keeps on qualitatively refining and quantitatively expanding its missile capabilities. The revised U.S.–South Korea guidelines have sparked some concerns that Seoul may harbor other motives beyond facilitating civilian spacefaring activities and that this revision may ultimately set up Seoul for a longer-range, more capable missile arsenal.

But a closer look at South Korea’s objectives suggests the July 2020 guideline revisions are not what should really draw attention. Instead, Seoul’s indigenous ballistic missile programs, which have continued apace under gradually slackening bilateral guidelines over the years, should be the primary focus. South Korea’s Agency for Defense Development (ADD) is already pursuing capabilities, within the confines of a prior revision to the guidelines, that open up new missile possibilities for Seoul and that may heighten the odds of misperceptions in the region.

**EARLIER REVISIONS TO THE GUIDELINES**

The U.S.–South Korea missile guidelines have been revised before. The July 2020 decision represents the third significant revision to the forty-one-year-old guidelines—originally agreed upon in a classified 1979 bilateral understanding—in the last decade. In 2012, a previous
conservative South Korean government, led by then president Lee Myung-bak, clinched an agreement allowing Seoul to develop ballistic missiles capable of delivering 500-kilogram payloads to ranges of up to 800 kilometers (sufficient to strike all of North Korea from Daegu, a southern city in South Korea). Seoul had requested the range extension to augment its autonomous strike capabilities following twin provocations in 2010: a North Korean torpedo sunk a South Korean corvette, ROKS Cheonan, and North Korean artillery shelled the South Korean–controlled Yeonpyeong Island.

The 2012 revision followed a 2001 extension of the original 180-kilometer range limit to 300 kilometers. This earlier revision was linked to Seoul’s accession to the Missile Technology Control Regime (MTCR), a cartel of states capable of producing technologies necessary for manufacturing advanced ballistic missiles; at that time, this revised limit matched the regime’s Category I range and payload limits.

Fast-forwarding to the near present, in 2017, the administration of U.S. President Donald Trump, amid breakneck North Korean qualitative advances in missile technology, reached an agreement with South Korean President Moon Jae-in’s administration to eliminate the payload weight limit entirely while maintaining the 800-kilometer missile range restriction. Yet none of these revisions had affected South Korea’s space launch technologies—until the July 2020 announcement.

SOUTH KOREAN SOLID PROPELLANTS

Until now, South Korean indigenous SLVs have relied on liquid-bipropellant combinations that would be poorly suited for anything but orbital launches. For instance, the Korea Aerospace Research Institute’s (KARI) Nuri, also known as Korea Satellite Launch Vehicle-II (KSLV-II), employs liquid oxygen (LOX) and a kerosene variant as its oxidizer-fuel combination across all three missile stages. Cryogenic liquid oxidizers, like LOX, have several advantages, but major operational drawbacks in terms of their handling and storage have kept them from being used in modern ballistic missiles. First-generation U.S. and Soviet intercontinental ballistic missiles (ICBMs)—like the Atlas and the R-7, for instance—employed LOX, but their successors quickly moved to noncryogenic hypergolic liquid bipropellants before eventually settling on solid propellants.

Solid propellants for long-range, large-diameter rockets have a similar appeal when used for orbital and suborbital applications whether they are employed for civilian or military purposes. With the fuel cast directly into their airframes, solid rocket motors can be readied for use with considerably less pre-launch preparation, assuming proper handling and storage. (Proper storage and transportation of solid rocket motors are nontrivial considerations.) This characteristic makes solid propellants often preferable for military applications—especially for small-diameter missiles.

Solid fuels do have their drawbacks, however. For instance—unlike liquid-propellant engines, which can be remotely shut off—once ignited, solid-fuel engines will burn until all available fuel is consumed. Seoul’s presented rationale for pursuing solid-propellant SLVs does not rule out the possibility that new solid boosters may eventually be used as ballistic missiles, but the main focus for now is on enabling cheaper surveillance satellite launches.

Kim, South Korea’s deputy national security adviser, was quite open in his July press conference that Seoul envisages potentially using new, solid-propellant orbital launchers to send observation satellites into low-Earth orbit. “Theoretically, we can launch a low-Earth orbit satellite via liquid-fuel rockets, but it’s like delivering a dish of jjajangmyeon [a Korean noodle dish] by [way of] a 10-ton truck,” he added, apparently seeking to make the case for the economical nature of delivering smaller payloads in this manner.
This point bears emphasizing: it can be more economical for a space program to scale around solid rocket boosters, depending on the types of payloads and desired orbits. As South Korea looks to improve its indigenous intelligence, surveillance, and reconnaissance (ISR) capabilities against North Korea in the coming years, military surveillance satellites will come to play a more important role in South Korean military planning.

Such capabilities are also an important barometer for facilitating larger alliance goals, namely the transfer of wartime operational control (OPCON) from the U.S. military to South Korea’s own forces. The South Korean forces under the alliance’s Combined Forces Command have been led by U.S. military generals for some time, but Seoul has long aspired to regain the operational prerogative to lead these forces on South Korean soil in wartime. One of the conditions for such a transfer is that the South Korean military meet certain benchmarks when it comes to its military capabilities.

Addressing this point, Kim was open about Seoul’s desire to deploy such satellites into low-Earth orbit, but he also made clear that existing liquid propellant–based launch vehicles are uneconomical for this application. South Korea’s strategic goal, per Kim, is to realize persistent space-based surveillance of North Korea, granting Seoul what he referred to as an “unblinking eye.” In July 2020, the commercial firm SpaceX launched South Korea’s first exclusive military communications satellite, the Army Navy Air Force Satellite Information System II (ANASIS-II).

Other countries make varied use of solid-propellant SLVs for varied payload delivery to low-Earth orbit when conducting commercial and state-run space activities. Liquid-propellant boosters can be more energetic and efficient, so they tend to be favored for most missions. In the United States, repurposed solid-fueled LGM-118 Peacekeeper ICBMs are used for delivering certain government payloads to low-Earth orbit. Similarly, China’s Kuaijou-11 program is somewhat unique in how it uses a vehicle called a transporter erector launcher to facilitate mobile launches of light satellites (an approach that could be employed for purposes such as enabling the rapid replacement of satellites that may be lost to anti-satellite weapons during a conflict).

