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## Feature Item

***“Russian Nuclear Forces and Prospects for Arm Control”***. By Austin Long. Published by the RAND Corporation; June 21, 2018

<https://www.rand.org/pubs/testimonies/CT495.html>

In the eight years between the Obama and Trump Administrations’ Nuclear Posture Reviews (NPRs), U.S.-Russia relations have grown increasingly confrontational, as vividly demonstrated in the arenas of nuclear forces and arms control. Two events underscore how dramatically relations have worsened. In April 2010, then-Presidents Dmitri Medvedev and Barack Obama signed the New Strategic Arms Reduction Treaty (New START) to much fanfare. In contrast, in March 2018, Medvedev’s successor (and predecessor), Vladimir Putin, revealed two new Russian strategic nuclear delivery systems not covered in the text of New START.

In this statement, I draw upon unclassified sources to summarize developments in Russian nuclear forces and strategy over the past eight years as well as some of the factors driving those developments. I will then discuss the implications of Russian nuclear developments for arms control.

## TABLE OF CONTENTS

### NUCLEAR WEAPONS

- [Why a Nuclear-Armed Eurofighter Might Spell Big Trouble for the F-35](#) (The National Interest)  
The move might signal that Germany does not want to purchase America's F-35 Joint Strike Fighter.
- [Satellite Images Show North Korea Upgrading Nuclear Facility](#) (CNN)  
The images stand in stark contrast to Trump's recent declaration that the North Korean regime no longer poses a nuclear threat, even though the meeting produced no verifiable proof that North Korea will discontinue its nuclear program.
- [B-21 Program Approaching Critical Design Review](#) (National Defense Magazine)  
The Air Force's secretive B-21 stealth bomber project is expected to undergo a critical design review in the coming months, a top service official said June 25.
- [Half-century at Minot AFB](#) (Minot Daily News)  
The missile wing and the bomb wing at Minot Air Force Base are celebrating their 50th year since arriving here.

### US COUNTER-WMD

- [The DNA Cops Who Make Sure the World's Deadliest Viruses Aren't Rebuilt](#) (Bloomberg)  
Ginkgo Bioworks is helping stop a new class of lethal biological weapons from being created.
- [Government Watchdog Says Nuke-Detection Plan under Trump, Obama is Lacking](#) (Defense News)  
The Government Accountability Office's review of the nuclear proliferation-detection plan found it "generally did not address reporting requirements" required by law.
- [Defense Secretary Highlights Alaska's Strategic Military Role during Eielson Visit](#) (KTOO Public Media)  
Mattis spoke at a news conference Monday morning at Eielson Air Force Base, after a tour of the missile-defense facility at Fort Greely.
- [U.S. Still Considering Ravenna for Missile Defense Site](#) (Canton Repository)  
Camp Ravenna Joint Military Training Center is competing with Fort Custer Training Center near Battle Creek, Michigan, and Fort Drum in upstate New York, north of Syracuse.

### US ARMS CONTROL

- [UN: Iran Nuclear Deal at 'Crossroads'](#) (VOA)  
The U.N.'s political chief said Wednesday that the Iran nuclear deal was at a "crossroads" after the U.S. withdrawal last month from the international agreement.
- [Iran is Changing, but Not in Ways Trump Thinks](#) (New York Times)  
Mr. Trump said this month that Iran is changing its behavior in the region, implying that its leaders had been chastened or cowed by the American move and were pulling back.
- [IAEA Labs Do the Meticulous, Unsung Work Behind Nuclear Inspections](#) (Reuters)  
While the U.N. atomic watchdog's inspectors travel the globe to check that countries are not secretly developing nuclear weapons, that work hinges on meticulous analysis by two laboratories nestled in the Austrian countryside.

## COMMENTARY

- [The Forgotten Side of Arms Control: Enhancing U.S. Competitive Advantage, Offsetting Enemy Strengths](#) (War on the Rocks)  
The relationship between arms control and offset strategies has been obscured because most accounts of U.S. arms control policy ignore its competitive dimensions.
- [Trump Must Beware of Declaring 'Mission Accomplished' on North Korea](#) (The Hill)  
While tensions with North Korea — at least for the moment — have subsided, history tells us that Pyongyang's promises are about as disposable as toilet paper.
- [No Surprise: The Bomb Has Made a Bad Situation Worse in South Asia](#) (The National Interest)  
Testing nuclear devices opens up a Pandora's box of requirements that can be relieved only by accepting a modus vivendi with an adversary or by accepting minimal deterrence from the competition.

# NUCLEAR WEAPONS

The National Interest (Washington, D.C.)

## **Why a Nuclear-Armed Eurofighter Might Spell Big Trouble for the F-35**

By Zachary Keck

June 26, 2018

*The move might signal that Germany does not want to purchase America's F-35 Joint Strike Fighter.*

Germany has officially asked the United States to explore certifying its Eurofighter aircraft to carry tactical nuclear weapons. The move might signal that Berlin does not want to purchase America's F-35 Joint Strike Fighter.

Under NATO's nuclear sharing arrangement, the United States bases tactical nuclear weapons in various countries in Europe. In the event of a conflict, Washington would release these weapons (the B61 gravity bomb) to the host nations, which would deliver them using their own nuclear-capable aircraft (flown by pilots trained in nuclear missions).

Germany's Air Force, the Luftwaffe, is one of the NATO countries that hosts U.S. tactical nuclear weapons and is equipped with delivery systems. In specific, the Luftwaffe has designated its Tornado fighters as its dual-use aircraft (i.e. ones capable of both conventional and nuclear missions). Although Berlin has around 85 Tornado fighters, these are rapidly aging and scheduled to be retired in 2025.

Germany is known to be considering four different aircraft to replace the Tornados: the F-35, Boeing's F-15 Eagle, Boeing's F/A-18E/F Super Hornet and an upgraded Eurofighter. It is believed that the United States would prefer Germany to select the F-35A as its next dual-use aircraft, although Washington does not officially take a position. Besides the fact that this is an American plane, the United States and other European partners have decided to make the F-35A their next dual-capable fighter. Thus, it is already being certified. At the same time, the F-15 and F/A-18 are also American planes and have both been certified to carry the B61. What really distinguishes the F-35 is that it is a fifth generation fighters with stealth capabilities.

On June 20, however, Reuters reported that Germany is pushing the United States to consider certifying the Eurofighter as a dual-use aircraft. "Germany's defence ministry sent a letter to the U.S. Defense Department in April asking whether certification of the European jets was possible, how much it would cost, and how long it would take," Reuters reported, citing "sources familiar with the matter." The same article added that "top U.S. Air Force and Pentagon officials are working to respond to the German query."

Timing is important here. Airbus, which makes the Eurofighter along with Britain's BAE Systems and Italy's Leonardo, claims the plane could be certified by 2025 when the Tornados are set to be retired. But a German military source told Reuters that the U.S. government has suggested certification could take between seven to ten years because first Washington must certify the F-35.

Although the Eurofighters can almost certainly be modified to carry the B61, the biggest question is whether the fighter jets will be able to survive on a nuclear mission to Russia given Moscow's growing air defense capabilities. The Eurofighter is often described as a 4.5 generation fighter, meaning that it lacks stealth. Boeing, which makes the F-15 and F/A-18, as well as the Eurofighter consortium, argue that their fourth-generation jets will work as long as they make use of jamming capabilities.

Others have doubts. Gary J. Schmitt of the American Enterprise Institute has written that by selecting the Eurofighters “you are asking a Luftwaffe pilot to bring a knife, albeit a very capable knife, to a gunfight.” Similarly, Daniel Gouré, a former Pentagon official who is now a senior vice president at the Lexington Institute, has argued : “the ability of the Typhoon, like all fourth-generation fighters, to penetrate Russia’s integrated air defenses is already questionable. Because the nuclear deterrent mission must be credible from the outset of hostilities, before Russian air defenses have been attrited, the use of fourth-generation aircraft in this role is increasingly nonviable.”

The German Air Force itself is known to strongly favor purchasing the F-35. Lieutenant General Karl Muellner, the former chief of staff of the Luftwaffe, repeatedly made the case that his service needed to replace the Tornados with the F-35s. Stressing the “changing nature of warfare,” Muellner told Reuters in November of last year that the Tornados’ successor must be “low-observable, and able to identify and strike targets from a great distance.” In case there was any ambiguity of what he meant, Muellner added: “It will have to be a fifth-generation jet to meet the full spectrum of our needs.”

This was not a one time event. Muellner repeatedly stressed publicly that his service wanted the F-35. “The Luftwaffe considers the F-35’s capability as the benchmark for the selection process for the Tornado replacement, and I think I have expressed myself clearly enough as to what the favorite of the air force is,” he told reporters last year. This pitted him against the Ministry of Defense, which is known to favor the Eurofighter. Muellner refused to stop speaking out about the F-35 and earlier this year he was fired for it.

Of course, Germany can’t fire the United States if it refuses to certify the Eurofighter or slow rolls the process. But Berlin could decide not to provide dual-use aircraft to carry U.S. tactical nuclear weapons. This was a concern of the U.S. Air Force not too long ago.

<http://nationalinterest.org/blog/the-buzz/why-nuclear-armed-eurofighter-might-spell-big-trouble-the-f-26420>

[Return to top](#)

CNN (Atlanta, Ga.)

## **Satellite Images Show North Korea Upgrading Nuclear Facility**

By Zachary Cohen

June 27, 2018

Washington (CNN) — New satellite images show North Korea has made rapid improvements to the infrastructure at its Yongbyon Nuclear Scientific Research Center -- a facility used to produce weapons-grade fissile material, according to an analysis published by 38 North, a prominent North Korea monitoring group.

