



UNITED STATES AIR FORCE
CENTER FOR STRATEGIC
DETERRENCE STUDIES

NEWS AND ANALYSIS

Issue 1426
17 July 2020

Feature Report

“Offense–Defense Integration for Missile Defeat”. Published by CSIS; July 2020

<https://www.csis.org/analysis/offense-defense-integration-missile-defeat>

A central theme of the 2019 Missile Defense Review is the desirability of integrating offensive forces with active and passive defenses. But what would the realization of such a comprehensive and integrated approach look like, and what would it require? Despite broad and sustained interest, little progress has been made in the actual integration of offenses with air and missile defenses, or even clearly elucidating and defining the concept. Thorough implementation of offense-defense integration for countering missile threats would touch almost every aspect of the U.S. military, including policy, doctrine, organization, training, materiel, and personnel. While desirable, complete integration down to the tactical level will be technically and operationally difficult to achieve. Even where possible, its realization will be neither rapid nor easy.

TABLE OF CONTENTS

NUCLEAR WEAPONS AND DETERRENCE

- [Presidential Message on the 75th Anniversary of the Trinity Nuclear Test](#) (White House)
Seventy-five years ago today, on a rainy morning in the Jornada del Muerto desert of New Mexico, the United States ushered in the nuclear age with the detonation of the world's first nuclear explosive device—an event code-named “Trinity.”
- [New Nuclear Warhead Funding Would Be Blocked by House Appropriators](#) (Defense News)
The National Nuclear Security Administration, a semiautonomous agency inside the Department of Energy that tests and produces American nuclear warheads, is seeking \$53 million for early development of the W93.
- [Ground Broken for North Dakota's First 'Major Military' Installation 65 Years Ago](#) (Minot Daily News)
The 5th Bomb Wing has B-52H Stratofortresses and the 91st Missile Wing has Minuteman III intercontinental ballistic missiles in the Minot missile field. The bomb wing and missile wing are part of Air Force Global Strike Command.
- [Quest for Sea-Based Nuclear Deterrence: Comparative Analysis Of India And Pakistan Nuclear Capabilities](#) (Eurasia Review)
Indian and Pakistan both have a strategic and central position in the Indian Ocean Region, especially their interest in the sea base nuclear deterrence.
- [Jan Eliasberg: Fiction as a Window into the Ethics of Testing the Bomb](#) (Bulletin of the Atomic Scientists)
Meitner was one of the co-discoverers of nuclear fission but did not share in the 1944 Nobel Prize in Chemistry awarded exclusively to her colleague Otto Hahn.

US COUNTER-WMD

- [Boeing Awarded \\$150 Million Contract Modification for Huntsville-managed Missile Defense Program](#) (Yellowhammer News)
GMD is the only defense program capable of protecting the entire U.S. homeland, including Alaska and Hawaii, against long-range ballistic missile attacks.
- [Amid Pandemic, Pentagon Would Cut 'Chem-bio' Protections](#) (Roll Call)
Lost in the fine print and unmentioned in the press was a proposed drop in funding for research and procurement initiatives in the Chemical and Biological Defense Program — from \$1.4 billion this fiscal year to \$1.2 billion.

US ARMS CONTROL

- [Researchers: North Korea Developing Arsenal to Evade Missile Defenses](#) (UPI)
Pyongyang's recent tests of short- and medium-range missiles and rocket launch systems demonstrate increasingly sophisticated precision, maneuverability and reliability, the report said.
- [Rouhani Warns against Extension of Iran Arms Embargo](#) (Al-Monitor)
The Islamic Republic has been working relentlessly to counterbalance the US push by seeking support from the remaining JCPOA signatories, China and Russia in particular.
- [Key House Democrats Want to Lock in New START Weapons Limits](#) (Defense News)
The action came days after Russian Foreign Minister Sergey Lavrov warned he's not very optimistic about

prospects for an extension because of Washington's focus on making China sign onto the pact.

COMMENTARY

- [Heroes of Arms Control: Thomas Schelling](#) (Arms Control Wonk)
“Among the brainiacs who conceptualized the field of arms control, one stands out: Thomas C. Schelling.”
- [To Deter War with China, Defend Guam](#) (National Interest)
“This tiny but mighty western Pacific island U.S. territory—part of our homeland—is six thousand miles from the coast of California, is indispensable to the United States.”
- [Russia's Basic Principles and the Cyber-Nuclear Nexus](#) (European Leadership Network)
“Without diving deep into questions of nuclear deterrence, and the roles of nuclear and non-nuclear capabilities, it is important to take note of the conditions set out in the Basic Principles document that might lead to nuclear use by Russia.”

NUCLEAR WEAPONS AND DETERRENCE

White House (Washington, D.C.)

Presidential Message on the 75th Anniversary of the Trinity Nuclear Test

By White House

July 16, 2020

Seventy-five years ago today, on a rainy morning in the Jornada del Muerto desert of New Mexico, the United States ushered in the nuclear age with the detonation of the world's first nuclear explosive device—an event code-named “Trinity.” This remarkable feat of engineering and scientific ingenuity was the culmination of the Manhattan Project, which helped end World War II and launch an unprecedented era of global stability, scientific innovation, and economic prosperity.

After Trinity, nuclear testing conducted by the United States laid the groundwork to maintain our stockpile and further our ability to understand and prevent nuclear threats around the world. Since 1992, we have observed a moratorium on such testing and have relied on the scientific and technological expertise of our weapons complex to ensure our deterrent is safe, secure, and effective. True to our word, we maintain our moratorium, although Russia has conducted nuclear weapons experiments that produce nuclear yield, and despite concerns that China has done the same.

Our nuclear deterrent has also greatly benefitted our Nation and our allies around the world, even as they have adhered to their nonproliferation commitments. Nuclear deterrence and nonproliferation work together to further global security. Our nuclear weapons continue to underwrite American national security and are the backstop of our national defense. Having robust and diverse capabilities constrains global nuclear proliferation, deters adversaries, and assures allies and partners that rely upon American nuclear deterrence as a key component of their security.

In order to continue protecting America's vital security interests, I have directed my Administration to revitalize and modernize America's nuclear security complex to preserve a credible deterrent. We are investing in the capability to produce plutonium pits to support our stockpile needs and to improve the infrastructure of the weapons ecosystem. We continue to advance the Ground Based Strategic Deterrent, the B-21 Bomber, the Long Range Standoff Weapon, and the Columbia-class submarine, all of which help ensure that we can deter aggression and preserve peace for future generations.

At the start of my Administration, I also resolved to begin a new era of arms control that moves beyond the bilateral treaties of the Cold War. The arms control of the future must include measures that advance the security of America and our allies, are verifiable and enforceable, and involve partners that comply responsibly with their obligations. I call, once again, on Russia and China to join us in these efforts, working together to make the world safer and to stave off a new arms race.

Today, on the 75th anniversary of the Trinity test, we reflect on the incredible tradition of ingenuity and innovation that has defined our Nation for generations. We also recognize the dedication and skill of the men and women of the current American nuclear enterprise, and we thank them for their contributions to our national security and the strength of our deterrent capabilities.

<https://www.whitehouse.gov/briefings-statements/presidential-message-75th-anniversary-trinity-nuclear-test/>

[Return to top](#)

Defense News (Washington, D.C.)

New Nuclear Warhead Funding Would Be Blocked by House Appropriators

By Aaron Mehta

July 14, 2020

WASHINGTON — Energy and water appropriators voted Monday to block funding sought by the Trump administration to develop a new submarine-launched nuclear warhead design, known as the W93.

The members of the House Energy and Water Development, and Related Agencies Subcommittee voted in favor of language saying that “no funding” may be used on the new warhead design, which the Pentagon hopes to have fielded by 2040. The language was adopted as part of the overall bill that passed by a 30-21 vote Monday.

The National Nuclear Security Administration, a semiautonomous agency inside the Department of Energy that tests and produces American nuclear warheads, is seeking \$53 million for early development of the W93.

Defense appropriators in the House have already approved the \$32 million sought by the Pentagon to start early design work on the aeroshell of the W93. While NNSA has oversight on warheads, the delivery mechanisms come out of Department of Defense funding.

The appropriators raised concerns that the NNSA “has provided limited details on why starting Phase 1 Concept Assessment is needed in fiscal year 2021, the drivers for this decision, or how such a decision is likely to impact retirement of any of the Navy’s existing strategic systems.”

“The NNSA proposed to manage the W93 modernization activity using the joint Department of Energy-Department of Defense nuclear weapons lifecycle process, but the Committee is concerned that this process is out of date and does not include current best practices,” the appropriators added. “Until such questions and concerns are adequately addressed, the Committee will not consider funding for this activity.”

While the \$53 million in NNSA funds is not a major figure, any delay in the development of the W93 could push the expected deployment not just for America, but for the United Kingdom, which plans to buy a version of the warhead. And there is speculation in the nuclear community that former Vice President Joe Biden, should he win the presidency in November’s election, would look to cancel the nascent program.