Future launches of surveillance satellites would reduce Seoul’s dependence on U.S. technical surveillance capabilities to monitor North Korean activities and help the South Korean military achieve conditions-based OPCON transfer.[2] (After several delays, the current timeline for such a transfer is set for 2022.) Shortly before the announcement of the updated guidelines, U.S. Secretary of Defense Mark Esper and his South Korean counterpart Jeong Kyeong-doo “expressed their unwavering support for a conditions-based OPCON transition, consistent with the bilaterally-agreed Conditions-Based OPCON Transition Plan,” according to a Pentagon statement.

The latest July 2020 revision to the guidelines will facilitate these goals and was largely driven by Seoul’s space-based ISR ambitions. However, some analysis on the latest revision suggests that Seoul may now seek to build larger-diameter, longer-range solid-propellant rockets to possibly hold at risk targets in North Korea and perhaps even in China. North Korea historically has been and continues to be the primary driver of South Korea’s missile program.

During previous rounds of bilateral consultations with the United States, South Korean officials sought to ideally win approval to possess 1,000-kilometer-range missiles—capable of reaching almost all of North Korea from the island of Jeju off the southernmost tip of South Korea. New, heavy-payload ballistic missiles already in development could range much farther than 800 kilometers with a lighter payload, so South Korea already technically possesses the capability to reach all of North Korea with a 500-kilogram payload. The chief constraint preventing Seoul from officially unveiling and deploying this capability remains the bilateral missile guidelines. Although Seoul could repurpose these capabilities to hold at risk targets in northern China and parts of eastern China, South Korea holds quite nuanced views of China and does not view it as a major categorical threat, making this outcome unlikely.
NEW SOUTH KOREAN BALLISTIC MISSILE DEVELOPMENTS

What should moderate any immediate concerns on the possible consequences of South Korea’s shift to solid-propellant SLVs is the primary concern hiding in plain sight. South Korea continues to develop solid-propellant ballistic missiles that are already capable of not only reaching all of North Korea but of doing so with heavy conventional payloads. The Hyunmoo-4 is an 800-kilometer-range system that entered testing for the first time earlier in 2020. Moon applauded it recently for exhibiting “close to the world’s heaviest warhead weight,” making full use of the 2017 update to the missile guidelines. While this missile is thought to feature a 2,000-kilogram payload, if it were to be launched with a payload half that weight, the Hyunmoo-4 would perform as a medium-range missile (using the U.S. government definition of missiles with ranges between 1,000 and 3,000 kilometers).

Little is known authoritatively about the Hyunmoo-4 beyond the fact that it entered testing this year. Its reported payload weight has appeared in multiple South Korean press reports and is consistent with the general direction of the Hyunmoo program under ADD’s auspices. For instance, the Hyunmoo-2C—also an 800-kilometer-range system, but with a smaller payload—was publicized during testing in 2017 at the height of tensions on the Korean Peninsula.

ADD emphasized the system’s earth-penetrating warhead and its precision. The suggestion was that this capability would be useful in striking tunnel-based missile launchers, hardened command-and-control targets in North Korea, or perhaps even Kim Jong Un himself. The Hyunmoo-4 appears to be a bigger and more explosive version of the Hyunmoo-2C: this new model is capable of executing that same mission against ever-harder targets that would necessitate more explosive power.

In the near term, South Korea is likely to continue investing in the Hyunmoo-4 program. This system represents the most serious challenge to the spirit of the principles that drove the missile guidelines, which were first implemented in 1979 and were primarily concerned with building confidence that South Korea could not build plausible nuclear-delivery systems. (Seoul’s indigenous nuclear weapons program had ended in the mid-1970s.)

The guidelines were designed—and updated in 2001 and 2012—with the understanding that it is reasonable to control missile capabilities by manipulating either payload or range limits. For a given payload constraint (500 kilograms, for example), extending range limits would allow Seoul to develop new boosters, but only to a point. With the scrapping of payload limits altogether in 2017, the Hyunmoo-4 was allowed to surface, raising the specter of possible longer-range South Korean systems. Seoul’s apparent acquisition of some components from older Russian ICBMs has left lingering concerns that South Korea may seek longer-range missile capabilities.

In today’s context, these concerns deserve to be taken seriously. Although South Korea continues to abide by its obligations under the Nuclear Non-Proliferation Treaty, and though its government leaders do not seek nuclear weapons, the growth of North Korean nuclear capabilities in the last five years combined with growing unease about the credibility of U.S. alliance assurances in the Trump era have renewed debates in Seoul on pursuing nuclear weapons capabilities in the future.

The military balance on the Korean Peninsula has changed dramatically since 1979, when South Korea’s missile ambitions outranged those of North Korea, which at the time had yet to flight-test its first Scud missiles. Despite this—in the spirit of the original 1979 guidelines, which sought to assuage concerns about South Korean nuclearization in the 1970s—Seoul should transparently help build confidence that its existing missile programs are no cause for concern beyond contributing to necessary conventional deterrence vis-à-vis North Korea. This confidence building
would have salutary effects on regional stability amid intensifying geopolitical competition between the United States and China.

NEXT STEPS

South Korea’s expanding space launch ambitions, sealed by the July 2020 revisions to the bilateral missile guidelines, need not heighten Northeast Asian insecurity. Seoul’s interest in more economical space launch activities and an expanded space-based layer of military surveillance is understandable. South Korean measures to increase transparency, however, could reduce the chance of misperceptions about Seoul’s intentions. Similarly, South Korea could help build confidence around its ongoing missile programs.

To mitigate a worsening security dilemma with Pyongyang and potentially Beijing, Seoul should declare the scope of applications for government-sponsored research and development in larger solid rocket boosters. While publicizing existing capabilities, like the Hyunmoo-4, may be undesirable due to the current South Korean government’s inter-Korean diplomatic efforts, Seoul can do so without provocative messaging (such as threatening North Korea with decapitation attacks or strikes on hardened military sites).