Captured on June 21, the photos reveal modifications to the site's plutonium production reactor and the construction of several support facilities -- long-planned upgrades that were already underway before North Korean leader Kim Jong Un and US President Donald Trump met in Singapore earlier this month.

When contacted by CNN about 38 North's analysis, the Unification Ministry said they "cannot confirm the report" and are "watching it closely."

The report states that "continued work at the Yongbyon facility should not be seen as having any relationship to North Korea's pledge to denuclearize," but the photos suggest that Pyongyang continues to proceed with business as usual when it comes to maintaining its nuclear sites following the summit.

"No change is actually a pretty significant story ... this is still an active site producing plutonium for North Korea," according to Jeffrey Lewis, a professor at the Middlebury Institute of International Studies.

The images stand in stark contrast to Trump's recent declaration that the North Korean regime no longer poses a nuclear threat, even though the meeting produced no verifiable proof that North Korea will discontinue its nuclear program.

Secretary of State Mike Pompeo said Wednesday that North Korea remains a nuclear threat, but defended Trump's previous comment.

"I'm confident what he intended there was we did reduce the threat," said Pompeo. "I don't think there's any doubt about that. We took the tension level down."

"I think his point was a fair one," he added. "For the moment, we have reduced risk."

But Trump has repeatedly mischaracterized the nature of his deal with Kim, insisting last week that the North Korean dictator had agreed to begin "total denuclearization" right away.

In reality, the document he signed with Kim at their June 12 summit in Singapore only reiterated North Korea's previous commitment to "work toward complete denuclearization of the Korean Peninsula," and the new images released Wednesday align with Defense Secretary James Mattis' assessment that Pyongyang remains in a holding pattern as negotiators discuss the next steps in talks.

"The summit pledge is important, but it was not a written agreement that laid out what the North Koreans have to do -- that doesn't exist right now, so I'm not surprised they are continuing to operate their facilities," said Joel Wit, a Senior Fellow at the Stimson Center and Director of 38 North.

Adam Mount, a senior fellow and director at the Federation of American Scientists, agreed that the images indicate that North Korea will continue to support the foundation of its nuclear program until the two sides are able to agree on specific terms.

"Because Kim Jong Un has so far avoided making a commitment to halt research and development activities, the changes are not a success or failure of the diplomatic process, but simply a signal that North Korea's nuclear infrastructure remains fully in use," Mount told CNN.

"That Yongbyon continues to receive scarce funds speaks to its continued value to the regime. There is little indication that North Korea has halted research, development, or production of nuclear systems even as talks continue," he added.

North Korea also maintains other nuclear facilities where they produce the bulk of their nuclear weapons materials and missiles. While these sites cannot be detected by monitoring groups, they are assumed to remain operational, according to Wit.

Trump has often pointed to the absence of North Korean missile and nuclear tests in recent months as a sign of progress toward denuclearization, but continued maintenance of facilities like Yongbyon show that talks with the US have not yet prompted Kim to take significant steps toward truly dismantling the foundation of his program.

"Both secret and Yongbyon facilities can continue operating and expand the fissile material stockpile," Vipin Narang, an associate professor of political science at the Massachusetts Institute of Technology who studies nuclear proliferation, told CNN.

"We have no way to stop this or verify any pledges to freeze," he said, noting that Kim has intentionally only agreed to freeze full blown testing, not production.

North Korea can also continue to improve its warhead and ballistic designs without conducting tests, Narang added.

"North Korea has had a decade-long nuclear testing sequence where they have presumably learned a lot about designs," he told CNN. "They probably do not need full blown tests to go into serial production of warheads. And they can improve components and perfect designs with subcritical and hydrodynamic tests which we wouldn't be able to monitor or detect."

Ultimately, 38 North's analysis of these images provides a realistic look at the current state of North Korea's nuclear program amid talks with the US and the challenges facing negotiators tasked with achieving denuclearization -- a process for which Pompeo has refused to offer a timeline.

"We should remain skeptical that North Korea's nuclear calculus has changed dramatically. Every indication since the beginning of the year is that Pyongyang is seeking to exploit diplomacy to its advantage, including by continuing to improve its arsenal," Mount told CNN. "Halting a clearly-defined list of weapons activities should be the first step in negotiations."

"What is needed now is sustained and direct negotiations between the two sides on a framework for phased steps on denuclearization, as well as concrete steps toward a peace regime on the Korean peninsula," according to Kingston Reif, director for disarmament and threat reduction policy at the Arms Control Association.

"So far, such a framework has not been established. In other words, there is no 'deal,'" he said.

CNN's Laura Koran in Washington and Sophie Jeong in Seoul contributed to this report

<https://www.cnn.com/2018/06/27/politics/north-korea-infrastructure-improvements-nuclear-facility/index.html>

[Return to top](#)

National Defense Magazine (Arlington, Va.)

## **B-21 Program Approaching Critical Design Review**

By Sonja Jordan

June 25, 2018

The Air Force's secretive B-21 stealth bomber project is expected to undergo a critical design review in the coming months, a top service official said June 25.

The review, also known as a CDR, is a key technical assessment for major acquisition programs.

"We haven't done CDR yet [but] we are on our way to critical design review," said Randy Walden, director and program executive officer for the Air Force Rapid Capabilities Office, which is shepherding the B-21 program.

"I suspect it will be done before the end of the year. That's our plan today," he said during remarks at an Air Force Association event in Arlington, Virginia.



The B-21 Raider is one the Defense Department's top acquisition priorities. Northrop Grumman is the prime contractor for the effort.

The Pentagon hopes to begin fielding the platform by the mid-2020s or sooner. The program was put under the purview of the Air Force Rapid Capabilities Office to try to speed up the development process.

Walden said the service already has a model of the B-21 that has undergone wind testing.

"Any aircraft program that's going through development, you're going to wind tunnel testing, we're no different," he said. "You're going to go from an estimate on a piece of paper and drawings, to [doing] the right things that can get you to build out the system, and wind tunnel testing is one of them. And we're following that line because it makes sense from an engineering point of view."

Procedures like wind tunnel testing are "predictive" and can help engineers solve problems before platforms are built, he noted.

"Engineering predictions are made, you go in here and the moment you start getting some insight into actual lab testing, it informs you on what the answer should be," Walden said.

Program officials have been doing "component-level work," he said.

"That leads into the integrated work, that leads into full flight test, that leads into operational test, then into production," he added. "We're ... getting a good feel for each of the components [that are] probably going to be integrated" into the platform.

The aircraft is expected to be able to penetrate sophisticated enemy air defenses and carry conventional or nuclear weapons. The next-generation bomber has been projected to cost about \$550 million per aircraft. The Air Force plans to buy at least 100 of them as the Pentagon prepares for potential conflicts against high-tech adversaries like China and Russia.

Officials have kept many details about the program under wraps.

"There are adversaries out there that want to know what we're doing, and are probably going to great lengths to try to get to that level of insight," Walden said. "We're doing everything we can to prevent that" sensitive information about the B-21 from being revealed, he added.

<http://www.nationaldefensemagazine.org/articles/2018/6/25/b-21-program-approaching-critical-design-review>

[Return to top](#)

Minot Daily News (Minot, N.D.)

## **Half-century at Minot AFB**

By Eloise Ogden

June 24, 2018

*Happy 50th anniversary missile and bomb wings*

MINOT AIR FORCE BASE – The missile wing and the bomb wing at Minot Air Force Base are celebrating their 50th year since arriving here.

According to Minot AFB information, Monday is the 50th anniversary of the arrival of the 91st Missile Wing on June 25, 1968. The 5th Bomb Wing arrived at the base a month later on July 25, 1968.

The names of both wings have changed since their arrival at the base 50 years ago. Initially, the missile wing was the 455th Strategic Missile Wing and the bomb wing was the 450th Bombardment Wing.

The wings' anniversaries were acknowledged with anniversary cake served at the picnic meal during Military Day at the Zoo held Friday in Minot's Roosevelt Park.

According to Minot Daily News files and Minot AFB history:

#### 91st Missile Wing

The Air Force awarded the contract to Boeing for the Minuteman missiles in 1958. In July 1963, a ceremony with military and civilian officials was held at a launch control center four miles north of Renville Corner to mark the end of \$82 million worth of construction on the 150 missile silos and 15 launch control centers in the Minot missile field. The construction phase ended 50 days ahead of schedule.

Work had started on the Minot missile complex in January 1962 following an award of a multi-million dollar contract to Peter Kiewit Sons Co. of Omaha. During those 18 months, men and machines poured 165,150 cubic yards of concrete – “enough to lay a concrete highway 21 feet wide and 6 inches thick from Minot to Bismarck,” the Minot Daily News reported.

“Workers accumulated 9,000,000 manhours and vehicles traveled 50,000,000 miles while machines gouged holes in the earth for the missile silos that would measure more than two miles in depth” ..., the newspaper said.

Construction on the complex started in the Velva area with work spreading through eight counties forming a semi-circle around Minot AFB.

Work done during the construction stage was valued at \$82 million with the total cost of the complex, when all the electronic equipment in place, estimated at \$135 million, excluding the missiles themselves.

The first of the 150 Minuteman I missiles arrived from Hill AFB, Utah, on Sept. 9, 1963, and was placed in launch facility A-02 on Sept. 9, 1963. The following April the missile wing became combat ready.

“When all 150 are in place, they will become ‘silent sentinels’ beneath the earth, never to see life unless the nation goes into a nuclear war,” the newspaper said.

Later the Minuteman I missiles were replaced with the Minuteman III missiles, with the Minot missile wing to become the first wing in the Air Force to convert to the newest model of ICBMs. The 741st Strategic Missile Squadron became the first operational Minuteman III squadron in December 1970, and the entire wing was converted by December 1971.