In February, a senior defense official told Defense News that the W93 would be based on existing designs, and likely be somewhere between the W88 and W76 in size — the two other submarine-launched warheads. The official said the W93 is to come online around the same time the other two systems are hitting dangerous ages, but opponents say despite this, the new system is another step in a nuclear arms race.

The House Appropriations Committee’s bill is not the last word, and Republicans, who control the Senate and the White House, will negotiate over the final numbers.

In addition to blocking the W93 funds, the committee language includes a requirement to brief Congress within 60 days of the enactment of the bill “on the benefits, drawbacks, and implications of extending the need date of the first and last production unit” of the W80-4 warhead by one year,

a sign committee members are concerned about the timeline for that system, planned for use with air-launched cruise missiles.

The bill also contains language barring the use of appropriations funding that would involve “working through the Nuclear Weapons Council to guide, advise, assist, develop or execute a budget for the National Nuclear Security Administration,” a direct shot at language in the Senate Armed Services Committee bill that would give the Pentagon-led Nuclear Weapons Council greater say in how NNSA develops its budget.

Members of the subcommittee and the Department of Energy have pushed back on that proposal on the basis it would give the DoD control over how NNSA spends its funds, even over objections from the energy secretary. But Rep. Mike Simpson, R-Idaho, warned during Monday’s markup hearing that there may be unintended consequences in the committee’s language.

“I support what they are intending to do with this language. I support the current structure, as an important component of maintaining civilian control over the nuclear weapons program. But as drafted, Section 309 likely would upend current law with respect to the functioning of the Nuclear Weapons Council,” Simpson said.

<https://www.defensenews.com/smr/nuclear-arsenal/2020/07/13/new-nuclear-warhead-funding-blocked-by-house-appropriators/>

[Return to top](#)

Minot Daily News (Minot, N.D.)

Ground Broken for North Dakota’s First ‘Major Military’ Installation 65 Years Ago

By Eloise Ogden

July 12, 2020

MINOT AIR FORCE BASE – Sixty-five years go on Sunday, July 12, 1955, a ceremony was held north of Minot to break ground to officially launch construction of a U.S. Air Force jet interceptor base.

Local people along with Air Force and U.S. Army Corps of Engineers leaders gathered on the hot, sunny day for the afternoon ceremony on land formerly farmed by Ted Abresch, The Minot Daily News reported. Earthmoving machines to be used in construction of the base would replace farm tractors used on the land.

The base was slated to be in full operation by the spring of 1957.

Brig. Gen. James O. Guthrie, commanding general of the 29th Air Division from Great Falls, Mont., told the group the base would play an important part in the air defense net across the northern border of the United States and it would be the “first major military installation” in North Dakota.

Only one contract for actual work on the site had been awarded when the groundbreaking was held, according to Col. Thomas L. Hayes Jr., Omaha district engineer for the Corps of Engineers who was in charge of the base construction program. He said Peter Kiewit Sons Co. of Omaha had been awarded a \$3.6 million award for construction of a runway, taxiway, parking aprons and jet fuel storage.

However, Hayes disclosed more than \$20 million worth of work at the base site had been designed or was under design and, if funds became available, the Corps would plan to call for bids to be opened in the coming August for the construction of 11 buildings plus roads and utilities. He said more contracts would be awarded if money was sufficient.

The August projected contract would be to construct hangars, operations building, four barracks, mess hall and other structures along with roads and utilities, Hayes said.

Lt. Col. Theodore Roe, at the time in Puerto Rico, would be coming to Minot in August for the duties of area engineer for the Omaha office of the Corps.

Dr. A.L. Cameron, on behalf of the local Chamber, told those gathered at the site “we are gratified beyond measure now to witness this outstanding event.”

“In our country’s build-up of air power, we are proud to have our city and community become an important site and link along the northern border,” Cameron added.

Cameron said the Chamber and community welcomed the opportunity which the base affords “to reveal our spirit of loyalty in every way possible by timely and unstinted cooperation in the construction and establishment of this great military base.”

Minot Mayor Maurice Harrington assured Guthrie and Hayes that “Minot realizes its responsibility in this enterprise and I am sure will give its wholehearted support.”

He expressed gratitude for the spirit of cooperation shown by farmers who lost or would lose their farms due to the location of the military installation.

In the city of Minot, Harrington said contractors were planning to build around 1,000 new homes in line with the growth of the city from the base construction project and new industries.

“Minot welcomes you... may your stay with us be a happy one,” said Harrington summing up the event of that day.

What became Minot Air Force Base officially began that day in July 1955.

Less than two years later, in February 1957, Roe turned over the “key” to Minot AFB to Maj. Joe Roberts, the first base commander, during a small ceremony in front of base operations.

Today, more than 12,000 people – military members, family members and civilians employed at the base – make up the base’s population.

Minot AFB is the only dual-wing, nuclear-capable base in the U.S. Department of Defense. The 5th Bomb Wing has B-52H Stratofortresses and the 91st Missile Wing has Minuteman III intercontinental ballistic missiles in the Minot missile field. The bomb wing and missile wing are part of Air Force Global Strike Command.

–

For more about the 65 years of Minot Air Force Base, see The Minot Daily News’ recently released commemorative magazine, Celebrating 65 Years of Minot Air Force Base, 1955-2020, at The Minot Daily News website – go to “Special Sections,” then scroll down to the “Celebrating 65 Years of Minot Air Force Base, 1955-2020” magazine cover.

Print copies are free and also available at The Minot Daily News office at 301 4th Street SE, Minot.

–

Naming Minot Air Force Base

MINOT AIR FORCE BASE -The permanent name for Minot Air Force Base has remained just that – Minot Air Force Base.

Other names were suggested for the Minot base.

The Mayor's committee for renaming Minot AFB, established in 1960 by then Minot Mayor Maurice Harrington, also invited people to suggest names for the new base. Harrington asked Robert Cory of The Minot Daily News to be the committee's chairman.

Some of the names listed for Minot AFB included, according to The Minot Daily News files:

- The Swenson brothers, Capt. Donald and Staff Sgt. George, of Carpio, both of whom lost their lives in action in Europe in World War II.
- Maj. James Howard, Minot, also killed in action in World War II.
- Lt. Harry W. Eck, a Minot pilot who was killed on a bombing mission over Germany in World War II.
- Lt. Robert Rist, a Velve fighter pilot who lost his life in the Pacific during World War II.
- Maj. Merle Gilbertson, of Maddock, who shot down 10 enemy planes in World War II.
- "The Minot Air Force Base" proposed as a geographical name by the board of directors of the Minot Chamber of Commerce.

In the end, Minot Air Force Base was selected to continue as the name for the base.

Then a few years later - in 1968 - two Nebraska senators suggested to the North Dakota congressional delegation that the base should be renamed in memory of Maj. Gen. Charles Eisenhart, one of 13 victims of a tanker crash on Jan. 17, 1968, at the Minot base.

Rep. Tom Kleppe, North Dakota's West District congressman, said he felt the name should continue as Minot AFB. "It now has an identity not only with Air Force personnel but with all of the men and women of all branches of the armed services who come from the Minot area," Kleppe said in a story in The Minot Daily News. He told the Nebraska senators that full consideration was given choice of a name when the base was activated and asserted he felt there would be little local support in the Minot area for a change.

The name over the years has remained Minot Air Force Base.

<https://www.minotdailynews.com/news/local-news/2020/07/ground-broken-for-north-dakotas-first-major-military-installation-65-years-ago/>

[Return to top](#)

Eurasia Review

Quest for Sea-Based Nuclear Deterrence: Comparative Analysis Of India And Pakistan Nuclear Capabilities

By Syed Daniyal Ali

July 13, 2020

The main motive of the deterrence is to create a threat to deter others from offending. It is considered an art to convince others not to do certain acts. The cold war-related the concept of deterrence with nuclear weapons. After that, nuclear weapons and striking capabilities advancement perceive as a great threat in the opposite camp. In response, counter capabilities adopted by others. In the post-cold war era, the game of nuclear deterrence seen in the Asia region. It can be observed in the context of the emergence of new nuclear states, India, Pakistan and China. These three nuclear states have matured and advanced in terms of nuclear weapons, and it's delivery system and control and command establishment.

Since the creation of India and Pakistan, both states are engaged in three major wars. These armed conflicts continue to pretend the risk of war. These conflicts include Kashmir, Siachen and water disputes. In 1998 both states conducted the nuclear test, after being nuclear states both raised many questions related to the security concerns in South Asia. Both states developed their nuclear thinking. In recent times, both states are focusing on their naval advancement. India started spending money on the sea base missile capabilities; Pakistan followed the same trail for counter capability. In the next decade, South Asia will emerge as a theatre of a sea-based nuclear weapon deterrence platform.