Beyond this, South Korea should also transparently release plans for specific KARI-led civilian spacefaring projects and military satellites that may make use of larger solid-propellant boosters. Such transparency would reinforce Seoul’s stated plans and build confidence. At a higher level, the South Korean government should take steps to clarify its ongoing commitment to the terms of the MTCR and the Hague Code of Conduct Against Ballistic Missile Proliferation.

Meanwhile, as testing of the Hyunmoo-4 continues, South Korea should limit development on larger payload conventional missiles that could technically be compliant with the 800-kilometer-range restriction in the bilateral missile guidelines.

Separately, the United States and South Korea should work to build confidence in the region that the 2017 and 2020 changes to the guidelines will not adversely affect regional stability. To this end, they should open an ongoing bilateral consultative review of the missile guidelines. While Seoul is not seeking further changes to the guidelines, it would be productive for the allies to establish a semiannual or quarterly review of the guidelines and discuss related matters, including any issues of concern stemming from South Korean missile activities and civilian rocket research.

South Korea has seen its security environment deteriorate sharply over the last decade as its northern neighbor has reached significant missile and nuclear milestones. Meanwhile, political malaise over cost-sharing has begun to seep into the foundations of the bilateral alliance with the United States since 2017. In this environment, precision strike missiles and a robust, indigenous space-based constellation of military surveillance satellites can plug important perceived gaps in conventional deterrence and even hedge against plausible shifts in how the United States postures its forces on the Korean Peninsula.

But Seoul’s ability to now use solid-propellant boosters to deliver satellite payloads to low-Earth orbit should not be the primary concern in the short term. Given the already impressive capabilities embodied in the Hyunmoo-4 and its predecessor, South Korea has already made itself stand out as a leader in missile technology. But as Seoul embarks into a new era as a spacefaring nation, it should take precautions to dispel concerns about its intentions and work to build confidence while practicing effective deterrence against North Korea.

NOTES

1 The Trump administration withdrew from this treaty, citing a Russian missile in violation of its terms. When signed, the treaty banned the United States and the Soviet Union (and later Russia,
Belarus, Kazakhstan, and Ukraine) from possessing, building, or testing ground-launched ballistic and cruise missiles with ranges between 500 and 5,500 kilometers.

2 Advanced ISR and precision-strike capabilities play a particularly important role in South Korea’s Kill Chain and Korea Massive Punishment and Retaliation strategies. The two, along with the Korea Air and Missile Defense, are sometimes referred to as the K3 suite of capabilities that, once completed, will allow for OPCON transfer. Once completed, command of the bilateral Combined Forces Command will transition to a South Korean general, with a U.S. military general taking on the role of deputy commander.


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UPI (Washington, D.C.)

Iran Agrees to Inspections of 2 Suspected Nuclear Sites

By Clyde Hughes

Aug. 26, 2020

Aug. 26 (UPI) -- Iran agreed Wednesday to allow United Nations inspectors access to two sites on the heels of the United States trying to force snapback sanctions connected to the Obama-era 2015 nuclear deal.

In a joint statement by the U.N.’s International Atomic Energy Agency and Iran, the country said it will voluntarily provide the agency access to two locations suspected of carrying out illegal nuclear-weapons work.

"Dates for the IAEA access and the verification activities have been agreed," according to the joint statement. "The IAEA verification activities will proceed in accordance with the [Comprehensive Safeguards Agreement] and the [Additional Protocol], and the IAEA's standard verification practice as implemented for all States with CSAs and APs on equal basis and without discrimination."

IAEA Director General Rafael Grossi traveled to Tehran Monday to talk with Iranian leaders about gaining access. In June, Britain, France and Germany -- three of the original signers of the Joint Comprehensive Plan of Action -- called for inspections of the two sites.

"Both sides recognize the independence, impartiality and professionalism of the IAEA continue to be essential in the fulfillment of its verification activities," the joint statement said. "The IAEA will continue to take into consideration Iran's security concerns."

The United States this month called for a trigger in JCPOA that would snapback original 2015 sanctions against Iran for non-compliance with the deal. The Trump administration, though, walked away from the deal in May 2018, hoping to force Iran back to the bargaining table.

U.N. Security Council President Triansyah Djani said Tuesday that the United States cannot place snapback sanctions on Iran because there was no consensus among council members.


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COMMENTARY

Oak Ridger (Oak Ridge, Tenn.)

**Nuclear Weapons: An Oak Ridger’s Dilemma**

By Caroluyn Krause

Aug. 26, 2020

A pandemic, massive unemployment, food and water shortages, systemic racism and police brutality, as well as human-induced climate change. Is there anything else to add to this depressing list? Unfortunately, yes. There’s humankind’s No. 1 existential threat: a possible nuclear war.

Motivated by the commemoration of the 75th anniversary of the first uses of the newly developed atomic bomb, which resulted in over 200,000 deaths in two Japanese cities, I have an admission to make: As an Oak Ridger for 50 years, I feel conflicted about nuclear weapons. As a mother and grandmother, I am horrified by experts’ predictions that detonation of just a few nuclear weapons could destroy most of human civilization. The few survivors, burned, bleeding, suffering from loss of limbs, would likely face homelessness and famine.

At the start of 2020, nine nations — the United States, Russia, the United Kingdom, France, China, India, Pakistan, Israel and North Korea — possessed an estimated total of 13,400 nuclear weapons. The thermonuclear weapons (hydrogen bombs, each of which combines chemical, fission and fusion bombs) are almost 700 times more powerful than the bomb dropped Aug. 6, 1945, on Hiroshima, Japan.

I fully understand why many people worldwide wish to abolish nuclear weapons and claim that the possession of nuclear weapons is immoral and illegal and that any future uses would be war crimes. To go into effect, at least 50 nations must ratify the Treaty on the Prohibition of Nuclear Weapons, passed in July 2017; so far 43 have ratified it. But the United States and Russia have explicitly opposed this Nuclear Weapon Ban Treaty, and the other seven nuclear-armed nations don’t support it.