#### 5th Bomb Wing

One of the oldest military aviation units in the world, the 5th Bomb Wing has been at Minot Air Force Base since July 25, 1968.

Some of the first B-52H models made were assigned to the Minot wing, many of which were to see service in the skies over Vietnam.

The first B-52 arrived at Minot AFB on July 16, 1961, with an appropriate celebration held for the “Peace Persuader.” Maj. Clyde Evely flew the first B-52 to the Minot base. A few months later, he and his crew set a record in a Minot AFB B-52, flying 12,532.28 miles from Kadena Air Base in Okinawa, Japan, to Madrid, Spain.

One of the most memorable days in the history of the then 450th Bomb Wing occurred when the late President John F. Kennedy personally commended the crew of the wing after the men smashed more than a dozen international air records in their non-stop flight from Okinawa to Spain.

Within five months after the first B-52H arrived, the Minot base received its first Hound Dog missile to give the B-52 its first stand-off capability. The base was one of the first bases to get the B-52H model and, according to Col. Harold Radetsky, an early day bomb wing commander at the Minot base, the B-52 was the “most devastating offensive weapon in our country’s arsenal” in 1961.

Both the missile wing’s Minuteman IIIs and the bomb wing’s B-52s have continued to be modernized.

The missile wing has gone through a number of name changes over the years as well as command changes. On Dec. 1, 2009, the 91st Missile Wing officially transferred from Air Force Space Command to the Air Force’s newest major command focusing on the nation’s nuclear enterprise, Air Force Global Strike Command.

The bomb wing also has had changes during its existence. On Feb. 1, 2010, the bomb wing transferred from Air Combat Command to Air Force Global Strike Command.

Today, Minot AFB is the only base with dual nuclear-capable wings. Col. Bradley Cochran is the commander of the 5th Bomb Wing and Col. Colin Connor is commander of the 91st Missile Wing.

<http://www.minotdailynews.com/news/local-news/2018/06/half-century-at-minot-afb/>

[Return to top](#)

## US COUNTER-WMD

Bloomberg (New York, N.Y.)

### **The DNA Cops Who Make Sure the World’s Deadliest Viruses Aren’t Rebuilt**

By Rebecca Spalding

June 27, 2018

*Ginkgo Bioworks is helping stop a new class of lethal biological weapons from being created.*

Genetic engineering could help produce more resilient crops and more effective vaccines. Some fear that it could also be used to make a biological weapon.

In January, a small research team at the University of Alberta engineered a cousin of the lethal smallpox virus called horsepox, using strands of DNA they received in the mail. The organism that they built wasn’t a threat to humans.

But when the scientists published their findings in scientific journal PLOS ONE, an uproar ensued.

The study’s publication “crosses a red line in the field of biosecurity,” wrote Gregory Koblenz, a professor in the biodefense department at George Mason University, in a public comment to the journal. “The synthesis of horsepox virus takes the world one step closer to the reemergence of smallpox as a threat to global health security.”

Smallpox was eradicated by 1980, after generations of research and immunization; many Americans born before 1972 have smallpox vaccination scars. The disease, which once killed about a third of the people it infected, is considered so dangerous that only two laboratories in the

world—one at the Centers for Disease Control in Atlanta and one in Siberia—are permitted by the World Health Organization to store samples of it.

For years, bioethicists and security experts have debated whether those closely guarded samples should be destroyed. But the widespread availability of the basic building blocks of life online means bad actors may not have to break into a remote lab and steal a smallpox virus sample to unleash a devastating act of biological terrorism. They may be able to assemble it themselves.

To help curtail the threat, the U.S. intelligence community, which has been tracking the potential for new biological technology to be used for nefarious ends for years, is working with a Boston-based company, Ginkgo Bioworks, that makes some of the most innovative genetic products in the world to help prevent a new class of dangerous biological weapons from ever being built.

“We became concerned about engineered pathogens in the 1990s,” said Andy Weber, a former assistant secretary of defense for nuclear, chemical and biological defense programs in the Obama administration. He now advises the private sector, including Ginkgo. “Frankly the science has caught up to these concepts.”

Using a technology called synthetic biology, a marriage of biology and engineering that allows researchers to construct genes in a lab, a scientist could theoretically make present-day illnesses more virulent or drug-resistant, or revive long-eradicated ailments such as bubonic plague or the Spanish flu. The fear is, without proper oversight, this could be done using genetic material acquired online. That possibility has made people who track emerging security threats sit up and take notice. They worry that such innovations could be used to make a biological weapon.

To be sure, reawakening dormant diseases currently requires significant scientific expertise and laboratory resources. Only state actors have been thought to use such techniques, according to security experts. However, the pace of innovation is quickening: Several companies can now tailor strands of DNA in ways that could revolutionize fields from agriculture to fragrances to medicine—and be profoundly dangerous in the wrong hands.

In June 2017, the Intelligence Advanced Research Projects Activity (Iarpa), a technology-research agency within the Office of the Director of National Intelligence, launched a program that it hopes will help keep cutting-edge biological technology away from bad actors.

Preventing a potential attack isn’t as simple as monitoring a list of outlawed pathogens, which would be flagged under current screening methods. It’s possible to order smaller components of a longer genetic sequence and then reassemble them in a lab to build a harmful biological agent, whether by design or by accident. There is also a fear that novel sequences could be created that would mimic the functions of harmful pathogens, but that could evade current methods.

The horsepox episode “suggests that there are risks that are present today,” said Jason Matheny, Iarpa’s director. “If someone is technically sophisticated and dedicated, someone could do a lot of damage.”

To improve screening, Iarpa officials started a program that contracted with researchers from the Battelle Memorial Institute, a Columbus, Ohio-based research group, Harvard University, Virginia Tech and others to create advanced algorithms that could flag and prevent harmful DNA orders from being completed.

In order to understand which genetic combinations might be harmful before they’re ever made in a laboratory, the Iarpa-led program brought in Ginkgo, which will develop algorithms that can predict which genetic sequences, even unknown ones, could potentially cause harm. Called FunGCAT, an acronym for Functional Genomic and Computational Assessment of Threats, the program

is seeking to create algorithms that would predict how genetic sequences are meant to function before they're ordered, even if the combination being studied is new and not seen in nature.

Ginkgo designs organisms using genetic data, coding them in much the same way computers are programmed. The company is designing microbes that can live on the roots of plants and produce nitrogen, reducing the need for chemical fertilizer in some farming. It's also working on coding microbes that produce rose oils for perfumes, no roses required.

Working from a large, loft-like office overlooking Boston Harbor, Ginkgo says it performs about 40 percent of the world's gene printing, a form of synthetic biology that makes it possible to engineer organisms that produce compounds used in common manufacturing processes. The compounds include rose oil or nitrogen fertilizer.

Synthetic biology has advanced rapidly. Ginkgo Chief Executive Officer Jason Kelly, 37, said that when he was a graduate student studying biological engineering at the Massachusetts Institute of Technology in the mid-2000s, he designed about 50,000 base pairs—the term for the two corresponding units of DNA that make up a rung of the genetic ladder.

Now, Kelly says, his company can design roughly 50 million pairs a month, thanks to faster and cheaper sequencing techniques. Being able to generate so much genetic material may mean being able to rapidly develop vaccines to respond to new pathogens or prototype experimental medications more quickly, according to the company.

"The rate that you can learn is just dramatically higher. There's just no comparison," he said.

Ginkgo quickly saw the potential security risks in its work. It began working with Weber, the former Obama administration official, in 2016 to get advice on how to best preserve national security.

"We are doing more of this genetic engineering than anybody, we think we're going to get better at it than anybody, so we have a responsibility to be keeping our eye on both sides of that coin," Kelly said. "How do we protect and defend against that while protecting our ability to get all the positive outputs of biotechnology?"

Asha George, executive director of the Blue Ribbon Study Panel on Biodefense, said it's a good sign that Iarpa is getting involved before synthetic-biology technology becomes more widespread. She said biosecurity issues don't receive the attention and resources they merit.

"The amount of effort we're still putting toward the nuclear threat, the chemical threat, the incendiary threat is so much more than the United States government—or any government, for that matter—is putting towards bio-preparedness, that's just a fact," she said. "The biological threats do not receive the same level of attention as other threats."

George said it's not possible or desirable to turn back the clock. To do so, she says, would be akin to calling to outlaw computers because of the risks that viruses pose.

"It would be like saying the industrial revolution could make machines that would produce a lot of pollution, so we're not going to engage," she said. "Can you imagine how far behind we would be as a country if we did that?"

Security experts hope synthetic biology could also counter threats from emerging diseases by offering a faster way to find and produce vaccines. Drugmakers generally do less research in infectious diseases, compared with other areas, and even in the areas for which there are vaccines, some strains, like last winter's flu, can prove resistant to treatment.

Weber hopes such vaccine research could ultimately take months, rather than decades, with the help of synthetic biology. But while he sees the Iarpa program as a step forward in general, he believes that overall, the country is unprepared.

“[Are] the U.S. government and other governments investing sufficiently against this threat? I think the answer is a resounding no,” he said. “Whether that’s preparedness against the next Spanish flu pandemic or against bioweapons, we’re under-invested as a country in terms of countering these threats.”

<https://www.bloomberg.com/news/features/2018-06-27/these-dna-cops-make-sure-deadly-viruses-don-t-get-rebuilt>

[Return to top](#)

Defense News (Washington, D.C.)

### **Government Watchdog Says Nuke-Detection Plan under Trump, Obama is Lacking**

By Andrew C. Jarocki

June 25, 2018

WASHINGTON — A new government watchdog report says the U.S. government’s plan for detecting nuclear proliferation is lacking in detail, raising questions about government’s ability to effectively monitor foreign nuclear programs.