Indian and Pakistan both have a strategic and central position in the Indian Ocean Region, especially their interest in the sea base nuclear deterrence. Both states have national, economic and security concerns with the Indian Ocean Region. If the shore of both states is not protected, then there is no means of industrial development, political stability and no commercial growth.

Many questions arise about the logic of sea-based deterrence: The sea power concept is not the new one; the influence of sea power affects the wealth and strength of the states. Especially in the war, issues related to the control of the sea, skilful use of the sea can't be neglected or ignored by any state. Some great strategist highlighted the importance of sea power; most famous and renowned Mahan and Corbett wrote about the war strategies. In recent time, both strategist maritime theories are being implemented by all the states in different manners as all focusing on the control lines of communication, the primacy of politics in war, primarily focusing on their maritime advancements. But the advancement of nuclear weapons has increased the importance of the sea-based nuclear deterrence. According to the assumption of realism, survival is the most critical factor of any state. Indian Ocean Region is essential for India and Pakistan strategically, after showing its naval advancement provides the best opportunity to create the sea base deterrence.

Pakistan and India sea-based nuclear programs might be at a nascent stage. Pakistan developed sea base nuclear capability with electric diesel submarine-launched cruise missile Babur and India has launched its first nuclear submarine INS Arihant has changed the strategic position of the Indian Ocean. As both states have availed the second strike capabilities with sea base nuclear program ensures that both will be able to survive an initial nuclear strike and still be able to retaliate with a nuclear attack to inflict maximum damage.

One view is that it will create stability in the South Asia region because Pakistan rationale for developing naval nuclear capabilities is to attain second-strike capability against India, providing its strategic depth and creating nuclear deterrence. But the fact cannot be neglected that it is an entirely new technology for both states. Pakistan is buying six submarines equipped with Babur from China for sea base deterrence, but the deal still in progress. Whereas India INS Arihant also has a lot of operational issues: as reactor fuel issue, secondly its range is not satisfactory even in the crucial situation it is not able to attack the major cities of Pakistan like Islamabad and Lahore hardly it will be able to target the Karachi.

Same in the case of China, range issues still create a lot of limitations on it. It is also a noisy one like many Russian Submarines, so would have to adopt the bastion strategy. Conventional submarines are less noisy than nuclear submarines. Both states can be victimized of the Command, Control and Communication C3 issues. The possibility cannot be ignored that if submarines lost their contact with their bases, then submarine officers will be free to make their own decision on the usage of nuclear weapons, will lead towards the "fog of war".

*About Author: Syed Daniyal Ali is the author behind this article who is final year student of BS Defence and Strategic Studies at National Defence University Islamabad. His interest lies in a research work across the multiple disciplines broadly addresses narratives of contemporary issues, foreign policy analysis, South Asia stability paradox and International politics

<https://www.eurasiareview.com/13072020-quest-for-sea-based-nuclear-deterrence-comparative-analysis-of-india-and-pakistan-nuclear-capabilities/>

[Return to top](#)

Bulletin of the Atomic Scientists (Chicago, Illinois)

Jan Eliasberg: Fiction as a Window into the Ethics of Testing the Bomb

By Dawn Stover

July 15, 2020

Researching an idea for a scene, the film and television writer-director Jan Eliasberg went to the New York City public library to see what the New York Times had published on its front page on the day after the Hiroshima bombing. There she read a sentence that fascinated her: “The key component that allowed the Allies to develop the bomb was brought to the Allies by a female non-Aryan physicist.” The Times did not name the physicist.

I’ve got to find this woman and figure out why her name and picture aren’t in every science textbook, thought Eliasberg, whose work focuses on exceptional women neglected by historians. She believed there was an amazing story to be told about someone who had lived in Hitler’s Germany and seen firsthand nuclear fission’s potential to be used for good or evil.

The woman turned out to be Lise Meitner, an Austrian-Swedish physicist of Jewish ancestry who worked at the Kaiser Wilhelm Institute until she fled from Nazi Germany to Sweden in 1938. Meitner was one of the co-discoverers of nuclear fission but did not share in the 1944 Nobel Prize in Chemistry awarded exclusively to her colleague Otto Hahn.

Eliasberg ended up writing a novel, *Hannah’s War*, rather than a screenplay. It was published in March by Little, Brown and Company.

In her author’s note, Eliasberg writes that the book was inspired by Lise Meitner and German physicist Werner Heisenberg, but that everything else in the book is the product of her imagination. However, the book includes some real figures from history, such as Robert Oppenheimer and General Leslie Groves.

Part spy thriller, part love story, Eliasberg’s novel explores one of the great mysteries of World War II: why the Germans made so little progress toward building an atomic bomb, despite having discovered nuclear fission. Eliasberg comes down firmly on the side of author Thomas Powers and others who believe Heisenberg sabotaged the German bomb program by convincing officials that it was unfeasible.

In *Hannah’s War*, the title character is based on Meitner. It is 1945, and Hannah is working at the secret nuclear lab in Los Alamos, New Mexico, where she is suspected of spying for the Germans. Eliasberg took some artistic license in placing Meitner’s stand-in at Los Alamos. (Meitner herself refused an offer to work on the Manhattan Project and wanted nothing to do with the bomb.) Putting her there allowed Eliasberg to explore the ethical dilemmas faced by scientists developing the bomb.

Much of the drama takes place just before the Trinity test, the first detonation of a nuclear device, in the New Mexico desert 75 years ago this week. Contributing editor Dawn Stover interviewed Eliasberg about her fictional exploration of this history.

Dawn Stover: I find it interesting that we still don't completely understand why the Germans were not able to build an atomic bomb even though they had a head start.

Jan Eliasberg: The Americans sure thought that [the Germans] were close. We sent a team in with the front lines to capture these scientists and to find plutonium, and to find anything like a bomb. I think people were quite shocked when they saw that they had just this totally primitive ... not even really a nuclear pile.

DS: When you were researching this whole history, was there anything that really surprised you or ran counter to what you thought you already knew about this whole period?

JE: Yes, very much so. The stuff that surprised me was on the American side. For example, the assessment by Curtis LeMay [the commander who led US air attacks on Japan] where he basically says, "We've bombed the shit out of Japan. Hurry up with your atomic bomb, because there's going to be nothing left if you don't." That shocked me, and also that they deliberately left those cities pristine because they wanted to show the devastation. They wanted, I believe, to kill innocent people, because they were already moving on to the Cold War. They had already identified Stalin and the Soviets as the new enemy. Japan was on its knees. I also was surprised, even though I guess I knew historically about the dates, but I was really surprised at the correlation between FDR's death [in April 1945] and the Trinity test, because I do think that the scientists had a very different feeling about what FDR might have done than Truman. Another [surprise] was that we never bombed the train tracks leading into Auschwitz, even though we very clearly knew where they were, but they were considered not a strategic target. Also, the last thing I will say, was that General Groves, because of his close relationship with the Alsos team [tasked with investigating enemy scientific progress], knew that the Germans did not have the bomb and delayed telling the scientists in order to keep them working.

DS: There's a scene in the book where you introduce readers to all this moral ambiguity around nuclear weapons without hitting them over the head with it. A character who seems like he's loosely based on physicist Leo Szilard argues that demonstrating the bomb for the Japanese could show them that all war is pointless, and Oppenheimer replies that a demonstration could embolden America's enemies if it failed. Then you have General Groves saying, "The Reds need to know we've got the bomb," and that's when the fictional Jack Delaney, who is investigating possible spying at Los Alamos, realizes that Groves has repeatedly called the bomb a "deterrent" as a way to motivate the scientists and assuage their consciences. How much of that scene did you make up, and what kind of understanding of nuclear weapons and deterrence did you want readers to come away with?

JE: That was a very difficult scene to write, maybe the most difficult. The deterrence argument had been going on with Leo Szilard and other scientists. They had been having meetings and they invited Oppenheimer to come, and their meetings were very much about, "What is our moral responsibility, having now built this thing, or almost built it?" They wanted to bring a Japanese delegation out into the desert for the Trinity test. Oppenheimer actually did say, "What if it doesn't work?"

DS: And Groves? Had he been repeatedly referring to the bomb as a deterrent?

JE: He actually did, but I wanted that to be more Jack's revelation, that he underestimated Groves because he saw him as this foul-mouthed guy who's throwing his weight around, and didn't realize that Groves is also extremely canny, and that he does know how these scientists think and how to soft-pedal certain things. Like, for example, not to mention right away that the Germans don't have the bomb, because they are so close to the Trinity test at that point. It seemed to me that, between

Groves and Oppenheimer, they had sort of woven a spell that caused most of the scientists to leave their qualms at the door. So that's what I was trying to get to in that scene.

DS: In your reading group guide at the end of the book, you encourage book clubs to ask themselves how Americans continue to process this violent history, and how the threat of nuclear attack influences foreign policy in the 21st century. How would you answer those questions?