Even Japan and other non-nuclear-armed NATO members resist endorsing the ban treaty because they believe U.S. nuclear weapons enhance their security. As long as Kim Jong-Un is pumping resources into North Korea’s nuclear missile programs and threatening the U.S. and Japan, disarmament doesn’t make sense.

I admit to being bothered by the fact that “the U.S. president has sole authority to order a nuclear strike,” according to former U.S. Defense Secretary William Perry, who also said on a recent PBS Newshour, “Starting a nuclear war is as easy as sending a tweet.”

I’m all in favor of the New Strategic Arms Reduction Treaty (New START) that went into effect in 2011, but expires next year. Signed by President Obama and Russian President Medvedev, it limited each side to 1,550 strategic warheads (down from 2,200) and lowered the number of deployed strategic launchers and heavy bombers to 700. To ensure that the Senate would vote to ratify the treaty, Obama (who started his presidency advocating the elimination of nuclear weapons) had to commit to modernizing U.S. nuclear defense facilities.

This treaty, just like the Manhattan Project, turned out to be good for Oak Ridge. It has led to the design and ongoing construction of the new $6.5 million Uranium Processing Facility (UPF) at the Oak Ridge Y-12 National Security Complex. One of the largest federal projects in Tennessee since the Manhattan Project, the UPF is supposed to provide up to 2,400 jobs and spend $1.8 billion for

[1]: twitter.com/USAF_CSDS | airuniversity.af.edu/CSDS // 21
goods and services. As an Oak Ridger, it’s hard not to regard the UPF as good for national security and regional economic security.

Y-12 has contributed to national security in numerous ways. It provides fuel for naval reactors in aircraft carriers and submarines, which carry nuclear-tipped Trident missiles. It safely stores highly enriched uranium (HEU) and “down-blends” HEU from dismantled Russian weapons to make low-enriched uranium fuel for nuclear power plants. It supplies HEU, beryllium, lithium-hydrogen compounds and machined parts for refurbishing aging thermonuclear weapons, helping ensure a safe and effective U.S. nuclear weapons deterrent.

During the Manhattan Project, Y-12 provided uranium fuel for the first A-bomb, and the predecessor of Oak Ridge National Laboratory (which still contributes to nuclear technology and national security) supplied plutonium samples that prompted a second design for a nuclear weapon. Most historians believe Oak Ridge’s contributions helped to end the world’s most devastating war and to prevent huge additional losses of American and Japanese lives.

Most Oak Ridgers, like me, are proud of this history and recognize that the wartime project is partly responsible for making Oak Ridge what it is today. And we recognize the redeeming value of nuclear energy research, to which ORNL has contributed: electrical power, space exploration, medical diagnosis and treatment.

As I think about balancing the risks inherent in possessing and not having nuclear weapons, I find comfort and relief for my conflicted state of mind in quotes by the Israeli historian Yuval Noah Harari. In his 2015 best-selling book “Sapiens: A Brief History of Humankind,” he wrote, “Never before has peace been so prevalent that people could not even imagine war.” He pointed out that while “the price of war has gone up dramatically, its profits have declined,” suggesting that World War III might never happen.

“The Nobel Peace Prize to end all peace prizes should have been given to Robert Oppenheimer and his fellow architects of the atomic bomb,” Harari continued. “Nuclear weapons have turned war between superpowers into collective suicide, and made it impossible to seek world domination by force of arms.”

Carolyn Krause is a longtime Oak Ridger who writes freelance articles for The Oak Ridger.


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European Leadership Network (London, U.K.)

An Offer Postponed: Berlin’s Silence on Macron’s Deterrence Thinking

By Julia Berghofer

Aug. 25, 2020

The question of a European dimension to nuclear deterrence has been brought back into the spotlight recently due to growing tensions in the transatlantic relationship, significant shifts in European security architecture following Russian aggressions during the Ukraine crisis, and the ongoing debate about European strategic autonomy. In President Macron’s speech delivered on 7 February 2020, on the role of French nuclear deterrence in the context of European security and defence, a new door was created for a possible nuclear dialogue with European partners. While the key to that door most likely lies in Berlin, no one there seems inclined to pick it up.

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Arguably, President Macron’s renewed offer to lead a dialogue on nuclear deterrence in Europe didn’t come at the right time. Shortly after his February speech, the ongoing coronavirus-pandemic hit Europe hard; it silenced foreign and security policy debates for months. For Berlin, indecisive on how to respond to the French statement, this was likely a blessing in disguise. French presidents’ nuclear speeches have rarely been met with much enthusiasm by German decision-makers and commentators. Neither the offer to discuss the option of a dissuasion élargie (extended deterrence) that had been floating since 1976 nor the idea of a dissuasion concertée (concerted deterrence), which was brought forward by then-foreign minister Alain Juppé in 1995 and renewed by president Chirac in 2006, were able to capture Berlin’s outspoken interest.

President Macron, however, knows that he must act carefully when reaching out to the Germans, especially if he were to recall how Nicolas Sarkozy carelessly raised nuclear issues in his 2007 visit. So, this time Macron and his speechwriters tried to ensure that ‘right President’ sent a carefully drafted message at the ‘right time.’ In his speech, Macron invited willing European partners to engage in a strategic dialogue “on the role played by France’s nuclear deterrence in our collective security”, this is a low-hanging fruit and a natural starter. He then went on to mention the possibility for “European partners which are willing to walk the road” to “be associated with the exercises of French deterrence forces”. This last proposal, as Benjamin Hautecouverture and Emmanuelle Maitre note, is a phrase that allows respect for the differences in sensibilities regarding nuclear matters in Europe. From a French standpoint, an association of European partners with French nuclear exercises are valuable for they could support the development of a “true strategic culture among Europeans” as Macron put it.