The Government Accountability Office’s review of the nuclear proliferation-detection plan found it “generally did not address reporting requirements” required by law.

The 2015 (and the 2017) National Defense Authorization Act mandated the president develop and submit an “interagency plan and road map for verification and monitoring” of nuclear weapons. The plan needed to include a research and development program to improve “in-field inspection” capabilities.

Disputes over verification was central to the debate over the Iran deal and is proving a topic of discussion in negotiations with North Korea.

The report noted that “neither the 2015 plan [under the Obama administration] nor the 2017 update included a specific engagement plan for improving inspections and monitoring.”

While the Trump administration was given credit for coming up with recommendations and possible action plans, such as intelligence sharing with partners Israel and Japan, the report was critical of the lack of detail elsewhere.

The exact coordination between relevant agencies, resource sharing and technical capability development, such as “rapid analysis of large data sets” for effective monitoring, were absent from the plan, according to the GAO.

The U.S. State Department indicated to the GOA it did not wish to comment on the unclassified version of the report.

<https://www.defensenews.com/global/the-americas/2018/06/25/government-watchdog-says-nyke-detection-plan-under-trump-obama-is-lacking/>

[Return to top](#)

KTOO Public Media (Juneau, Alaska)

## **Defense Secretary Highlights Alaska's Strategic Military Role during Eielson Visit**

By Tim Ellis, KUAC-Fairbanks

June 26, 2018

The U.S. military increasingly relies on Alaska, the defense secretary said Monday, both to provide a base of operations to maintaining dominance of the Indian and Pacific oceans to the south and to enable the Coast Guard and Navy to maintain control of U.S. Arctic waters, to the north.

Mattis spoke at a news conference Monday morning at Eielson Air Force Base, after a tour of the missile-defense facility at Fort Greely.

Mattis stopped at Eielson during the first of a five-day trip to Asia, where he'll meet separately with Chinese, South Korean and Japanese officials.

He told reporters at Eielson this morning before resuming his trip that the military sees Alaska as the key to the U.S. military's policy of maintaining dominance of what he calls the Indo-Pacific region.

"It is probably the gateway to the Pacific in many, many ways," Mattis said.

Mattis has just returned from a quick tour of the missile-defense base at Fort Greely.

He says the interceptor missiles there constitute the cornerstone of the defense of the homeland – and two adjacent and increasingly important regions.

"The interceptors we have up here – I will just tell you ladies and gentlemen that Alaska is in many ways the absolute center of the defense of our country, for the Indo-Pacific region and certainly over the polar ice cap," Mattis said.

The secretary says the Pentagon is challenged to respond to the opening of the Arctic Ocean because of retreating sea ice, which has opened sea lanes and access to resources in the region.

Other nations, especially Russia and China, are taking advantage of that, he said, and are increasingly active in the Arctic, which the Pentagon now considers a region of growing strategic importance.

"It's cited as an area of concern with our national-security strategy, as it looks more broadly," Mattis said. "As a national defense strategy, it looks more specifically how we deal with certain other countries in the world."

Mattis appreciates Congress's efforts to support construction of six icebreakers, three heavy vessels and three medium, to replace the nation's two aging heavy icebreakers – one of which has been in drydock in Seattle for eight years now.

The U.S. needs more infrastructure to support the new vessels, he said, including a deepwater port on the Bering Sea coast. But Mattis says the nation has a ways to go to acquire the assets needed to protect U.S. interests in the Arctic.

"The reality is that we're going to have to deal with the developing Arctic – and it is developing," Mattis said. "It's also going to open not just to transport, but also to energy exploration."

Sen. Dan Sullivan, who accompanied Mattis on his flight to Alaska, says the Senate last week approved a provision in this year's National Defense Authorization Act to fund construction of the six icebreakers.

The senator said he'll work to keep that provision from being stripped out of the final version that's now being worked on in a conference committee.

Congress has already authorized a federal study on a Western Alaska port to support the new icebreakers.

"Two years ago, we did get a provision in there – again, into law – for the Pentagon and the Department of Homeland Security to look at the need and characteristics of what we determined was called a strategic Arctic port," Sullivan said.

Sullivan said in a follow-up interview that the Senate also has authorized a study of further expansion of the missile-defense base at Fort Greely beyond the project now under way that would increase the number of interceptor missiles to 60.

"Last year's bill, we did put in a provision for them to look at a study for a hundred silos there – so that would be total, a total of a hundred," Sullivan said.

Sullivan said those additional interceptors would still be needed even if U.S. negotiators secure an agreement with North Korea to give up its nuclear-tipped intercontinental ballistic missiles, the nation's defense would still require the additional interceptors.

"You still have Iran," Sullivan said. "You still have other rogue nations."

Sullivan predicts continued expansion of the base at Greely and other missile-defense facilities, including radar sites at Clear and Shemya, and more testing at the Pacific Space Launch Complex in Kodiak.

<https://www.ktoo.org/2018/06/26/defense-secretary-highlights-alaskas-strategic-military-role-during-eielson-visit/>

[Return to top](#)

Canton Repository (Canton, Ohio)

## **U.S. Still Considering Ravenna for Missile Defense Site**

By Jessica Wehrman

June 24, 2018

WASHINGTON The wait to find out if Camp Ravenna will land a much-coveted East Coast missile-defense site may soon end.

Though the Missile Defense Review — a document determining if the Department of Defense should move forward to build an East Coast missile defense site — long has been pending, a delegation from Ohio was told during a recent visit to Washington, D.C. the announcement could come within three weeks.

State Sen. Sean O'Brien, D-Bazetta, who made the trip to D.C., said multiple federal lawmakers told the delegation that the military had assured them it would decide whether to create a missile-defense system on the East Coast "in three weeks."

The lawmakers, he said, "believe they will announce which site it will be of the three." Camp Ravenna is competing for the site with spots in New York and Michigan.

Most spokesmen for Ohio members of Congress demurred when asked if they knew whether the review is to be released within three weeks, but a spokesman for Rep. Bill Johnson, R-Marietta, said the office has been told it should be coming within that period of time.



O'Brien said he's optimistic about Ravenna's chances. "With the snowfall New York and Michigan get, we have some really good reasons for it to come here to Camp Ravenna," he said. "We have the land. It's just the perfect location."

The Missile Defense Agency itself has been non-committal on the timing, with a spokeswoman saying Friday that it did not have any information to pass along but, "once the (Missile Defense Review) is released we hope to have additional information."

The state's delegation and business leaders long have lobbied to land the site, which would be capable of fending off long- and intermediate-range missiles, presumably launched from Iran or North Korea. That site, along with bases in California and Alaska, would cumulatively work to intercept any incoming missiles.

In order to make an East Coast site happen, the Trump administration would have to invest \$3.6 billion. The administration could also opt not to add a site at all, choosing instead to beef up current technology.

Camp Ravenna Joint Military Training Center is competing with Fort Custer Training Center near Battle Creek, Michigan, and Fort Drum in upstate New York, north of Syracuse.

The polluted Ravenna site was once home to the Ravenna Army Ammunition Plant, commonly known as the Ravenna Arsenal. It opened in 1942 and supplied ammunition for U.S. troops in World War II and the wars in Korea and Vietnam before closing in 1992.

In a 2016 letter to the Missile Defense Agency, the Ohio delegation said landing the project would bring 2,300 construction jobs and up to 850 full-time workers once the system is operational.

<http://www.cantonrep.com/news/20180624/us-still-considering-ravenna-for-missile-defense-site>

[Return to top](#)

## US ARMS CONTROL

VOA (Washington, D.C.)

### **UN: Iran Nuclear Deal at 'Crossroads'**

By Margaret Besheer

June 27, 2018

UNITED NATIONS — The U.N.'s political chief said Wednesday that the Iran nuclear deal was at a "crossroads" after the U.S. withdrawal last month from the international agreement.

"The secretary-general deeply regrets this setback to the JCPOA and believes that issues not directly related to the plan should be addressed without prejudice to preserving the agreement and its accomplishments," Rosemary DiCarlo, undersecretary-general for political affairs, told the Security Council during the first meeting about the deal's implementation since the U.S. announced its withdrawal on May 8.

JCPOA is the acronym for the 2015 nuclear deal, formally known as the Joint Comprehensive Plan of Action.

### Compliance verified

DiCarlo noted that the International Atomic Energy Agency had verified Iran's compliance 11 times. But she also urged Tehran to "consider carefully" international concerns about its activities that are contrary to the deal, particularly regarding ballistic missile technology and transfers to Houthi rebels in Yemen and transfers of traditional arms to militant groups in Lebanon and the Gaza Strip.

The U.N. secretary-general wrote in his latest report on the nuclear deal that Saudi Arabia had made nine allegations about ballistic missiles launched from Yemen into its territory that contained parts made in Iran. The secretary-general concluded that "some component parts of the debris were manufactured" in Iran, but that the U.N. "has not yet been able to determine" whether the missiles or their parts were transferred from Iran after the nuclear deal went into force on January 16, 2016.

"Today's report shows that Iran continues to destabilize the region through its support for terrorist groups and proxy forces," U.S. Deputy U.N. Ambassador Jonathan Cohen told the council. "With the reimposition of our sanctions, the United States is taking a stand. We have declared that Iran's actions will not go unchallenged, and we have shown that we will follow through."

### U.S. isolation

All council members except the United States expressed support for the continuation of the nuclear deal with its remaining members — Britain, France, China, Russia, Germany and Iran.