JE: Well, I mean, obviously I think of the Pandora's box and Faust, that you make a bargain with the devil. You can't put that back. The fact that we have not had a nuclear war does say something about the deterrent effect. But our foreign policy is very much affected by the atomic countries, and there are many of them now. The thing about nuclear war is that it's almost impossible to imagine. I've been thinking a lot about the pandemic, because I think there's something very similar in the sense that it's something we can't see, and so it's something that's almost impossible to imagine.

DS: You see some parallels between this current period and the World War II era you wrote about, when people were dealing with a tremendous range of losses, from simple little things like silk stockings to losing loved ones?

JE: Because I was working on the book over such a long period of time, there were different parallels all along the way. At one point, I was thinking about the way we basically ginned up a reason to go to war with Iraq—that they had nuclear weapons, which they did not. So from the Bay of Pigs to Iran, it was like nuclear [weapons] kept coming back as an issue and as a reason to perpetuate war. When I was doing revisions on the book, I was thinking about what we're doing to immigrants and how we're arresting them. That is what the Nuremberg Laws did so horrifically, but brilliantly, is that they chipped away at tiny little things so that you would adjust. Then the next outrageous thing that happened, you were just too accustomed to adjusting.

DS: So the lesson from how Hannah deals with persecution in Nazi Germany, is what? That she tries to maintain some level of human decency?

JE: Yes. That's exactly what I'm getting at. The Meitner quote at the beginning of the book is: "Those blessed with a brilliant mind and a gift for science have a higher duty that comes before discovery, a duty to humanity. Science can be used for good or evil, so it's incumbent upon scientists to ensure that their work makes the world a better place."

DS: Where did she write that?

JE: It was in one of her letters. She wrote a number of letters to Otto Hahn that she didn't send. She's quite scathing about the Nobel Prize and his neglecting to mention her role in it.

DS: Which is interesting, because in the public statements that I've seen, she seems very gracious and not at all trying to claim her spot in history.

JE: She really valued that relationship with Hahn and his wife. She always felt that that time in Germany was her best period scientifically and the place where she felt the most at home. When she fled to Sweden, she really hated it there. I mean, she was very lonely. She wasn't treated like a queen at Kaiser Wilhelm, but she was treated even less well in Sweden. The other thing she's very, very scathing about is the fact that [Hahn] stayed in Germany. She says, again in a letter that she didn't send, "I knew what was going on, and I didn't want to accept it because I wanted to stay. But by the time I left, you really knew what was going on, and you said nothing." So I think that what you see in the public view of her is the graciousness that women are taught to adopt, because people don't tend to like angry women or resentful women. Lise Meitner was the only woman at Kaiser Wilhelm. She was the first female lecturer ever. She reminds me a little of Ruth Bader Ginsburg, in that she's very Jewish, very small, sort of birdlike, and fiercely intelligent, but she is not going to go against the way she's been taught to be ladylike.

DS: I don't know very much about her personal history, but I believe she never married. You gave her a lover and also kind of a flirtation with the character Jack. Was that just in the interest of storytelling, or were you trying to say something about her as a woman too?

JE: Well, I would say both. I felt from reading her letters that she and Hahn never had a sexual relationship, but that collaboration was incredibly close, and there was a love there, whether it was for him or for their work together. But I know when you have that kind of collaboration and it's a woman and a man that there's ... sparks are flying. Whether they're intellectual or romantic, it's kind of hard to tell, but she writes about him in a way that I certainly felt that there was a very strong bond there. With [the character] Jack, I think it's actually a different story. She's manipulating him all the way.

DS: And he is manipulating her.

JE: Yeah, and I wanted all of those possibilities to be there until the end, because that's what drives an espionage story. Everyone has secrets.

Editor's note: This interview has been edited and condensed for brevity and clarity.

<https://thebulletin.org/2020/07/jan-eliasberg-fiction-as-a-window-into-the-ethics-of-testing-the-bomb/#>

[Return to top](#)

US COUNTER-WMD

Yellowhammer News

Boeing Awarded \$150 Million Contract Modification for Huntsville-managed Missile Defense Program

By Sean Ross

July 15, 2020

The Missile Defense Agency in recent days awarded Boeing a three-year, \$150 million contract modification to produce four additional boost vehicles for the Ground-based Midcourse Defense (GMD) system.

GMD is the only defense program capable of protecting the entire U.S. homeland, including Alaska and Hawaii, against long-range ballistic missile attacks.

Boeing manages the vital national security program in Huntsville and has led the industry team since the inception of the GMD program in 1998 with engineers and experts who work in Alabama.

As the prime contractor, Boeing designs, produces, integrates, tests and sustains all GMD components deployed across 15 time zones. Boeing also provides training, equipment production and operations support services.

GMD interceptors are designed to track long-range ballistic missile threats and use collision force to destroy the target.

Boeing's total GMD contract now stands at \$11,487,396,890.

Sean Ross is the editor of Yellowhammer News. You can follow him on Twitter @sean_yhn

<https://yellowhammernews.com/boeing-awarded-150-million-contract-modification-for-huntsville-managed-missile-defense-program/>

[Return to top](#)

Roll Call (Washington, D.C.)

Amid Pandemic, Pentagon Would Cut 'Chem-bio' Protections

By John M. Donnelly

July 13, 2020

The Defense Department wants to spend less in fiscal 2021 on chemical and biological defense programs, budget documents show, in the middle of a pandemic and despite its own officials' warning of a heightened risk of attacks on U.S. troops from such weapons.

After what Defense Secretary Mark T. Esper called a Defense Wide Review of spending in February, he proposed cutting \$5.7 billion from dozens of programs to instead pay for hypersonic missiles, the nuclear arsenal and other weapons that, he said, were needed to deter or fight Russia and China.

Lost in the fine print and unmentioned in the press was a proposed drop in funding for research and procurement initiatives in the Chemical and Biological Defense Program — from \$1.4 billion this fiscal year to \$1.2 billion.

The armed services have dozens of programs, organizations and systems for dealing with chemical and biological weapons. But the chem-bio defense program centralizes the budget and oversight for the bulk of the military's chem-bio efforts. It is managed by a deputy assistant secretary. It develops the technical tools — from medicines to military gear — that can detect and protect against chem-bio agents and help people respond to or recover from such unconventional weapon attacks or disease outbreaks.

Throughout the Trump administration, spending on the chem-bio program has lagged behind the rate of surge in the wider defense budget. The proposed fiscal 2021 cut would reduce spending on programs such as protective shelters for troops, decontamination gear and systems for detecting when dangerous agents are present, according to the budget documents.

Threat to troops' readiness

Now this decision has started to draw attention on Capitol Hill. The Senate adopted without debate on July 1 an amendment to its defense authorization bill by Utah Republicans Mitt Romney and Mike Lee that would require Esper to explain the impact of reducing chem-bio spending.

Notably, the provision orders “an assessment of the threat posed to members of the Armed Forces as a result of a reduction in testing of gear for field readiness,” the amendment said.

“At a time when our country faces complex threats from our adversaries and other malign actors, DoD must maintain critical chemical and biological weapons research, much of which is done at Dugway Proving Ground,” Romney told CQ Roll Call in a statement, referring to a Utah facility that tests protective equipment.

The House Appropriations Committee, meanwhile, is set to vote this week on a draft spending bill that would add back nearly half of the \$117 million proposed cut to the chem-bio program. It would restore \$27 million for the botulinum-plague vaccine.

The Armed Services Committees have not recommended more funding for the chem-bio defense program, though they have authorized additional spending on pandemic responses. The House bill

would mandate a Government Accountability Office report on U.S. military chem-bio protections and would require the Pentagon to fill in Congress on U.S. preparedness for chem-bio threats on the Korean peninsula.

All the defense bills produced so far this year have proposed restoring to some degree a separate proposed budget cut to the Biological Threat Reduction Program, which helps other countries detect and respond to diseases, whether natural or man-made. Esper's Defense Wide Review also targeted this program, now funded at \$203 million, for about a one-third reduction in fiscal 2021.

The Pentagon press office, when asked about the proposed cut to the chem-bio program, did not provide an explanation.

'Mindless cuts'

People who formerly oversaw U.S. military chem-bio programs said that while any one cut or two might be justified, the importance of the threat casts doubt on the wisdom of reducing the overall dollar amount.

Chemical and biological weapons are banned by treaties and considered beyond the pale around the world. But they are still in the inventories of several countries and are occasionally used.

Syrian President Bashar Assad has repeatedly used mustard agents and chlorine in his fight against rebels. North Korea is reputed to possess an arsenal of chemical weapons and perhaps also biological ones, and its assassins killed President Kim Jong-Un's half brother with VX nerve agent in a Malaysian airport in 2017. A year later, Russia — a leading developer of chemical and biological weapons dating to the days of the Soviet Union — sent agents to England to poison a former Russian spy and his daughter with a sophisticated "novichok" nerve agent.

These events have made use of chemical and biological weapons seem "mainstream," said Tom Spoehr, a retired lieutenant general who once commanded the Army's Chemical, Biological, Radiological and Nuclear School.