There has been no clear answer from Germany. Moreover, there’s no indication that Germany would want to be associated with French nuclear exercises. At the Munich Security Conference 2020 German Foreign Minister Heiko Maas admitted there was a need for strategic dialogue on the issue of “building a European Security and Defence Union – as a strong, European pillar of NATO”. In an interview with Deutsche Welle, he went on to emphasize that Germany would like to engage in such a dialogue mainly with the goal of bolstering the European side of NATO. While the French tend to point out that a strategic dialogue on the possible role of the force de frappe in the protection of Europe can take place alongside NATO’s nuclear strategy, Germany seems concerned that the slightest move in that direction could be interpreted as an attempt to undermine NATO. In that sense, Defence Minister Annegret Kramp-Karrenbauer’s answer was equally cautious. While she said in an interview with ZDF that one would need to discuss Macron’s proposal to clarify what exactly the President imagines, she added, “we have been protected during the past decades by the nuclear umbrella as we know it and I don’t see a reason why we should abandon this principally”.

Paris understands very well that pushing Germany for a decision would be pointless. Their strategy then is to make clear that France supports NATO’s nuclear sharing arrangements and Germany’s participation therein while confirming its stance that Paris will continue to stay away from the Nuclear Planning Group (NPG). While some officials in Berlin doubt whether France’s stated support for NATO’s nuclear sharing is more than lip service – designed to obfuscate anti-American sentiments – genuine support makes sense for France. In an educational sense, it is easier to build up a “strategic culture” in the long run with a dual-capable aircraft (DCA) country than with a Germany that turns its back on an active role in any form of nuclear deterrence. The French also know that Germany finds itself in a quandary between an attempt to maintain transatlantic relations in the best shape possible – including NATO’s nuclear sharing arrangement – while facing an increasingly hostile and unpredictable US administration that doesn’t stop confronting Berlin. At the same time, and at the opposite end of the spectrum, politicians from the centre-left are calling for a withdrawal of US nuclear devices from Germany as a response to the shrinking US commitment to European security and as a conciliatory step vis-à-vis Russia (although the Kremlin
would probably not care much about a decision that was unilaterally taken by Germany because this wouldn’t have any impact on NATO-Russia relations). Both camps are powerful actors in the public debate and neither have the appetite now for entering into a dialogue with France about the future of European deterrence. While the die-hard transatlanticists fear that any dialogue could damage relations with the US, the abolitionists don’t see any benefit in consulting another nuclear power when they’re aiming for a nuclear-weapons-free Europe. And there are justified concerns that, if Germany wants to get rid of US nuclear devices, they could be installed in Poland instead.

Although there are individual calls coming from the expert community and the political spectrum (such as Deputy Chairman of the CDU/CSU parliamentary group Johann Wadephul's statement earlier this year, and former leaders like General (ret.) Klaus Naumann and former Ambassador to the US Wolfgang Ischinger) to rethink Germany’s position and take into account the changing security landscape, these calls – although gaining occasional attention – are unpopular. But more problematic than the fact that these considerations are seldom put on the table is the way in which parts of the expert community tend to muse about the nature of an independent European deterrence: Some have gone as far as to call for a German bomb, while others (like Wadephul) wish to see the force de frappe under the control of a single EU or NATO entity one day, which is a highly unrealistic idea. A second DCA wing, something that Klaus Naumann considered, wouldn't be more than a mirroring of what NATO already does. Others toy with the idea of supporting the mission of the nuclear-capable Rafale-M fighter bomber on the Charles de Gaulle aircraft carrier with Suppression of Enemy Air Defences (SEAD)-capable F-18 fighters, as well as equipping a new European aircraft carrier with F-18 and Rafale aircraft. Although in theory these are interesting options, neither is more than “Zukunftsmusik” (visions of the future) as a French expert puts it.

There also seems to be deep mistrust ingrained in the minds of many analysts and policymakers in Berlin. Offers by France to lead a nuclear dialogue with Berlin are regularly interpreted by some as a French attempt to either undermine transatlantic ties or to seek another funding source for the force de frappe. Indeed, if NATO’s nuclear sharing was to be replaced by an extended French deterrence, French experts note that this would require a qualitative and quantitative enhancement (more weapons and more advanced equipment), and a financial burden shared by other European partners would be obligatory. This again is a premature consideration which makes little sense in the absence of bespoke dialogue which would bring to light which areas, and to what extent, Paris is willing to move and accept compromises, and in which areas it is not. As the senior advisor for Europe at IISS François Heisbourg noted in 2019, with regard to military operations, a “grand compromise” along the lines of shared risk-taking and decision-making would be necessary. “Paris may be more prepared for it than officials in Berlin may think. The same remark applies to the field of nuclear deterrence”, he added.

Macron’s speech in February created a tangible option for leading a meaningful dialogue on European deterrence, but at the moment there are no encouraging signals coming from Berlin. While it is understandable that there are other, pandemic-related matters that take priority at present, Germany has to invest more resources in strategic thinking about the future of European defence and security, including the future of nuclear deterrence in the mid- and long-term. While large parts of the expert community come up with extreme positions, meandering between ‘all or nothing’, there is a lack of considered thinking on the options in between, such as the proposed association with French nuclear exercises or a rotation of non-nuclear equipped Rafale fighter bombers as suggested by Bruno Tertrais in 2018. This also includes being realistic about the “damage” that could be done to transatlantic relations (especially if pursued at the same time as a project such as Nord Stream 2 which might be a greater concern not only for the US but for some European partners as well). Entering into a nuclear dialogue and hearing what Paris has to offer
without hiding behind the assertion of French anti-American sentiments would be a necessary first step.

The opinions articulated above represent the views of the author(s) and do not necessarily reflect the position of the European Leadership Network or any of its members. The ELN aims to encourage debates that will help develop Europe’s capacity to address the pressing foreign, defence, and security policy challenges of our time.

https://www.europeanleadershipnetwork.org/commentary/an-offer-postponed-berlins-silence-on-macrons-deterrence-thinking/

Arms Control Wonk

Norm Building, National Sovereignty and Arms Control

By Michael Krepon

Aug. 24, 2020

Quote of the week:

“How can we account for our present situation unless we believe that men high in this government are concerting to deliver us to disaster? This must be the product of a great conspiracy, a conspiracy on a scale so immense as to dwarf any previous such venture in the history of man. A conspiracy of infamy so black that, when it is finally exposed, its principals shall be forever deserving of the maledictions of all honest men.” — Senator Joseph McCarthy’s attack on former Secretary of State George Marshall, 1951

If the norms of responsible rhetoric are trashed, they can be rehabilitated at the ballot box. If the norms of responsible behavior among states possessing nuclear weapons are weak, remedies are much harder.