"We took note, therefore, with regret and concern of the decision made by the United States to withdraw from the JCPOA," said French envoy Francois Delattre. "But the agreement remains, and this decision should not have an impact on the implementation by the parties to the agreement of their commitments." He said France would continue to honor its commitments as long as Iran did.

The European Union oversees the agreement's implementation and had pushed hard for the U.S. to stay in the deal.

"The preservation of the JCPOA is a key security interest for the European Union, but also for the international community as a whole," said EU Ambassador João Vale de Almeida.

He said Iran's activities in the region and its ballistic missile activity were issues that fell outside the deal and should be dealt with separately. "Dismantling a nuclear deal that is working would certainly not put us in a better position to discuss other issues," he noted.

"Undoubtedly, it [JCPOA] remains a standard of a multilateral nuclear nonproliferation agreement which other initiatives still have to live up to," he added in a subtle dig at President Donald Trump, who said after his meeting earlier this month with North Korean leader Kim Jong Un that there was no longer a nuclear threat from Pyongyang.

### Impact on 'international order'

"We also believe that leaving the JCPOA undermines effective multilateralism, it undermines the rules-based international order — of which the nuclear nonproliferation regime is a very important pillar," Germany's Ambassador Christoph Heusgen told the council.

Russia's envoy, Vassily Nebenzia, criticized Washington for the reimposition of sanctions on Tehran, saying it directly violated the Security Council resolution endorsing the Iran deal.

"The step undertaken by the American side does serious damage to the nuclear nonproliferation regime and to the security interests in the Middle East," he added of the U.S. withdrawal from the nuclear deal.

<https://www.voanews.com/a/un-iran-nuclear-deal-at-crossroads-/4457991.html>

[Return to top](#)

The New York Times (New York, N.Y.)

## **Iran is Changing, but Not in Ways Trump Thinks**

By Thomas Erdbrink

June 25, 2018

TEHRAN — President Trump says his decision to leave the nuclear agreement is already having a huge impact on Iran. He is right, Iranians say, but for the wrong reasons.

Mr. Trump said this month that Iran is changing its behavior in the region, implying that its leaders had been chastened or cowed by the American move and were pulling back.

“They’re no longer looking so much to the Mediterranean,” he told reporters. “They’re no longer looking so much to what’s going on in Syria, what’s going on in Yemen and lots of other places. They’re a much different country over the last three months. Iran is not the same country that it was a few months ago. They’re a much, much different group of leaders.”

But analysts say there has been little or no change in Iran’s regional posture. The real impact to date has been on internal politics, with a repression on the slightest hints of dissent, and the economy, after the reimposition of sanctions.

“A good economic and political process was underway in Iran,” said Mirzababa Motaharinezhad, a spokesman for Mardomsalary, a moderate political group. “Unfortunately, after Trump pulled out from the deal openness ended here and a crackdown on activists resumed.”

In the region, though, it seems to be business as usual. Last week an Iranian Revolutionary Guards Corps commander, Hossein Salami, noted that Iran’s ally in Lebanon, Hezbollah, has 100,000 missiles ready to destroy Israel. In Syria, where Iran has played a crucial role in keeping President Bashar al-Assad in power, three Iranian soldiers were killed this month during battles. For the supreme leader, Ayatollah Ali Khamenei, Israel is still a “cancerous tumor” that must be removed.

“Trump has this illusion that because he left the nuclear agreement, we are forced to change our behavior in Syria, Yemen, Iraq, Lebanon and Palestine,” said Hossein Sheikholeslam, a special adviser to Iran’s foreign minister on regional issues. “No way we are doing that. If we ever change our policies, it will have nothing to do with Trump or anyone in the White House or elsewhere.”

Most Western analysts largely agree with that assessment. “Iran is rethinking its role in the region, but not because of Mr. Trump directly,” said Walter Posch, a Middle East expert at the National Defense Academy in Vienna. “Tehran is becoming overstretched. Iran thought it could hold the ground easily: getting strong in Syria, putting pressure on Israel indirectly but not provoking it to attack. But it is getting more difficult by the day.”

Far away from the conflict zones in the Middle East, in the small alleyways of Tehran’s bazaars and the luxury car dealerships in the affluent northern parts of the city, Mr. Trump’s withdrawal from the nuclear agreement has definitely added to economic woes, which are contributing to political tensions.

On Monday, protesters gathered outside the Parliament building in Tehran to complain about the economy, and the police fired tear gas to disperse them. On Sunday, the Grand Bazaar had to close because of protests.

Iran's economy already was in a bad state. In less than a year, the rial, Iran's currency, has declined by 50 percent in value against the dollar. The International Monetary Fund reported that a record amount of capital, \$27 billion, was taken out of the country last year. Ayatollah Khamenei, in a sermon recently celebrating the end of Ramadan, called upon Iranians to stop taking leisure trips abroad, to make sure no more foreign exchange leaves Iran.

The currency crisis has led to a sharp increase in the prices of imported goods. In an effort to shield their savings, many people are buying real estate, gold and cars, driving up prices of those assets.

"Finding a safe place for my savings has become nearly impossible," said Asgar Kouhpaee, 55, a tradesman who for years made his living as an egg wholesaler. He said he always kept his savings in cars, but this year he missed his chance. A Toyota RAV4, a midscale SUV model that costs around \$25,000 in the United States and sold for \$68,000 here last August, now costs around \$100,000.

"Everything has gone up, even locally produced cars are now 40 percent more expensive," Mr. Kouhpayee said. "Not only am I unable to purchase a new car, but who can afford to buy it from me with these prices?"

The prospect of new sanctions and pressure are terrifying him. "It just feels as if everything is spinning out of control," he said. "We must do something to stop this."

Such feelings are widely shared. Many people seem to be blaming their leaders, rather than President Trump or others, for most of the problems, making the government hypersensitive to expressions of dissent.

"The impact of Trump's pullout from the nuclear deal is very very low, said Reza Khandan, the husband of Nasrin Sotoudeh, a prominent human rights lawyer who was arrested last week. "Even if the nuclear agreement was fully implemented, and all the money reached here and the banking system was not under sanction, the mismanagement inside the country would have squandered the oil revenue and other transactions. We are in bad economic and social states, and it has nothing to do with Trump and sanctions he imposed or will impose "

Last week the Iranian authorities were caught off guard when an Instagram post from a former Iranian soccer star, Ali Karimi, calling for a consumer boycott was shared 800,000 times.

"Let's not buy anything from the market for a month, neither gold, nor cars nor anything that's gotten more expensive," Mr. Karimi wrote. "All of you support this until the hands of the middle men and the thieves are cut off from this country."

Mr. Karimi, who has criticized the authorities for their policies of barring women from soccer stadiums, was promptly hauled into court that handles media-related matters to explain his call for a boycott. His case is still under review.

Numerous editors, journalists and prominent figures have been summoned before the same court for questioning.

The judicial authorities have also ramped up pressure on dissidents, most notably with the arrest of Ms. Sotoudeh.

A man was hanged last Monday, convicted of killing three police officers by running over them with a bus during a protest last winter. The driver, Mohammad Salas, denied the charge, saying his confession was coerced. His lawyer, Zeynab Taheri, was arrested the day after his client's execution for undisclosed reasons.

Meanwhile, anticipating fresh protests over the economy and rising political dissatisfaction, the government has allocated four stadiums and six parks across the capital as locations for legal protest rallies.

Mr. Khamenei, the supreme leader, in his recent speech, insisted all is well. “The people are awake. They are motivated and they are not tired,” he said. “Those who promote the idea, following the enemies’ propaganda, that the people are tired and exhausted are tired themselves. They themselves are exhausted!”

<https://www.nytimes.com/2018/06/25/world/middleeast/iran-trump-nuclear-deal-protests.html>

[Return to top](#)

Reuters (New York, N.Y.)

## **IAEA Labs Do the Meticulous, Unsung Work Behind Nuclear Inspections**

By Francois Murphy

June 21, 2018

VIENNA (Reuters) - While the U.N. atomic watchdog’s inspectors travel the globe to check that countries are not secretly developing nuclear weapons, that work hinges on meticulous analysis by two laboratories nestled in the Austrian countryside.

Warning stickers are seen in the International Atomic Energy Agency (IAEA) nuclear material laboratory in Seibersdorf, Austria June 13, 2018. REUTERS/Leonhard Foeger

Samples taken in countries including Iran, where the International Atomic Energy Agency is policing the country’s nuclear deal with major powers, are sent to the IAEA’s labs in Seibersdorf near Vienna. There, state-of-the-art equipment scours them for minute traces of uranium and other chemicals.

On their visits, inspectors swipe surfaces to check for those telltale particles. They also take samples of chemicals produced and stored at declared facilities. The IAEA then checks that what it has found matches what the country has said it is doing.

“If you are for example in your kitchen and you cook something, you will always splatter something around like particles from an aerosol,” said Stephan Vogt, head of the IAEA’s Environmental Sample Laboratory, describing how nuclear work leaves telltale particles behind.

“Afterwards you clean but you will never be able to clean 100 percent. There will always be a little bit of material sticking to the surfaces and if someone else comes later on and takes a sample they can tell you what you had for dinner,” said Vogt, whose lab analyses the cloth squares swiped on surfaces.

His lab’s equipment includes powerful mass spectrometers, which break down particles to determine the precise level to which uranium has been enriched or their specific isotope.

“We’re here to basically serve as an auditor, independently verifying states’ declarations,” said Steve Balsley, head of the Nuclear Material Laboratory, which analyses uranium and plutonium samples from declared nuclear sites.

None of the samples come in with their geographical origin specified, ensuring that the scientists’ analysis is completely unbiased. The labs are also part of a broader network, with facilities in member states performing their own analyses and double-checking duplicate samples.