"Now COVID-19 has shown the world how susceptible great nations such as the United States are to biological attack," he added.

Andrew Weber, a former Pentagon assistant secretary for nuclear, chemical and biological defense programs, said a state-sponsored biological weapons attack would dwarf the coronavirus pandemic in its effect.

"This is like a pop quiz compared to what a state bioweapons attack would be — that's the final exam," said Weber, who is now a senior fellow at the Council on Strategic Risks. "These are mindless cuts that don't comport with 21st century national security threats."

Heightened risk

Even the budget documents detailing the reduced spending proposed for the chem-bio program said the chances of U.S. troops facing a chemical or biological attack are real and growing.

"An increased willingness to use these types of weapons either for assassinations (e.g. Russia and North Korea) or to achieve asymmetric advantages (e.g. Syria and ISIS in Iraq) indicates eroding international norms against the use of CB weapons," one of the documents said.

"The proliferation of knowledge and technology, increased ease of access, difficulty in detecting illicit activities, emerging threats, improved delivery capabilities, and our limited ability to anticipate how adversaries might employ Weapons of Mass Destruction (WMD) heighten the risk of attacks against the U.S. or its allies," it said.

Spoehr, who is now an analyst at the Heritage Foundation, said America's adversaries are emboldened to use chem-bio weapons to counter U.S. military might.

"Given the changed landscape and the increased threat from CB weapons, it does not seem appropriate for the U.S. to reduce the money it spends to protect against these weapons," Spoehr said.

Gerald Parker ran the Chemical and Biological Defense Program when he was deputy assistant secretary of Defense from 2010 to 2013, and he once commanded the U.S. Army Medical Research Institute of Infectious Diseases.

Parker said in an interview that it is important to maintain steady funding for the Pentagon's chem-bio program, because Defense Department research labs help protect not just military personnel but also the wider world from diseases — whether naturally occurring, accidentally released or intentionally deployed, and including those that have not yet emerged.

"It is our tech base — our laboratories and our DOD scientists — that are essential to responding to the unknown," said Parker, who is now director of pandemic policy at Texas A&M University's Bush School of Government Service. "It's kind of stunning in the current environment — in the middle of the most serious pandemic since 1918 — that we're going to cut the biological and chemical programs."

<https://www.rollcall.com/2020/07/13/defense-department-spending-chemical-biological-programs-russia-china/>

[Return to top](#)

US ARMS CONTROL

UPI (Washington, D.C.)

Researchers: North Korea Developing Arsenal to Evade Missile Defenses

By Thomas Maresca

July 16, 2020

SEOUL, July 16 (UPI) -- North Korea continues to advance its nuclear weapons and missile programs and poses a growing threat to countries in the region such as South Korea and Japan, according to a report by the U.S. government's Congressional Research Service released this week.

Pyongyang's recent tests of short- and medium-range missiles and rocket launch systems demonstrate increasingly sophisticated precision, maneuverability and reliability, the report said, and "pose the most acute near-term threats to other nations."

"Recent missile tests suggest that North Korea is striving to build a credible nuclear warfighting capability designed to evade regional ballistic missile defenses," said the report, which was released Tuesday.

The U.S.-developed Patriot, Aegis Ballistic Missile Defense and Terminal High Altitude Area Defense systems are deployed in the region.

After a 17-month hiatus, North Korea began testing weapons again last year, including launches of the KN-23, a short-range ballistic missile similar to the Russian Iskander, which flies closer to the ground and is more maneuverable than traditional ballistic missiles. First tested in May 2019, the

KN-23 is "the most notable advance to the North Korean inventory in the smaller category of weapons," according to the CRS report.

The newer KN-24, which analysts believe is modeled after the U.S. Army Tactical Missile System and the KN-25 guided multiple-launch rocket system, also "poses significant threats to South Korea and U.S. assets on the peninsula," the report said.

The advances "suggest that the North Korean test program may seek to achieve more than a simple political statement," the report said. "North Korean tests have demonstrated growing success and, coupled with increased operational training exercises, suggest a pattern designed to strengthen the credibility of North Korea's regional nuclear deterrent strategy."

On Tuesday, a Japanese defense white paper concluded that North Korea had the capability to launch an attack against Japan with a nuclear warhead.

North Korea's developments in smaller missiles, such as a shift toward solid propellants and satellite guidance systems, could carry over to its longer-range weapons, the CRS report added, which would "provide the projectiles greater mobility and survivability prior to launch and greater potency and precision on target."

In 2017, North Korea launched a pair of intercontinental ballistic missiles, the Hwasong-14 (designated KN-20 by the United States) and the Hwasong-15 (KN-22), which demonstrated a range sufficient to reach the entire continental United States.

North Korea continues to produce plutonium and highly enriched uranium for nuclear weapons and aims to develop a warhead small enough to mount on a long-range ballistic missile, the report said.

United Nations Security Council resolutions ban all ballistic missile tests by North Korea.

Relations between Washington and Pyongyang have stalled since a summit between U.S. President Donald Trump and North Korean leader Kim Jong Un last year in Hanoi, Vietnam, failed to produce an agreement on issues such as sanctions relief for the North and a timetable for proceeding with denuclearization.

Washington's top envoy to North Korea, Stephen Biegun, said last week during a visit to Seoul that the United States is ready for further dialogue with North Korea under the right conditions.

Secretary of State Mike Pompeo downplayed the hopes of another Trump-Kim summit on Wednesday, however, saying the president would only want to engage again if there were hopes of making real progress.

"You need to have a willing partner, and the North Koreans have chosen at this point in time not to engage in a way that can lead to a potential solution," Pompeo said at a forum in Washington, D.C. hosted by news website The Hill.

Pyongyang has expressed little desire for another meeting with Washington in recent weeks, with Kim Yo Jong, sister of Kim Jong Un, saying Friday in state media that another summit is not necessary "unless the U.S. shows decisive change in its stand."

Inter-Korean relations have also been strained, as Pyongyang cut off all communications with Seoul and destroyed a shared liaison office last month in retaliation for defectors sending information leaflets on balloons across the border.

The CRS report said North Korea's continued weapons development may be intended to give Pyongyang increased diplomatic leverage but could also contribute to the threat of a military escalation in the region.

"Such an approach likely reinforces a deterrence and coercive diplomacy strategy -- lending more credibility as it demonstrates capability -- but it also raises questions about crisis stability and escalation control," the report said.

https://www.upi.com/Top_News/World-News/2020/07/16/Researchers-North-Korea-developing-arsenal-to-evade-missile-defenses/9771594894774/

[Return to top](#)

Al-Monitor (Washington, D.C.)

Rouhani Warns against Extension of Iran Arms Embargo

By Al-Monitor Staff

July 15, 2020

"It is about safeguarding international law and multilateralism," Iran's President Hassan Rouhani said in reference to the October expiry of an Iran arms embargo, as set in the Joint Comprehensive Plan of Action as well as UN Resolution 2231.

Rouhani's televised July 15 address came as the United States was in the middle of an intense and challenging campaign to get the UN Security Council to vote on extending the embargo. The Islamic Republic has been working relentlessly to counterbalance the US push by seeking support from the remaining JCPOA signatories, China and Russia in particular. In the opening of a series of US-called Security Council meetings on the matter in late June, the members emphasized the need to preserve the JCPOA.

The Iranian president advised the 4+1 countries (China, Russia, UK, France and Germany) to resist the US pressure because "it's not just about their ties with Tehran" and said failure to stop an extension "will devalue international treaties ... leaving all sides at loss." According to Rouhani, Washington will face "yet another defeat" in its political and legal war against Tehran should the 4+1 nations act with "vigilance."

Rouhani's speech came on the fifth anniversary of the signing of the nuclear deal, and he used the chance to renew attacks on the US government for its "illegal" withdrawal from the pact in May 2018, a decision he blamed "on Zionists [the Israeli government], reactionaries and hard-liners in America."

Since its departure from the deal, the administration of President Donald Trump has been pursuing a "maximum pressure" policy to squeeze Iran economically. Rouhani again downplayed it, saying, "Despite US efforts, Iran has not and will never become isolated." The campaign has sought to drain Iran's oil exports, one impact of which has emerged in the form of an unprecedented depreciation of Iran's national currency, the rial. The nosedive has accelerated in the past two months amid dwindling hard currency reserves as banking restrictions continue to cut off Tehran's access to its oil income. And that income is already fast diminishing as buyers are scared off by US penalties on business with the Islamic Republic.

The nuclear deal's failure to bring the promised economic relief appears to have forced the Iranian president to narrow his expectations and invest almost all his hopes in the end of the arms embargo. Rouhani described the expiration in his address as a key "achievement," the protection of

which is “a big test” for the UN Security Council. It is perhaps his top defensible gain in the face of stinging rhetoric from his hard-line critics before he bids farewell to the presidency next year.