A crucial international norm is respect for the territorial integrity and national sovereignty of states. When this norm is broken — especially when it is broken by a state possessing nuclear weapons — several remedies are called for. One is economic punishment for the norm breaker. Another is nonrecognition of territorial gains by military means. Defense ties with friends and allies need to be strengthened. Another is the resumption of proper channels of communication and negotiations to reduce nuclear danger.

Arm control takes a hit when the territorial integrity and national sovereignty of a state are trampled. Arms control is revived because competition between states possessing nuclear weapons in endemic in crisis-prone regions. These crises are inherently dangerous. Competing states that possess nuclear weapons need guardrails for their competition.

Arms control provides the guardrails. It’s possible to walk and chew gum at the same time. We can punish a state that disrespects the national sovereignty and territorial integrity of another while strengthening ties with friends and neighbors. We can strengthen deterrence, but deterrence without reassurance is dangerous. We therefore negotiate with the norm breaker to seek common ground reducing nuclear danger.

Strategic arms control has been tacitly and explicitly linked to the principles of respecting the territorial integrity and national sovereignty of states, as well as on the peaceful settlement of disputes, especially where territorial boundaries are contested.
The first effort to establish these “agreed principles” was explicitly designed to facilitate disarmament measures. This initiative came at the same time as the creation of the Arms Control and Disarmament Agency — a linkage that was not accidental. The Kennedy administration official responsible for both was John J. McCloy. McCloy worked with Arthur Dean, another veteran Cold War negotiator, to hammer out this language with Valerian Zorin, a high-ranking Soviet Foreign Ministry official. The McCloy-Zorin “Joint Statement of Agreed Principles for Disarmament Negotiations,” was released in September 1961.

Thirteen months after the McCloy-Zorin agreement was announced, Zorin found himself in the awkward position of defending the placement of Soviet missiles in Cuba as the Soviet Union’s Ambassador to the United Nations. Still, Kennedy persisted with negotiations after the crisis was over. The result was a treaty banning nuclear tests everywhere but underground.

These principles were essentially repeated in a statement signed by Richard Nixon and Leonid Brezhnev at the Moscow summit in May 1972 that produced the SALT I Interim Agreement and the Anti-Ballistic Missile Treaty. Raymond Garthoff called these principles “a charter for détente.”

The 1972 Nixon-Brezhnev Basic Principles Agreement also foundered quickly. During the 1973 Middle East War, Moscow signaled support for friendly Arab states by its naval presence in the eastern Mediterranean, and Washington signaled its support for Israel by raising the alert rate of its strategic forces. Still, Nixon persisted. He sought to cap deployed forces at Vladivostok and signed the Threshold Test Ban Treaty.

The next major milestone for reasserting these principles was the Helsinki Final Act in 1975 that seemingly codified the East-West divide in Europe. President Gerald Ford was flayed for signing it and for selling out the captive nations of Eastern Europe by critics of détente, led by Senator Henry Jackson and Ford’s Republican primary opponent, Ronald Reagan.

As it happened, one of the supporters of the Helsinki Final Act was Mikhail Gorbachev, and in a thoroughly unexpected way, the Helsinki Final Act contributed to the independence of captive nations and peoples.

These principles applied not just to Europe; they were universal in character. The Soviet Union thoroughly trashed the Helsinki Accord’s principles when the Kremlin’s old guard decided to send Soviet troops into Afghanistan to save a friendly but deteriorating regime.

Prospects for the Senate’s consent to ratify SALT II were troubled before the invasion of Afghanistan and were nullified after it. Similarly, prospects for new arms control and reduction accords ground to a halt in 2014 when Vladimir Putin annexed Crimea and conducted hybrid warfare in eastern Ukraine.

Putin’s actions were in direct contravention of the 1994 Budapest Memorandum, signed by Presidents Bill Clinton and Boris Yeltsin, as well as British Prime Minister John Major. The Budapest Memorandum committed Russia to “respect the independence and sovereignty and existing borders of Ukraine” and to “refrain from the threat or use of force” against Ukraine. In response to NATO expansion and another popular revolution threatening to remove Ukraine from Russia’s sphere of influence, Putin disregarded Yeltsin’s pledge.

The United States and many others responded with sanctions. Constructive diplomacy took a short hiatus, just as was the case after the Soviet invasion of Afghanistan. Guiding principles can withstand jockeying for advantage, but not Moscow’s military campaigns across borders.

Competition to seek advantage and to avoid disadvantage is endemic to international relations. This competition makes arms control more, not less, useful. National leaders pursue arms control because a strategic competition without guardrails is too dangerous.
Ronald Reagan resumed arms control talks with Moscow within two years after the Soviet invasion of Afghanistan. Likewise, the Trump administration resumed talks with Moscow after Moscow trashed Ukrainian sovereignty.

Reagan proved that it was possible to negotiate with and penalize Moscow at one and the same time. Trump's relationship with Moscow has been deeply disturbing and entirely different from any of his predecessors. His successor will revert to past practice, negotiating to reduce nuclear danger while increasing the costs to Moscow for disregarding the national sovereignty and territorial integrity of its neighbor.


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War on the Rocks (Washington, D.C.)

Spying on the Nazi and Soviet Bombs

By Timothy P. McDonnell

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Editor's Note: This is an excerpt from “Book Review Roundtable: Nuclear Spies” from our sister publication, the Texas National Security Review. Be sure to check out the full roundtable.