“Laboratory experts need to confirm that the uranium and plutonium content in the samples matches what a state has declared to the agency,” Balsley told reporters touring his lab.

<https://www.reuters.com/article/us-un-nuclear-labs/iaea-labs-do-the-meticulous-unsung-work-behind-nuclear-inspections-idUSKBN1JH2DR>

[Return to top](#)

## COMMENTARY

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

### **The Forgotten Side of Arms Control: Enhancing U.S. Competitive Advantage, Offsetting Enemy Strengths**

By John D. Maurer

June 27, 2018

In the spring of 1988, President Ronald Reagan described the Intermediate-Range Nuclear Forces (INF) Treaty as an agreement that would, “for the first time, eliminate an entire class of U.S. and Soviet missiles.” Reagan’s description of the INF Treaty as a historic and mutually beneficial reduction of nuclear arms remains the conventional wisdom. This narrative is not wrong, of course, but it is incomplete: Arms control has never been purely cooperative. Rather, the United States employed arms control negotiations to build military-technological advantages over the Soviet Union. From the 1940s onwards, U.S. leaders sought to “offset” the Soviet Union’s advantage in conventional weapons by developing advanced military technologies that their Cold War opponent did not have. Arms control played an important role in advancing this offset strategy. American leaders raced the Soviets in military technologies where the United States was perceived to enjoy significant advantages, while simultaneously entangling the Soviet Union in an arms control regime that would limit areas of Soviet strength. By combining arms racing and arms control, the United States pursued a holistic offset strategy.

The relationship between arms control and offset strategies has been obscured because most accounts of U.S. arms control policy ignore its competitive dimensions. The traditional scholarly accounts emphasize the incredible dangers of nuclear weapons, the mutual U.S.-Soviet interest in limiting nuclear competition, and the importance of this dialogue to stabilizing U.S.-Soviet relations more generally. These accounts, however, only tell half of the story. More recent historical accounts have called into question this benign interpretation, noting instead America’s long-term strategy to employ negotiations to promote its own advantages. Some of this newer scholarship has focused on the self-serving motives behind U.S. nuclear nonproliferation policy, but as more and more documents are declassified, historians are increasingly noting that the United States also employed superpower arms limitation to promote American advantages. Today, U.S. policymakers would do well to consider how arms control can contribute to sustaining America’s military-technological competitiveness.

#### The First Offset: Seeking Quantitative Parity

The United States began seeking competitive advantage over the Soviet Union through arms control from the very beginning of the Cold War. The First Offset strategy depended on maintaining overwhelming nuclear superiority over the Soviet Union. To support this objective, U.S. leaders sought to entrap the Soviets in arms control agreements that would preserve America’s lead in nuclear weapons. Because the United States enjoyed a head start in the arms race, efforts to freeze that race at any given point would have frozen U.S. nuclear advantages, sustaining the First Offset indefinitely. Indeed, America’s first major nuclear arms control proposal, the 1946 Baruch Plan, would have allowed the United States to retain its own nuclear arsenal in exchange for a promise of

eventual disarmament while banning any other country (especially the Soviets) from procuring its own nuclear weapons. Negotiations over a nuclear test ban were similarly loaded, with the Eisenhower administration seeking to prevent the Soviets from catching up to the United States in testing data, especially important for developing smaller, missile-capable warheads. The initial impetus for the Strategic Arms Limitation Talks (SALT) also involved an effort to freeze Soviet deployments of ballistic missiles and anti-ballistic missiles while the United States still retained the lead in nuclear weapons.

The Soviets rejected early American arms control proposals as nonstarters. Soviet leaders quickly concluded that nuclear weapons were essential to their national security, and rejected any framework that would deny them the same nuclear rights as the United States. Especially after their perceived humiliation during the Cuban Missile Crisis, Soviet leaders were unwilling to conclude an arms control agreement that would enshrine American advantage in number of weapons. The single major arms control success of the era, the 1963 Limited Test-Ban Treaty, was only concluded after the Soviets had caught up to the United States in atmospheric testing. In this regard, early U.S. efforts at competitive arms control were simply too transparent. Furthermore, America's disastrous intervention in Vietnam undermined both the financial and political capital necessary to sustain the arms race. By the early 1970s, the Soviets were approaching numerical parity in nuclear weapons and the First Offset was coming to an end. Perceiving the correlation of forces to be in their favor, Soviet leaders were unwilling to make serious arms control concessions to the United States.

#### The Second Offset: Qualitative Advantages

The end of U.S. numerical nuclear superiority required a new strategy for military-technological competition. American leaders embarked on a Second Offset that leveraged American advantages in electronics, precision manufacturing, and digital computing to generate sustainable qualitative military-technological advantages. As Secretary of Defense Harold Brown wrote to Congress in January 1981, "Technology can be a force multiplier, a resource that can be used to help offset numerical advantages of an adversary." Even as it necessitated a new offset strategy, nuclear parity with the Soviets allowed for greater progress in arms control negotiations, in part because it allowed American leaders to claim that the resulting agreements were "fair," even when they were promoting U.S. military-technological advantages. Within this framework of rough numerical equivalence, U.S. arms control policy advanced American advantages in three main ways: dictating the pace of key military-technological developments; promoting competition in environments more conducive to U.S. organizational and cultural advantages; and denying the Soviets the ability to respond to U.S. qualitative improvements by increasing their numerical strength.

First, arms control agreements allowed the United States to slow (but not halt) military-technological competition until more favorable political, economic, and technical circumstances emerged. The best example of manipulating the pace of competition in this way was the 1972 Anti-Ballistic Missile (ABM) Treaty. By the late 1960s, the Soviets were making rapid progress on anti-ballistic missile technology. On the U.S. side, Congress would not fund a comparable American anti-ballistic missile system, which was both too expensive and insufficiently technologically mature. In effect, the ABM Treaty limited the Soviet Union to anti-ballistic missile levels comparable to those that the U.S. Congress would allow, preventing the Soviets from pulling ahead in large-scale anti-ballistic missile deployments – an echo of earlier attempts at quantitative arms control. At the same time, the treaty promoted American qualitative advantages by allowing continued testing of new anti-ballistic missile concepts at Kwajalein Test Facility, buying time until superior American anti-ballistic missile technology matured. As Secretary of Defense Melvin Laird stated in his June 1972 testimony before the Senate Armed Services Committee, even under the treaty the United States would "vigorously pursue a comprehensive ABM technology program...[to] examine ABM

deployment options that might be exercised if permitted by future agreements, or otherwise necessary.”

By limiting both deployments and testing, the ABM Treaty allowed American leaders to postpone a key area of military-technological competition for nearly a decade. It also provided some flexibility to re-escalate that competition under more favorable political and technological circumstances in the 1980s, when the Reagan administration proposed the Strategic Defense Initiative, the distant predecessor of America’s current ballistic missile defense technology.

Second, arms control agreements allowed the United States to promote competition in environments more conducive to its organizational and cultural advantages. For instance, the INF treaty emerged as a response to the Soviet deployment of new SS-20 intermediate-range ballistic missiles, which posed a direct threat to America’s NATO allies. NATO responded by adopting the Dual-Track Decision, in which the United States deployed its own next-generation intermediate-range capabilities in Europe while also seeking an arms control agreement to eliminate the SS-20. The resulting negotiations eventually culminated in the INF Treaty.

The agreement is widely hailed as a major arms control achievement, but it is very specific in the types of weapons it limits: not all intermediate range weapons, but only land-based intermediate range weapons. Air- and sea-launched cruise missiles of any range were still allowed. Secretary of State George Shultz explained, “[The INF Treaty] eliminates the SS-20 threat which directly led to the dual track decision. It does not limit U.S. aircraft, which make a critical contribution to NATO’s defense. It strengthens deterrence by significantly complicating Soviet attack planning.” As a result, even as both sides dismantled their land-based intermediate-range missiles, the United States made rapid progress on its air- and sea-launched cruise missiles. The Soviet Union was free to compete with the United States in the naval and aerial domains, but in practice these were areas in which the United States enjoyed significant geographic, organizational, and alliance advantages. In fact, the United States repeatedly proposed arms control agreements that would incentivize the Soviets to compete against American strengths in the aerial and naval domains, whether by insisting that tactical aircraft be excluded from strategic arms negotiations, allowing replacement of land-based missiles with sea-based ones, or by insisting on permissive “counting rules” for missile-armed bombers. While on paper these proposals seemed neutral, in practice they shaped competition in ways that favored the United States. The INF Treaty was the most successful instance of this general approach.

Finally, arms control agreements denied the Soviets the ability to respond to American qualitative improvements by increasing the size of their forces. From the early 1970s onwards, American leaders pushed the Soviets to consider not just limitation but reduction of both missile numbers and size. Reduction had an obvious public motive in making the world safer from nuclear weapons. In private, however, American leaders emphasized that reducing the number and size of both sides’ nuclear weapons would prevent the Soviets from offsetting U.S. advances in weapons accuracy and reliability by doubling down on the scale of their own missile deployments. To this end, the SALT process placed absolute limits on the number of launchers, while allowing the United States to proliferate increasingly accurate warheads through technologies like multiple independently targetable reentry vehicles and air-launched cruise missiles (which did not add to the overall number of launchers). In private conversation with President Richard Nixon, Laird emphasized that under the SALT I agreement:

[The United States] can still keep ahead of [the Soviet Union]. There is a lot more we can even do with the Minuteman at the site as far as getting it even more accurate...and we can do it at a very small price, because we have the technological capability that far outstrips the Soviet Union. This is important to maintain this leadership.