Read more: <https://www.al-monitor.com/pulse/originals/2020/07/iran-rouhani-warn-extension-arms-embargo-trump.html#ixzz6SNLW6eJq>

<https://www.al-monitor.com/pulse/originals/2020/07/iran-rouhani-warn-extension-arms-embargo-trump.html>

[Return to top](#)

Defense News (Washington, D.C.)

Key House Democrats Want to Lock in New START Weapons Limits

By Joe Gould

July 15, 2020

WASHINGTON — The chairmen of the House foreign affairs and intelligence committees are pushing a measure meant to extend the last remaining U.S.-Russia arms control agreement amid fears President Donald Trump will let it lapse.

Led by House Foreign Affairs Committee Chairman Eliot Engel, D-N.Y., the proposal would require congressional approval to increase the nuclear arsenal above the limits of the 2010 New START treaty, if the pact is allowed to expire next year.

The measure was offered as an amendment to the 2021 National Defense Authorization Act, which is set for floor consideration next week. Engel’s amendment was cosponsored by House Intelligence Committee Chairman Adam Schiff, D-Calif., and House Intelligence, Emerging Threats and Capabilities Subcommittee Chairman Jim Langevin, D-R.I.

“This Administration’s recklessness has left New START as the only remaining agreement limiting Russia’s nuclear weapons. Despite the White House’s claims, there’s no ‘better deal’ with Russia and China on the horizon, and the clock on New START is ticking,” Engel said in a statement. “The president doesn’t seem to have a problem with Russia developing more and more nuclear weapons that could strike the United States, so Congress has to do everything we can to keep these protections in place.”

The action came days after Russian Foreign Minister Sergey Lavrov warned he’s not very optimistic about prospects for an extension because of Washington’s focus on making China sign onto the pact. U.S. and Russian envoys held talks last month in Vienna, but Beijing has refused to take part.

Engel’s amendment states that the U.S. should extend the pact for five years, to an expiration date of February 5, 2026, unless Russia is in material breach of the treaty or if it is replaced by a new, stronger agreement. It also provides the executive branch with permission to continue inspection activities and other transparency measures if New START expires on February 5, 2021, assuming that the government of Russia reciprocates these steps

The New START treaty limits each country to no more than 1,550 deployed nuclear warheads and 700 deployed missiles and bombers and envisages sweeping on-site inspections to verify compliance.

The amendment would bar funding to increase the arsenal above the treaty limits unless the president notifies Congress in advance of the new military requirements, certifies that the additional deployments are necessary and justifies the deployments, reports the associated costs

and operational implications, and requires that any increase in deployed nuclear weapons is subject to a joint resolution of approval.

It also requires detailed reports on Russian nuclear forces and, with an eye toward potential growth in China's nuclear arsenal, requires briefings and reports regarding the administration's arms control approach with Beijing, according to a summary.

It also requires a presidential certification before New START would lapse that this would serve U.S. national security interests, an assessment whether continuing limits on Russian nuclear forces would serve U.S. interests and a plan for how the U.S. military and intelligence communities will address the post-New START environment, including the potential funding and development of additional nuclear deterrence and intelligence requirements.

If Engel's amendment is accepted by the House Rules Committee and adopted by the House, it would almost certainly invite resistance from hawkish supporters of the president during negotiations to reconcile the House and Senate versions of the NDAA. Senate Armed Services Committee's Chairman Jim Inhofe, a proponent of nuclear weapons spending, has historically been a skeptic of the treaty.

Kingston Reif, the Arms Control Association's director for disarmament and threat reduction policy, said the Trump administration doesn't seem like it will extend New Start and that Congress ought to be putting in roadblocks.

"Crucially, the amendment would require congressional approval to increase the nuclear arsenal above the treaty limits, if the treaty is allowed to expire next year. A decision as consequential as increasing the size of the deployed arsenal, which hasn't occurred in decades, merits special scrutiny," Reif said.

After both Moscow and Washington withdrew from the 1987 Intermediate-range Nuclear Forces Treaty last year, New START is the only remaining nuclear arms control deal between the two countries.

Russia has offered its extension without any conditions, while the Trump administration has pushed for a new arms control agreement that would also include China. Moscow has described that idea as unfeasible, pointing at Beijing's refusal to negotiate any deal that would reduce its much smaller nuclear arsenal.

Trump declared an intention to pull out of the agreement in May, citing Russian violations. Russia denied breaching the pact, which came into force in 2002, and the European Union has urged the U.S. to reconsider.

The Associated Press contributed to this report.

<https://www.defensenews.com/congress/2020/07/15/key-house-democrats-want-to-lock-in-new-start-weapons-limits/>

[Return to top](#)

COMMENTARY

Arms Control Wonk

Heroes of Arms Control: Thomas Schelling

By Michael Krepon

July 13, 2020

Quote of the week:

“There has never been any doubt about the military effectiveness of nuclear weapons or their potential for terror. A large part of the credit for their not having been used must be due to the “taboo” that Secretary of State Dulles perceived to have attached itself to these weapons as early as 1953, a taboo that the Secretary deplored. The weapons remain under a curse, a now much heavier curse than the one that bothered Dulles in the early 1950s. These weapons are unique, and a large part of their uniqueness derives from their being perceived as unique.” — Thomas Schelling Nobel Prize lecture, 2005

In writing my impressionistic account of the rise, demise, and revival of nuclear arms control, I’ve read and reread lots of books and essays. Many brilliant people contributed to the field. Among the brainiacs who conceptualized the field of arms control, one stands out: Thomas C. Schelling.

Re-reading Schelling’s writing is always rewarding. The man’s mind was a steel trap. He had a knack for getting to the heart of the matter and expressing his ideas in ways that put your mind to work. Schelling won the Nobel Prize for Economics in 2005 for having enhanced our understanding of conflict and cooperation through game-theory analysis. Fair enough. But for my money, he deserved a Nobel for pointing us in the direction of nuclear arms control.

His razor-sharp mind and succinct powers of analysis were hallmarks of a career that began with the Bureau of the Budget and the Marshall Plan, ending at the University of Maryland, with stops at Yale, RAND and Harvard along the way. After Schelling’s death in 2016, his family auctioned off his Nobel Prize to raise money for the Southern Poverty Law Center.

I barely knew the man but got to know him better by interviewing his sister, Nancy Dorfman. Schelling’s father was a Naval Academy graduate; his mother earned undergraduate and graduate degrees – no small feat at the time. Teaching was one of the few professions available to accomplished women back then, so she taught, stopping to become a homemaker and to raise her three kids.

The future Nobel Laureate was a quiet, unremarkable student until his mother said, “Tommy, it grieves me that you don’t get better grades. I would like you to get A’s.” Thereafter he did. The family didn’t stay put for very long, moving around with his father’s postings. He began college at San Diego State and then transferred to Berkeley, majoring in Economics to learn tools to prevent another Great Depression. He couldn’t get into the Navy because of a stomach ulcer, so went to Harvard to pursue a doctorate.

Schelling took Mort Halperin, then adrift at Yale working on a doctorate without a mentor, under his wing. At Halperin’s urging, they wrote a primer, *Strategy and Arms Control*, published by the Twentieth Century Fund in 1961, that remains a classic. Arms control ought to be about stabilization and reassurance, they wrote. They were open minded about numbers; depending on the type of weapon and its means of delivery, some ought to be reduced, others might be increased. Adversaries needed to know one another better and to have meaningful exchanges in order to

avoid false alarms and misunderstandings. Our concept of national security, they wrote, needed to be enlarged by making room for arms control.

Schelling later reminisced that “Holding off disaster was what most of us aimed for.” In this, he and his “Charles River Gang” colleagues succeeded. Deterrence alone was dangerous. Deterrence needed reassurance to succeed, and arms control, despite its ups and downs, provided the reassurance.

Schelling applauded the Anti-Ballistic Missile Treaty as one precondition to slowing down the arms race. He quipped, “Most of what we call civilization depends on reciprocal vulnerability.” You have to love a brain that frames the ABM Treaty in this way.

Even with the ABM Treaty, it took the better part of two decades of negotiations to control and reduce offenses — and the dissolution of the Soviet Union. Schelling became disenchanted with arms control and the horse trading needed for treaty ratification. The epitome of foolishness, in his view, was trying to find a survivable, mobile basing mode for the MX /Peacekeeper missile on land when the obvious alternative was at sea. Writing before the Reagan-Gorbachev breakthrough, he concluded that arms control had become too much of a numbers game. The character of the weapons mattered more than their number. Their character resided in their means of delivery and deployment.

Then came the breakthrough of the INF Treaty in Reagan’s second term, followed by the extraordinary accomplishments of the George H.W. Bush administration. Bush, Brent Scowcroft, Dick Cheney (that’s right, Cheney) and the extraordinarily gifted James Baker operationalized Schelling. Their piece de resistance was START II, which banned land-based missiles carrying multiple warheads to accompany deep cuts.