Since 2013, Chinese President Xi Jinping has repeatedly emphasized how important quantum computing will be in China's future. Quantum technology, he declared in 2016, could bring about “a new industrial revolution.” Speaking on artificial intelligence, Russian President Vladimir Putin averred in 2017 that “the one who becomes the leader in this sphere will be the ruler of the world.” Unwilling to be left behind by its rivals, the United States has prioritized research in these cutting-edge fields as well. Military science and technological competition among the United States, Russia, and China in the foreground barely conceals a related intelligence competition being waged behind the scenes. Each side collects intelligence on its rivals' scientists, universities, and laboratories, attempting to analyze their progress in order to shape research and policy. Uncertainty plagues this process, as participants face basic questions: How far ahead or behind are we? What does the adversary know that we do not? Are there opportunities to gain advantage through sabotage or misinformation? And how does this bear on the future of international politics?

This is the realm of scientific intelligence. Within this domain, all of the usual challenges of the spy trade — and there are many — are compounded by the fact that the topics of interest are at the very frontiers of human knowledge. As Samuel Goudsmit, a key figure in Vince Houghton’s latest book, The Nuclear Spies, observed, “a Mata Hari with a Ph.D. in physics is rare, even in detective fiction.” Houghton’s book contributes to our understanding of scientific intelligence by explaining how it first emerged in the United States — as atomic intelligence — during World War II and the early Cold War.

The Nuclear Spies centers on two key early cases of atomic intelligence, one a success and the other a failure. During World War II, American intelligence ultimately concluded (correctly) that the Germans were well behind in the race to build an atomic bomb. Yet despite this initial success, only five years later the postwar U.S. intelligence apparatus failed to predict the first Soviet atomic bomb test in August 1949. The United States lost its atomic monopoly with no warning at all from its new
intelligence establishment. This is the puzzle that drives Houghton's book. "Considering how successfully the United States conducted the atomic intelligence effort against the Germans in the Second World War," he asks, "why was the U.S. government unable to create an effective atomic intelligence apparatus to monitor Soviet scientific and nuclear capabilities?"

The answer, Houghton argues, lies in the organization of intelligence. Because American fear of German technological prowess was so great, he writes, Manhattan Project chief Lt. Gen. Leslie Groves was permitted to build and operate a centralized intelligence system within the atomic bomb program. This centralized approach to atomic intelligence was “the key component in the success of the American effort against the German atomic bomb program.” But as Houghton claims, “the U.S. centralized atomic intelligence system was dismantled after the Second World War.” “The resulting atomic intelligence organization,” he argues, “failed in all three aspects of the intelligence cycle ... As a result, both military and civilian policymakers were given the impression that the Soviet atomic program was not of immediate concern.” Centralized scientific intelligence, Houghton posits, is superior scientific intelligence.

The Nuclear Spies is an engaging, well-researched volume that provides a good overview of early U.S. atomic intelligence. The writing is clear and the stories are compelling, making The Nuclear Spies an interesting and accessible overview of a complex and important topic. A significant shortcoming of the book, however, is that the evidence Houghton marshals does not substantiate his argument on how scientific intelligence should be organized. Regardless, the book provides a useful narrative of important episodes in early U.S. nuclear and intelligence history, while also hinting at larger themes that have played an enduring role in U.S. nuclear weapons policy.

To Centralize, or Not to Centralize?

Houghton describes the early history of U.S. atomic intelligence in the six chapters that comprise the core of the book.

Chapters 1–3 center on U.S. efforts to assess the German atomic bomb program. Late-1930s German advances in fission research, as well as the Nazi acquisition of key European research labs and resources through conquest and "the aura of German science," all contributed to the belief that the Nazi regime was probably hard at work developing this new and powerful weapon. For many American scientists, “the thought of German superiority drove them almost to panic.” Consequently, they successfully lobbied Vannevar Bush, the chairman of the Office of Scientific Research and Development, to direct the establishment of the United States' first scientific intelligence program in the summer of 1942.

This novel intelligence effort faltered until September 1943, when it was subsumed within the Manhattan Project under the leadership of Groves, and eventually evolved into the famous Alsos Mission. Advancing just behind American invasion forces, Alsos teams of scientists and soldiers captured German physicists and facilities to advance U.S. knowledge of the presumed German atomic program.

Chapter 4 describes the culmination of the Alsos Mission. After concluding that Nazi Germany was not in fact ahead of the United States in nuclear research, the mission's main focus became preventing German scientific facilities, resources, and know-how from falling into Soviet Premier Joseph Stalin’s hands. This marked the end of Washington’s fears of a German atomic program, but the beginning of its concerns about future Soviet nuclear developments. Tales of derring-do are woven through an excellent description of key personalities making tough choices. The perennial issue was determining how to collect aggressively without inadvertently revealing the United States’ own progress towards the bomb to either the Germans or the Soviets. Readable, well-researched, and nuanced, Houghton's early chapters provide a fresh — and refreshing — treatment
of events that many scholars of nuclear and intelligence issues probably think they already know well.

From here, Houghton’s focus shifts towards the failure of U.S. atomic intelligence in the Soviet case. He describes massive postwar changes in the organization of American scientific intelligence that took place during the early Cold War. The net result was that the formerly centralized atomic intelligence system became diffuse. Ultimately, several factors — widespread belief in the backwardness of Soviet science, the perceived challenge of innovation in authoritarian regimes, and the basic problem of accessing relevant information — all played a role in the intelligence failure. Even so, the key culprit in Houghton’s telling was the shift from a centralized to a decentralized organizational structure for U.S. atomic intelligence.

Here lies the key weakness in the argument presented in the book’s conclusion. While Houghton claims that the organization of U.S. intelligence made the difference between success in the German case and failure in the Soviet case, the evidence he presents suggests otherwise. The United States was able to conclude confidently that Germany was not building the bomb only after it gained access to German scientists and facilities through invasion. In contrast, whatever beliefs senior American officials may have had about the weakness of Soviet science, the fact was that Stalin’s regime was an immensely tough target for U.S. intelligence. Opportunities to interrogate scientists and explore key labs that were available in the German case did not exist in the Soviet case. Thus, whatever other factors may have been involved, the simple ability to access relevant information — not the organization of intelligence — seems to explain much of the variation in outcomes that motivates Houghton’s study.