However, the Soviets were reluctant to accept limits on missile size, so for a time U.S. improvements were generally offset by Soviet advantages in sheer scale, as their larger missiles could carry more warheads. The SALT II Treaty ultimately foundered in the Senate amid conservative criticism that it failed to limit the size of the Soviet missile force.

Following SALT II's failure, the Reagan administration focused once again on limiting both the number and size of missiles, the better to emphasize American advantages in smaller and more accurate weapons. In 1983 the Scowcroft Commission endorsed the deployment of a new generation of intercontinental ballistic missiles (ICBMs) as a means of incentivizing the Soviets to accept limitations on missile throw weight. Driven in part by this expanding U.S. missile force, the Soviets agreed to the first Strategic Arms Reduction Treaty (START I) in 1991. START I was consistent with America's longtime approach to arms reduction, requiring the Soviets to dismantle half of their heavy ICBMs and reduce their missile throw weight by nearly 50 percent. The treaty required no similar reductions by the United States, which had no "heavy" ICBMs and whose light and accurate missile forces were already below the agreed-upon weight limit. As with the ABM and INF Treaties, START I's seemingly neutral language in fact promoted American military-technological advantages.

START I was one of the high points of the Second Offset strategy in the nuclear realm. By preventing the Russians from matching U.S. qualitative force improvements with quantitative offsets of their own, the treaty kicked off a "New Era of Counterforce," in which the United States enjoyed superior nuclear capabilities over its Russian rival. The Second Offset was also bolstered by conventional force reductions, about which the Soviets were similarly intransigent during the 1970s, before eventually agreeing to large-scale downsizing in the Conventional Forces in Europe (CFE) Treaty. By equalizing the sizes of the two sides' nuclear and conventional forces while permitting the United States to retain a qualitative edge in practice, START I and CFE supported the Second Offset Strategy of building qualitative military-technological advantage over the Soviet Union.

### Opportunities and Challenges

From the perspective of the competitive offset, arms control has a mixed track record, but one worth pondering. While the Soviets rejected obvious early efforts to hem them in via arms control negotiations, American strategy in the second half of the Cold War bore greater fruit, as "equal" and "fair" quantitative restrictions allowed the United States to pursue qualitative force advantages with greater success and at less cost. Today, arms control is viewed solely as a tool for promoting international cooperation, lauded by doves and disdained by hawks. Contemporary policymakers would do well to also recognize the competitive dimension that has historically undergirded arms control, for three reasons.

First, this perspective can help sustain the arms control process by building a broader base of support for legacy arms control achievements. The United States retains a significant competitive incentive to uphold arms control successes like the INF Treaty, which continues to shape U.S.-Russian nuclear competition in ways beneficial to U.S. interests. While Russia cannot be allowed to cheat, critics of the agreement should consider how the treaty, properly observed, enables the United States to exploit its advantages in aerial and naval forces to the full. Similarly, defenders of the treaty ought to make the case for the agreement on its significant competitive merits, not solely on the basis of mutual interest with the Russians. Recognizing both the cooperative and the competitive elements of the INF Treaty creates a much stronger case for why the United States should seek to sustain, and perhaps even expand, the ban on land-based intermediate-range missiles.

Second, the strong association of "arms control" with "peace and cooperation" often distorts our understanding of real arms control successes. For example, some defenders of the 2015 Joint

Comprehensive Plan of Action (JCPOA) have argued that Iran's willingness to participate in an arms control agreement is indicative of a broader desire for cooperation with the United States. At the same time, some critics of the agreement have pointed to Iran's continued military competition with the United States as evidence that the Iranians are not serious about arms control. Because they conflate arms control with cooperation, both defenders and critics often miss one of the JCPOA's major strengths: It promotes U.S. military advantage over Iran by limiting Iran's access to nuclear weapons, while requiring no similar changes in American military capability. And the agreement accomplishes this objective whether or not the Iranians are truly interested in expanding cooperation. Arms control does not need to end military competition entirely for it to be an effective tool of American foreign policy.

Finally, U.S. leaders ought to think about how arms control might promote competitive advantage in the area of emerging technologies like cyber weapons, artificial intelligence, and biotechnology. Proponents of arms control for these fields have recently staked out maximalist positions that would prohibit all countries from pursuing military applications of emerging technologies. For U.S. policymakers considering the Third Offset, however, the appropriate questions are how these technologies can be used to enhance American military-technological competitiveness and how arms control restrictions can be tailored to further that competitive advantage. In an era labeled as a return to great power competition, American leaders can take a page out of the history of the Cold War to devise strategies that keep the United States ahead of its rivals.

<https://warontherocks.com/2018/06/the-forgotten-side-of-arms-control-enhancing-u-s-competitive-advantage-offsetting-enemy-strengths/>

[Return to top](#)

The Hill (Washington, D.C.)

## **Trump Must Beware of Declaring 'Mission Accomplished' on North Korea**

By Harry J. Kazianis

June 25, 2018

While tensions with North Korea — at least for the moment — have subsided, history tells us that Pyongyang's promises are about as disposable as toilet paper. The Kim regime has broken every nuclear pledge it ever made, and most likely will conclude again that atomic arms are the only way to guarantee the regime's survival.

And make no mistake: Another North Korea crisis is in the offing — but perhaps one of our own making.

Unless Chairman Kim Jong Un is ready to surrender his nuclear weapons and missiles completely and then open his country to thousands of international inspectors, the Trump administration will have a historic choice to make: War and most likely regime change, where millions would die with a cost in the trillions of dollars, years or maybe decades of containment — or accepting North Korea as a full-fledged nuclear power.

None of that sounds very attractive.

However, the administration is doing itself no favors in the last few weeks, declaring over and over that Pyongyang is “no longer a nuclear threat.”

In fact, such rhetoric brings with it a sense of *deja vu*, of when another U.S. president 15 years ago declared a major national security nightmare to be over — what many call the “mission

accomplished” moment — only to commit large sums of national treasure in Iraq, a nation that to this day seems broken.

To be fair, both situations are quite different, but the dangers of such strategic folly, or what can only be described as fairytale foreign policy outlooks, should give us pause.

Recall that the sight of President George W. Bush descending from the heavens to land on a Navy aircraft carrier, and then to declare the Second Gulf War effectively over and that “major combat operations in Iraq have ended,” will go down in the history books as hubris of the worst kind.

Thankfully, in the case of North Korea, the Trump administration has not been as bold, but there have been a few flashes of Bushian-style brazenness that ought to make our skin crawl.

First, there are the tweets — crafted in classic Trumpian fashion. On June 13, Trump declared that “there is no longer a Nuclear Threat from North Korea. Meeting with Kim Jong Un was an interesting and very positive experience.” Minutes later, again on Twitter, he went further, this time saying that “before taking office people were assuming that we were going to War with North Korea. President Obama said that North Korea was our biggest and most dangerous problem. No longer — sleep well tonight!”

From there it gets worse — and a little strange. During an impromptu interview on “Fox and Friends,” with the White House providing a convenient backdrop, Trump explained that he and dictator Kim “get along very well; we had good chemistry. ... We really did hit it off.” Trump said Kim could even visit the White House, stating that “it could happen. He’s head of a country — and I mean he’s the strong head, and don’t let anybody think anything different. He speaks and his people sit up at attention. I want my people to do the same.”

What a difference a few days makes — and not for the better. The administration already has had to backtrack, declaring in a notice to Congress as part of an action to ensure sanctions are maintained on the hermit kingdom that:

“The existence and risk of proliferation of weapons-usable fissile material on the Korean Peninsula; the actions and policies of the Government of North Korea that destabilize the Korean Peninsula and imperil United States Armed Forces, allies, and trading partners in the region, including its pursuit of nuclear and missile programs; and other provocative, destabilizing, and repressive actions and policies of the Government of North Korea continue to constitute an unusual and extraordinary threat to the national security, foreign policy, and economy of the United States.”

The good news — if there is any such thing when it comes to North Korea — is that we will have clarity, and quite soon. With reports breaking that Team Trump will present some sort of “timeline” to North Korea with “specific asks,” we should have a good idea whether Kim is actually serious about “denuclearing.” One administration official went as far as to say that “we’ll know pretty soon if they’re going to operate in good faith or not.”

But why wasn’t all of this done months ago, way before there was talk of a summit?

Remember, it was just weeks and days before the official meeting — cancelled and then rescheduled — that the administration wanted firm promises on denuclearization before a summit ever took place, clearly the correct approach. Team Trump then decided to throw that demand out the window, hoping to convince Kim through a meeting and cancelling important military exercises that America and its allies are no threat.

That all seems like a big mistake — with a very predictable outcome. North Korea still won’t make any firm commitments on giving up its weapons, even after the administration made a major concession and met with Kim, weakened the maximum pressure campaign and even tried to sweet-talk him in the media.

Sadly, it seems every U.S. administration goes through the same painful learning curve when it comes to North Korea. The problem now is that the administration will have to eat its words (and actions) once Pyongyang follows its classic playbook: Stall for time, offer unreasonable demands, blame everyone else for failing negotiations — a process that usually goes on for months or years. All the while, Kim builds more and more nuclear weapons, to the tune of every six or seven weeks.

It seems when it comes to North Korea that nothing has been accomplished. In fact, the hard choices begin now, no matter what Trump's Twitter feed declares. The question we should all be asking now is obvious: How will the president react once he realizes his "friend" Kim played him?

<http://thehill.com/opinion/national-security/393977-trump-must-beware-of-declaring-mission-accomplished-on-north-korea>

[Return to top](#)

The National Interest (Washington, D.C.)