The ban on MIRVed ICBMs and the ABM Treaty established long-term conditions for the strategic stability that Schelling and others had conceptualized. These two great accomplishments were dispensed with in 2002 by George W. Bush and Vladimir Putin. Had Bush 43 & Co. followed Schelling’s playbook, they would have used their immense leverage in 2001 to adapt to ABM Treaty to deal with new missile threats in return for Russian implementation of START II. The option to withdraw from the ABM Treaty could have been used to keep Putin from flight testing new ICBMs with multiple warheads. It was not to be: Putin couldn’t live without MIRVed ICBMs and Bush couldn’t live with the ABM Treaty.

Bush had made up his mind to withdraw from the ABM Treaty before being elected, as he wanted to be unencumbered to deal with missile threats from outliers and he wanted to avoid endless haggling with Putin. Putin set about to deploy missiles prohibited by START II in the worst way imaginable in Schelling’s universe, with liquid-fueled MIRVed missiles based in silos.

What began with Putin and George W. Bush accelerated with the toxic pairing of Putin and Donald Trump. Strategic arms control is now on a ventilator. John Bolton may be gone from the Trump administration, but his plan to shorten the life of New START remains in place.

Schelling, for all his brilliance, did not foresee the most important accomplishment of arms control when he and Halperin wrote the script. Arms control negotiations and the treaties they produced served to set nuclear weapons apart from other instruments of warfare. They were so different that they aren’t even tested. Their destructive power made them a breed apart. Every negotiated agreement confirmed the taboo against use. This was the subject of his Nobel Prize lecture, which I recommend reading.

Deterrence plus reassurance worked, as Schelling envisioned. Once Trump leaves office, we’ll need to think creatively about how to retrieve reassurance.

<https://www.armscontrolwonk.com/archive/1209738/heroes-of-arms-control-thomas-schelling/>

[Return to top](#)

National Interest (Washington, D.C.)

To Deter War with China, Defend Guam

By Rebecca Heinrichs

July 11, 2020

The Chinese Communist Party (CCP) seeks to supplant the United States as the global preeminent power. In doing so, the communist regime would use various forms of coercion to force other nations to conform to its likeness rather than respect the national borders of other nations in the region and in many cases their forms of democratic expression. If the CCP successfully transforms the Indo-Pacific into a Beijing-centric and Beijing-controlled region, then it will establish that the United States is no longer able or willing to defend its primary interests or make good on its security commitments to allies. This poses an unacceptable risk to U.S. critical allies in the region and threatens American sovereignty and our ability to engage freely and safely with sovereign democratic nations in a massively important region of the world.

Undergirding China's increasingly bold malfeasance, which has become more prominent during the coronavirus pandemic, is its military strength. The priority for the U.S. military is to deter Chinese aggression in the Indo-Pacific region and to have the right weapon systems and strategies in place to win the war if deterrence fails.

The U.S. military seeks to prevent a military confrontation by bolstering a credible deterrent. An effective deterrence strategy seeks to prevent China from acting aggressively by causing Beijing to calculate that an act of aggression against the United States and our core interests would not be worth the cost. The United States can establish deterrence by punishment, which threatens offensive retaliation. And it can establish deterrence by denial, which requires creating as many dilemmas for the People's Liberation Army (PLA) as possible so that they constantly conclude that they have an insufficient degree of certainty that whatever act of aggression they are considering would be ultimately successful.

Key to the U.S. efforts to deter Chinese aggression is the safety of Guam. Commander of U.S. Pacific Command, Admiral Davidson, testified before the Senate Armed Services Committee on February 12, 2020, and said, "Hawaii, Guam and our Pacific territories are part of our homeland and must be defended."

Americans may need the occasional reminder about the importance of this U.S. island, but U.S. adversaries do not. In 2017, North Korea threatened to attack Guam. In response, then-Secretary of Defense Jim Mattis said the United State would "take out" any missile headed towards Guam and that it would then be "game on." North Korea demurred, bolstering confidence in some military and policymakers that have a credible missile defense capability and demonstrating a will to employ it, can have a deterrent effect.

This tiny but mighty western Pacific island U.S. territory—part of our homeland—is six thousand miles from the coast of California, is indispensable to the United States. Guam has been a major strategic base for a variety of U.S. weapon systems and critical for maintaining the air-delivered leg of the nuclear triad in the Pacific region.

In April 2020, Air Force Global Strike Command announced it is transitioning to embrace a new concept, ending the continuous bomber presence in Guam. It will replace the mission to with a

concept that will enable rapid, unpredictable deployments by forward-deploying bombers to various places in the Indo-Pacific region. The new concept is called Dynamic Force Employment (DFE).

A Pentagon statement explained:

“The United States has transitioned to an approach that enables strategic bombers to operate forward in the Indo-Pacific region from a broader array of overseas locations, when required, and with greater operational resilience, while these bombers are permanently based in the United States. U.S. strategic bombers will continue to operate in the Indo-Pacific, to include Guam, at the timing and tempo of our choosing.”

The strategic mission of the bombers, whose role in a crisis with a nuclear-armed state is to de-escalate, remains a commitment and priority for the United States. The DFE concept also increases the importance of Guam, as it will find itself as a kind of hub, an outpost of American territory, necessary for reinforcing and supporting the dynamic missions taking place so far from the United States mainland. Simply put, defense of Guam remains essential for the Pentagon’s shift to deterring China including efforts to boost the credibility of strategic deterrence.

Creating a more robust deterrent architecture for the Indo-Pacific region versus China, beyond the limited one versus North Korea, will require a mix of distributed offensive and defensive weapons—and a lot of them. The United States plans to deploy long-range precision fires from across all platforms, services, and domains, to hold at risk a variety of PLA target sets (remember, multiple dilemmas) from various distances, as well as deploy an integrated air and missile defense (IAMD).

The IAMD mission, as the Pentagon bolsters deterrence by denial, cannot be overstated. It is noteworthy that the missile defense architecture does not have to have the ability to intercept every single missile. Having a sufficiently robust active defense from the many diverse and increasingly sophisticated Chinese missiles will further complicate Beijing’s calculations, and any time the United States can do that, it will strengthen deterrence.

In the IAMD mission, integration warrants emphasis because its aim is to leverage sensors, command and control nodes, and interceptors across sea, land, air, and the space domains.

As my Hudson colleague Seth Cropsy explains:

“China’s saturation strikes will flood American and allied radars with thousands of distinct targets, ranging from standard cruise and ballistic missiles and strike aircraft to unmanned aerial vehicles, strategic bombers, and hypersonic weapons.”

Cropsy goes on to explain that the U.S. military’s individual programs are stove-piped and “therefore developed independently of their technologically equivalent counterparts with little thought to organic integration.”

The Army has a solution for this, perfectly suited for a necessary for the Indo-Pacific theater. It’s called the Integrated Battle Command System (IBCS), and it, again, to quote Cropsy, “strips away these additional layers of transmission and processing, fusing all the data from the systems in which it is installed into a single data picture.”

Wargaming exercises show how badly we need this capability when it comes to the architecture of air and missile defense systems. This is especially meaningful considering that critical to the IAMD mission is the establishment of a fixed and persistent 360-degree defense against the sophisticated Chinese air and missile threats, from the Second Island Chain—that is, Guam.

The Terminal High-Altitude Area Defense (THAAD) system has been deployed on Guam since 2013 and intercepts incoming missiles in their terminal phase of flight. Regionally, it also offers protection in South Korea. The other is a sea-based platform, an Aegis ship equipped with SM-3 IA interceptors. Aegis ships patrol the Pacific region and can be maneuvered to defend areas where war-planners anticipate a missile attack. Both of those systems were designed to intercept exactly the kind of rogue state missile threats rogue states possessed by North Korea.

But with the Trump Pentagon now focused on competing with and deterring major power, China, missile defense systems and strategies must adapt. The Aegis missile defense and THAAD systems should play a role in an architecture for the defense of Guam from threats beyond North Korea. But with a far more sophisticated threat than North Korea, that means deployment changes and upgrades and even greater need for our forward bases to ensure the health of strategic deterrence. The Aegis combat system is flexible, adaptable, and modular, and has great inherent ability to serve in this capacity. For THAAD, currently in planning and development are a larger booster for the THAAD interceptor and use of a two-color seeker allowing for the intercept of a wider range of advanced threats. Additionally, integration of the PAC-3 MSE interceptor into the THAAD system, provides a second layer of defense and engagement opportunities at a lower altitude.

Japan had plans to deploy Aegis Ashore for its own homeland defense against the North Korean threat, and Tokyo's cooperation with Washington on the SM-3IIA missile defense system has been an example of great alliance collaboration, especially in the face of Chinese opposition to its deployment. Causing some concern, Japan suddenly announced a pause in its Aegis Ashore deployment, citing cost and local population concerns. Those are matters for Japan to work out domestically, but it would be a mistake to eschew the initiative to build out a robust missile defense architecture, and so the faster they can resolve the issues, the better. As the threats from China grow, U.S.-Japan close cooperation on the missile defense mission will be foundational to preserving peace. And it is because of the China threat that this suspension in the Aegis Ashore deployment provides an optimal time for Japan to consider how to integrate and supercharge its missile defense architecture to handle not just the missile threats from North Korea, but explicitly from China's growing and increasingly sophisticated arsenal as well.