Origin Stories

Despite this shortcoming, Houghton makes a number of major contributions to our understanding of early American nuclear history. In particular, The Nuclear Spies touches on two themes that would develop into enduring features of U.S. nuclear weapons policy, though they were still nascent in the pre-1949 period covered by Houghton.

The first is Houghton’s account of the earliest examples of U.S. counterproliferation policy in action. The United States was determined to stymie or delay any efforts by either enemy Hitler or wartime ally Stalin to develop the bomb. Gripping illustrations abound. In December 1942, for instance, American atomic scientists devised “an elaborate and ruthless plan” to kidnap German physicist Werner Heisenberg. Norway’s stock of heavy water and the Norsk Hydro plant that produced it were the target of three separate commando raids, as well as an attack by 140 B-17 bombers, between October 1942 and February 1944. Additional bombing raids on German atomic targets were undertaken in part because “[t]he killing of scientific personnel employed therein would be particularly advantageous.”

Later, as the source of U.S. fears shifted from Germany to the Soviet Union, Houghton recounts the story of Operation Harborage. Led by a reinforced corps comprised of two armored divisions and an airborne division, Alsos Mission members swept in front of advancing French forces to capture German atomic facilities and scientists in southern France. Because leading French physicist Frederic Joliot-Curie held communist sympathies, the goal of the operation was to ensure “that nothing that might be of interest to the Russians should ever be allowed to fall into French hands.”

In subsequent decades, American efforts to slow, halt, and reverse the spread of nuclear weapons would become a durable element of U.S. grand strategy. Although this point and its long-term implications are not developed in the book, Houghton reveals that the roots of this policy run deep. The United States, he shows, embraced the business of counterproliferation even before it had succeeded in building its first atomic weapon.
The second major theme that The Nuclear Spies highlights is the selective linkage between atomic intelligence inputs and U.S. nuclear policy choices. Frequently, the United States has proactively girded itself against threats that have not yet emerged. Occasionally, it has restrained itself despite evidence of growing adversary nuclear capabilities.

For example, according to Houghton, between the late 1930s and March 1945, fear of a German bomb was the driving factor behind America’s own atomic research and development program. Yet even after the Alsos Mission proved that the Nazis were well behind the Americans in atomic development, work on the bomb continued apace. News that Germany was not racing towards the bomb did not alter Washington’s determination to rapidly complete the Manhattan Project and continue growing its supply of fissile material. All that changed was the underlying policy rationale. With Germany nearing defeat, the possibility that the Soviet allies could someday become adversaries quickly became the central concern driving the ongoing development and production of U.S. nuclear weapons.

A similar pattern of threat anticipation was evident in the lead-up to President Harry Truman’s January 1950 decision to pursue the development of the hydrogen bomb. On July 1, 1949, nearly two months prior to Moscow’s first atomic test, the Central Intelligence Agency estimated that the Soviet Union could not build a bomb before mid-1951. That same month, Truman commissioned a National Security Council study on the desirability of a “proposed acceleration of the atomic energy program.” When the report was completed in October, its authors had reached the unanimous conclusion that accelerating atomic development would be militarily useful, technically feasible, and economically beneficial.

Militarily, the Joint Chiefs of Staff believed that “this accelerated program will constitute a net improvement in our military posture both as a deterrent to war, and as preparation for war should it prove unavoidable.” Diplomatically, the committee argued that “in the light of the North Atlantic Pact ... it appears likely that Western Europe would consider an expansion of our program not only a desirable development but also positive evidence of our intent to increase our military strength for the security of all.” From a technical and financial perspective, the Atomic Energy Commission concluded that “it is probable that atomic bombs may be employed economically in lieu of conventional bombs against relatively small targets.” Crucially, the report’s authors also concluded that “the recent atomic explosion in the USSR increases the urgency with which this proposed program should be undertaken and executed, but this acceleration should be clearly understood to be a projection of previous plans based on our own capabilities, rather than as a counter-development to the Soviet explosion.” For Truman himself, the fact that the Soviet Union might someday be able to build a hydrogen bomb seemed especially important. Thus, many forces augured towards Truman’s January 1950 decision to develop the hydrogen bomb. But the recent Soviet atomic test and related intelligence failure were not among them.

This sort of fickle relationship between intelligence, extant threats, and American nuclear policy choices would periodically reemerge in subsequent decades. Throughout the mid- and late-1960s, President Lyndon Johnson and especially Defense Secretary Robert McNamara chose to limit the growth of the U.S. nuclear arsenal despite intelligence estimates which predicted Soviet movement towards numerical parity. In the 1990s, following the collapse of its Soviet nuclear rival, the United States began posturing its nuclear forces to counter an entirely new threat: nuclear-armed rogue states. While senior officials feared that rogue dictators would increasingly challenge American interests around the globe, only one such threat — North Korea — has actually emerged over the past thirty years.

The implication is significant and deserves to be explored further. Major choices about nuclear weapons policy are made at the highest levels because of how they impact what the United States
can do and because of the signals they send about what the country might do. Adversaries observe U.S. nuclear policy choices and calculate their own responses. Acting in anticipation of threats may inspire foes to balance against the United States, while exercising restraint despite intelligence warning may suggest weakness. Thus, with his detailed account of the relationship between intelligence inputs and U.S. nuclear policy choices at the dawn of the nuclear age, Houghton has surfaced an enduring issue of fundamental importance.

Conclusion

The Nuclear Spies is a valuable book on the early history of U.S. atomic intelligence. Particularly strong in its discussion of World War II, the Manhattan Project, and the Alsos Mission, it lends texture and nuance to episodes that many readers of this review will know in passing. Its primary weakness lies in its conclusion about the value of centralized intelligence. The book makes its most significant contribution by unearthing the roots of what would become important threads in the subsequent history of U.S. nuclear policy. The persistence of American efforts to inhibit proliferation, including through force, as well as the uneven relationship between intelligence inputs and policy outcomes are both important. By describing the origins of these two recurring themes, Vince Houghton has made a valuable contribution to our understanding of the history of U.S. nuclear weapons policy.

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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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