### **No Surprise: The Bomb Has Made a Bad Situation Worse in South Asia**

By Michael Krepon

June 24, 2018

*Testing nuclear devices opens up a Pandora's box of requirements that can be relieved only by accepting a modus vivendi with an adversary or by accepting minimal deterrence from the competition.*

After testing nuclear devices in 1998, Indian and Pakistani leaders genuinely believed—or stated for the record, while suspecting otherwise—that bringing bombs out of the basement would help make the region safer and more stable. They assumed, as did leading strategic analysts in both countries, that nuclear-weapon requirements could remain modest and minimal. Subsequent developments made it is all too clear that, in South Asia, as elsewhere, the overlay of nuclear weapons onto existing grievances does not improve bilateral relations and reinforce conditions of stable deterrence. Pro-bomb constituencies grow stronger once the testing threshold is crossed. Testing nuclear devices opens up a Pandora's box of requirements that can be relieved only by accepting a modus vivendi with an adversary or by accepting minimal deterrence and dropping out of the competition.

After the tests, Indian prime minister A. B. Vajpayee declared that, "Ours will never be weapons of aggression." Pakistani prime minister Nawaz Sharif characterized the decision to test an act of national defense, reaffirming that "Pakistan will continue to support the goals of nuclear disarmament and non-proliferation, especially in the Conference on Disarmament." The conference's agenda has subsequently been moribund for multiple reasons, including that Pakistan has blocked negotiations on a fissile material cut-off treaty.

Jaswant Singh, India's foreign minister, wrote in Foreign Affairs that "India shall not engage in an arms race, nor, of course, shall it subscribe to or reinvent the sterile doctrines of the Cold War." One of these "sterile" doctrines is presumably the pursuit of nuclear war-fighting capabilities by means of counterforce targeting. It is unclear whether New Delhi can resist this temptation. A subsequent issue of Foreign Affairs carried a piece by Pakistan's Foreign Secretary Shamshad Ahmad asserting that, "By establishing mutual deterrence, [Pakistan and India] have served the interests of peace and stability in South Asia." Caveats followed about the need for India to meet Pakistan's security concerns at least half way.

To reduce nuclear dangers and to head off an arms race, Vajpayee boldly ventured to Lahore in February 1999 for a chaotic summit with Nawaz. At Lahore they pledged to seek the resolution of the Kashmir dispute, refrain from intervening in each other's internal affairs, engage in a composite dialogue on outstanding issues, negotiate confidence-building agreements and other steps to prevent conflict. Nawaz reiterated his "earnest desire to avoid an arms race" at the summit.

Indian heavyweights such as K. Subrahmanyam, Jasjit Singh and K. Sundarji weighed in with assessments that very few nuclear weapons would be needed for stable deterrence. Sundarji, an adventurous former Army chief and unapologetic booster of an Indian bomb, quipped that, for nuclear deterrence, "more is not better if less is adequate."

Three renowned Pakistani strategic thinkers, Agha Shahi, Zulfikar Ali Khan and Abdul Sattar also debunked counterforce targeting, writing that, "Nuclear deterrence, unlike the conventional one, is not degraded by qualitative or quantitative disparity." When Abdul Sattar became Pakistan's foreign minister the next month, he announced that, "We shall not engage in any nuclear competition or arms race."

Key Pakistani military leaders did not support a reconciliation process with India. A small clique around Army Chief Pervez Musharraf effectively set fire to the Lahore Declaration with surreptitious advances across the Kashmir divide, resulting in a limited conventional war and a humiliating retreat. The Kargil war was a watershed. The nuclear arms competition picked up steam as the Indian Army adopted plans for "Cold Start" counter-thrusts into Pakistani territory to respond to major provocations. Rawalpindi countered by embracing short-range nuclear weapons to foil these plans.

K. Santhanam, an iconoclastic Indian defense scientist deeply involved in nuclear matters, wryly noted that, "nuclear testing by a debutante . . . is the definitive signal of crossing the nuclear threshold—an index of arrival." He was right, of course: arrival didn't equate to acceptance. Nuclear testing, as the hawkish Indian commentator Bharat Kharnad, wrote, "gained India an entry but only on the veranda of the nuclear weapons club." Access to the main ballroom, symbolized by a permanent seat on the UN Security Council and membership in the Nuclear Suppliers Group, has so far been beyond reach. Beijing has no incentive to elevate New Delhi's standing in these forums; there are other reasons for India's exclusion, as well.

The quest for status by means of membership seems blocked in the near term if not far longer. But status, while important, was never the primary driver behind New Delhi's decision to test in 1998. Contrary to this metronomic Pakistani talking point, the primary driver behind Indian testing was national security—just as it was for Pakistan. In 1995, the Nonproliferation Treaty was extended indefinitely. The next year, negotiations on a Comprehensive Test Ban Treaty were finally concluded. The doors to the nuclear club seemed to be closing.

Moreover, China's economic growth and military capabilities were far outpacing India's. While Beijing didn't use its nuclear capabilities for leverage against India, there could be no guarantees about the future. Additionally, there was reason to suspect that Pakistan already possessed the Bomb, thanks to a reliable, tested design courtesy of China. For many observers, confirmation on this score came when Pakistan tested soon after India.

The newly elected government of A. B. Vajpayee was convinced that it needed to test for reasons of national assurance as well as deterrence. Diplomatic contortions were required, as India was a longstanding champion of nuclear disarmament and the CTBT. New Delhi latched on to the Treaty's entry-into-force provision as its escape hatch, walking away from the negotiations at the eleventh hour. This EIF provision delayed implementation until India and every other state with bomb-making capacity were in the fold. New Delhi asserted that this was a grave infringement of national

sovereignty—a novel interpretation because no such infringement was imposed. Instead, the EIF provision provided New Delhi with the time and space to go its own way. The most reluctant parties to the CTBT roped in India and other likely nonsignatories as a convenient way to put off the Treaty's implementation for as long as possible.

India's national security did not improve after moving its bomb out of the basement. Pakistan's national-security managers were ready and able to compete vigorously, viewing nuclear weapons as war-fighting instruments in the event deterrence failed against a conventionally stronger foe. Nor did offsetting nuclear-weapon capabilities induce caution by Pakistan's military overseers, who ramped up friction along the Line of Control dividing Kashmir. Militant groups with an anti-India agendas continued to find a safe harbor in Pakistan, groups that could trigger Cold Start operations—if approved by India's political leadership.

There was no such approval in 2008 after brazen attacks on symbolic venues in Mumbai by cadres based in Pakistan. Prime Minister Manmohan Singh valued economic growth far more than another war with Pakistan. Even before the Mumbai attacks, little remained of the spirit of the Lahore Declaration. After the Mumbai attacks, diplomacy became moribund as firing between forces stationed along the Kashmir divide and unrest in the Kashmir Valley grew.

Nor did India's nuclear capabilities help stabilize relations with an increasingly assertive China. The security gains that failed to materialize from nuclear testing were offset, however, by significant advances in economics and geopolitics. President Bill Clinton was relieved of the perceived need to cold shoulder India after its tests when the U.S. Senate rejected the CTBT in 1999. Clinton then pursued his long-delayed interest to improve bilateral ties in the waning months of his administration. These gates opened far wider as the George W. Bush administration pursued a strategic partnership with India. The symbolic centerpiece of the Bush administration's campaign was selling nuclear power plants and clearing impediments to such sales within the Nuclear Suppliers Group. The thousands of jobs advertised and anticipated as a result turned out to be a mirage, but no matter: the Indian market beckoned, and the Bush administration reckoned that improved defense ties would help India serve as a counterweight to China.

Pakistan also suffered national-security losses as a result of nuclear testing. Unlike India, Pakistan found itself increasingly isolated after the tests, which freed Washington to rail against Pakistan's policies toward Afghanistan and its ties to militant anti-India "strategic assets" that the rest of the world viewed as dangerous liabilities. Whatever was gained in terms of deterrence—and Pakistan's national-security managers believe these gains to be considerable—came with the costs of a presumed need to compete with India. This led to open-ended nuclear weapon requirements and defense budgets, at the expense of domestic needs. The connection to militant, anti-India groups, along with Pakistan's prior role in helping to advance nuclear programs in North Korea, Iran and Libya worked to its disadvantage in seeking favors similar to those accorded to India. Moreover, Pakistan lacked the market and investment opportunities that greatly favored India.

As Washington lost patience waiting for Pakistan's national-security establishment to change course over Afghanistan, India and the Bomb, China became a closer strategic partner. This major, positive development was linked to a major, negative development: two major benefactors are always better than one, and Pakistan lost one of its benefactors in the years following the 1998 tests.

Twenty years after testing nuclear devices, the Bomb provided little relief for Pakistan's sense of unease. Succeeding in—or at least keeping pace with India in a nuclear competition—doesn't help the state least able to afford it. Accepting a modus vivendi with India could help greatly, but this would require far-reaching shifts in civil-military relations that Pakistan's military establishment resists—and has ample means to checkmate.

Pakistan and India have come a long way since their confident predictions of limited nuclear deterrence and avoiding an arms competition. They are widely believed to possess three-digit-sized nuclear arsenals, with further increases ahead. India leads in some aspects of the nuclear competition, while Pakistan appears to have a larger stockpile of weapons. Both countries have combined to flight-test twenty-eight types of nuclear-capable missiles since the 1998 tests.

These weapons are add-ons to deterrence, but not to security and stability. This distinction is critical, because security and stability require forms of reassurance that deterrence cannot provide. The Bomb helps with deterrence in two overriding cases—the prevention of nuclear exchanges and major conventional war. The Bomb doesn't help in other cases, including limited conventional war and punishment by proxies. The optimistic estimates by top-tier strategic thinkers in India and Pakistan two decades ago have become distant, broken dreams.

<http://nationalinterest.org/feature/no-surprise-the-bomb-has-made-bad-situation-worse-south-asia-26394>

[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."

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