As for the United States, another necessary venture for defense for the most sophisticated threats is the Space Development Agency's Hypersonic and Ballistic Tracking Sensor (HBTSS). Current land and sea-based interceptor systems even when integrated are inadequate for detecting and tracking certain types of sophisticated Chinese missile threats. We need HBTSS, a proliferated constellation of space sensors in low earth orbit meant to detect and track the hypersonic threats. There is precious little money for HBTSS in the Pentagon's request to Congress. Until the country has it, we remain unable to detect and track Chinese hypersonic threats throughout the course of their flight, an unacceptable risk.

The Senate Armed Services Committee recently passed the National Defense Authorization Act, which included a bipartisan project to build a Pacific Defense Initiative (PDI), spearheaded by Sen. Jim Inhofe (R-Okla.) the committee's chairman, and the ranking Democrat, Sen. Jack Reed (D-R.I.). This initiative would seek to establish a framework for prioritizing and funding to do the necessary shift to the Indo-Pacific Theater and is modeled after the European Deterrence Initiative, meant to bolster offense and defense, and U.S. and ally cooperation, in order to deter Russia's revanchist aspirations.

We have yet to see what the Appropriators will include for the PDI, but the Senate's recent action is an encouraging development.

The sooner the United States can establish more robust, better defenses of our critical bases and assets—none more than the U.S. island of Guam—while demonstrating through testing our ability

to strike Chinese valuable targets, the better and more effective the U.S. deterrent. And that means protecting Americans and providing a bulwark against the CCP's threats to a free and open Indo-Pacific region, and therefore, the American way of life.

Rebecca L. Heinrichs is a senior fellow at Hudson Institute where she specializes in nuclear deterrence and missile defense.

<https://nationalinterest.org/feature/deter-war-china-defend-guam-164513>

[Return to top](#)

European Leadership Network (London, U.K.)

Russia's Basic Principles and the Cyber-Nuclear Nexus

By Dmitry Stefanovich

July 14, 2020

Russian doctrine

June 2020 saw the public release of the Basic Principles of State Policy of the Russian Federation on Nuclear Deterrence – for the first time ever, as previous versions of this document were classified. This has implications for how adversaries should interpret Russian concerns over potential threat.

The Basic Principles is not a war-fighting manual (those generally do not deal with such conceptual areas), nor a declaration. Its main importance is in the broadening of nuclear-related sections of the 'general' Military Doctrine of the Russian Federation (1). It is a specific type of strategic planning document, regularly prepared and updated for different areas, including civilian, and is used as a basis for development and acquisitions planning, the legislative process and other bureaucratic work.

Without diving deep into questions of nuclear deterrence, and the roles of nuclear and non-nuclear capabilities, it is important to take note of the conditions set out in the Basic Principles document that might lead to nuclear use by Russia.

In general, the list of conditions follow the traditional Russian approach: nuclear weapons prevent the use of Weapons of Mass Destruction and/or large-scale aggression against Russia and/or her allies. However, there is an important update. Now threats to the nuclear weapons themselves are considered a condition for nuclear retaliation. This is a new as compared to the formulas that exist in the Military Doctrine.

Paragraph 19c of the Basic Principles states: *“attack by an adversary against critical governmental or military sites of the Russian Federation, disruption of which would undermine nuclear forces response actions”*. This effectively means any interference of any kind against civilian or military infrastructure, which would undermine nuclear retaliation capability. There is a wide consensus within the Russian expert community that this also includes possible cyber threats as well as other non-nuclear dangers. It is commonly understood that “critical sites” include military and civilian government command posts, nuclear forces battle management system, nuclear forces infrastructure and early warning systems. Malicious interference with these sites could lead to catastrophic consequences.

Perception of cyber threats

In general, the threat of cyberattack against Nuclear Command, Control and Communications (NC3) have been discussed at length over last several years with all of the five nuclear weapon

states seemingly factoring this threat into their deterrence policies.

In the United States, a formulation similar to that of Russia's is included in the 2018 US Nuclear Posture Review: *"Significant non-nuclear strategic attacks include, but are not limited to, attacks on the U.S., allied, or partner civilian population or infrastructure, and attacks on U.S. or allied nuclear forces, their command and control, or warning and attack assessment capabilities."*

It is challenging to find links between cyber threats and nuclear use in public Chinese documents, especially given the No First Use policy declared and maintained by Beijing. Nevertheless, there are statements comparing consequences of cyber attacks to those of nuclear bombs. Research of the entanglement between non-nuclear and nuclear weapons related systems suggests that there is a serious cyber 'flavour' in such risks, and China must be looking for ways to address those.

French "vital interests" that are protected by nuclear weapons are intentionally ambiguous, but Paris pays great attention to the cyber domain. The link between cyber and nuclear threats is mentioned among the principles of the Paris Call for Trust and Security in Cyberspace.

While in the UK the possible cyber threat to NC3 and nuclear weapons systems themselves is acknowledged by officials, nothing suggests that such attacks might be considered among "the most extreme threats" to be deterred by nuclear weapons. However, London, without any doubt, will be interested in reducing the risks of nuclear use as a result of cyber interference.

Decision-makers and military must now account for the use of cyber weapons, hostilities in cyberspace, and the desire of state and non-state actors to gain an advantage by damaging nuclear weapons and the delivery systems of their adversaries. The vulnerability of nuclear weapons control systems is 'enhanced' by the high readiness of the nuclear forces. Theoretically, a crushing 'decapitating' and even 'disarming' strike could be delivered using cyber weapons. At the same time, awareness of the risk of a cyberattack incentivizes the need to increase the protection of nuclear forces-related networks from acts of unlawful interference, regardless of their source, which contributes to maintaining security.

Understanding the threats, relative symmetry between the US and Russian 'declarations' and understanding of the challenge by China, France and the UK provides an opening for potential joint actions, including within the P5 format: a forum of these five countries, recognized as nuclear-weapon states within the Nuclear Nonproliferation Treaty. One such action could be a statement of mutual understanding of the consequences of the interference with NC3 and aspiration to avoid actions that might be perceived as such interference by adversaries and partners.

There is no need to focus explicitly and exclusively on the cyber domain of non-nuclear attacks. P5 countries should attempt to define the crucial elements of their nuclear and other strategic weapons enterprise, any impact on which might lead to nuclear retaliation. For example, some states, or even all of them, may make it clear that they consider a serious threat posed by the use of electronic warfare capabilities for the purpose of "deceiving" the early warning and missile defense systems. This also will show that the line between cyber- and electronic warfare is blurry, to say the least.

Challenges and opportunities

There is a significant challenge with dealing with risks in the cyber domain, namely the attribution of the 'perpetrator'. This is complicated by the fact that near-identical cyber tools can be used for espionage (collecting information) as well as for attacking the systems they have penetrated. A discussion on procedures for attack attribution and cyber weapon 'dissection' within the P5 might offer a platform for practical cooperation. Still, the main challenge is traditional: political will, or rather absence of such to participate in such discussions. 'Cyber' has become a toxic subject in relations between Russia, China and 'the West' due to mutual accusations and counter-accusations

over election meddling, espionage and other 'grey area' actions. It will be naïve to expect a swift breakthrough. Nevertheless, cyberspace is officially becoming an operational domain for the military. Counterintuitively, it paves a way towards confidence building and risk reduction measures akin to 'classic' military domains. The nuclear domain is where such measures are of existential importance, so P5 countries should be ready for selective engagement.

The P5 format provides the best possible forum for inclusive discussions on nuclear doctrines and threat perceptions. Given the growing common understanding of the nexus between cyber and nuclear risks, the P5 countries can come up with a set of basic principles that deter nuclear use. The major principle should be to avoid making statements and building or acquiring weapons that might be seen as a push towards obtaining the very capability their P5 partners and adversaries are concerned with: to undermine nuclear retaliation capacity. Such principle could be augmented with another one: a requirement to explain intended missions for the capabilities that are perceived as threatening, should any P5 country express such concerns. Addressing the cyber-nuclear nexus therefore offers an unexpected opening for P5 collaboration and preserving the stability of deterrence between the nuclear weapon states.

(1) An updated version of the Military Doctrine is expected in 2020, or early 2021.

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's aim is 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/russias-basic-principles-and-the-cyber-nuclear-nexus/>

[Return to top](#)

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."

DISCLAIMER: Opinions, conclusions, and recommendations expressed or implied within are solely those of the authors and do not necessarily represent the views of the Air University, the United States Air Force, the Department of Defense, or any other US government agency.