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## Feature Report

***“NUCLEAR NONPROLIFERATION: Past U.S. Involvement Improved Russian Nuclear Material Security, but Little Is Known about Current Conditions”***. Published by U.S. Government Accountability Office; Feb. 27, 2020

<https://www.gao.gov/products/GAO-20-392>

For nearly two decades, the United States and Russia cooperated to upgrade security at dozens of Russian sites containing materials that could be used to build a nuclear weapon. This included modern fencing, surveillance cameras, and other improvements.

This work was incomplete when Russia invaded Ukraine in 2014 and cooperation was dramatically curtailed. Today, little is known about security at these sites, including the extent to which Russia has maintained U.S.-funded improvements.

Stakeholders told us there may be opportunities to work with Russia to improve nuclear material security, but that there would also be significant challenges.

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# NUCLEAR WEAPONS

UPI (Washington, D.C.)

## **U.N. Atomic Agency: Iran Has Tripled Stockpile of Enriched Uranium**

By Daniel Uria

March 3, 2020

March 3 (UPI) -- Iran has nearly tripled its stockpile of enriched uranium since November, the United Nations' nuclear watchdog said Thursday.

Inspectors from the International Atomic Energy Agency reported that Iran had stockpiled more than 1,020 kilograms of low-enriched uranium as of Feb. 19, up from 372 kilograms on Nov. 3, and that it had increased the number of machines it was using to enrich uranium allowing for faster production of nuclear fuel.

The totals surpassed the limit of 202.8 kilograms allowed under a 2015 nuclear agreement between Iran and six world powers, which the United States backed out of in May 2018.

The material was enriched has high as 4.5 percent purity, but more than half was below that level. Iran has said it would only enrich beyond 5 percent if had some technical need for the material.

Analysts have said the increased stockpile and faster rate of enrichment has reduced the "breakout time" -- the period Iran would need to acquire a nuclear bomb from about one year when the accord took effect to just more than three months.

In addition to stockpiling uranium, Iran would require a nuclear warhead and guidance system to be capable of mounting a nuclear missile strike.

The IAEA found no evidence that Iran was taking specific steps toward nuclear weapons production and Iran has said its nuclear program is in service of peaceful, civilian purposes.

A separate IAEA report stated that Iran has raised "serious concern" by refusing to allow inspectors to access two sites and rejecting its requests to take samples at the sites in order to see if they had been used to store nuclear material or conduct other nuclear-related activities.

Last year the agency found unexplained traces of enriched uranium after taking samples at a site in Tehran and has since repeatedly observed activities "consistent with efforts to sanitize" the site.

[https://www.upi.com/Top\\_News/World-News/2020/03/03/UN-Atomic-agency-Iran-has-tripled-stockpile-of-enriched-uranium/7671583275536/](https://www.upi.com/Top_News/World-News/2020/03/03/UN-Atomic-agency-Iran-has-tripled-stockpile-of-enriched-uranium/7671583275536/)

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Air Force Magazine (Arlington, Va.)

## **Q&A: Nukes, Space Force, and Change**

By John A. Tirpak and Tobias Naegele

March 1, 2020

Barbara Barrett was sworn in as the 25th Secretary of the Air Force in October 2019, only two months before the official stand-up of the U.S. Space Force as a part of the Department of the Air Force. In her first interview as Secretary, she spoke with Air Force Magazine Editorial Director John A. Tirpak and Editor-in-Chief Tobias Naegele about the challenges ahead for the two services she now leads; the flattening defense budget; and affording nuclear modernization. The conversation has been edited for clarity and length.

**Q.** Let's talk about the Space Force. How will the chain of authority work among you, Gen. David Goldfein, and Gen. John Raymond?

**A.** It's two separate services under one Department, not unlike what you see in the Navy and Marine Corps, but with some differences. In giving testimony, for example, they go in order of the precedence of the services, by the age of the service.

The Department of the Air Force has two components: the Air Force and the Space Force. One might think they'll be called the Department of the Air & Space Force, to have better evidence of the parity, but that's not what happened in the legislation. So they are peers, and that's also the practicality of it.

We're blessed that the two people starting this are Generals Goldfein and Raymond, because they are uniquely wise in how they've handled it. General Goldfein has been very supportive. I think he was the force behind Space Force's immediate participation on the Joint Chiefs, instead of delayed participation, which would have been permitted. He's been very supportive and even deferential beyond his due.

Our mission here is to have this be the textbook demonstration of how you would start something in a way to be led for success. I think we must have managed to clone General Raymond, because he seems to be on both sides of the country at once. He must never sleep, because I see him at 5 a.m. on video teleconferences. He's a remarkable leader, as is General Goldfein.

We are truly fortunate to have those two leaders applying that wisdom to setting up this new force.

**Q.** The Air Force has long struggled with the "pass-through" budget. It makes the Air Force's budget look bigger than it really is, but the Air Force doesn't actually control that money. Most of those funds go to space activities. With the creation of Space Force, would this be a good time to get rid of that budget idiosyncrasy and give that budget money to Space Force to manage?

**A.** That's one of the ideas.

Standing up a new force is evidence that there is a nationally recognized need, and that the world has changed to where there is a new domain that is of paramount importance. There are old constructs that have become chiseled in granite: the 30-30-30-10 division of funds between the services and defense agencies, for example, and the Air Force covers the pass-through. Some of those constructs are no doubt reflective of a World War II mindset, or even a Civil War mindset. We wouldn't dream of trying to practice medicine without penicillin, we wouldn't dream of fighting without space. If we persisted with the same budget that we had "pre-penicillin," if you will, we would not only be wrong in medicine but wrong in leadership.



So what we are doing is, looking at how do we structure this. Budget is among the most important things, and the pass-through has been a thin disguise, but with a big penalty. We need to be looking at better solutions. Those solutions will all be fashioned buildingwide.

We need solutions that a former Army Secretary—who's now Defense Secretary [Mark Esper]—will find equitable. He needs to be persuaded on these. But all the services are beneficiaries of the space capabilities, and if no one else contributes, the space asset will be starved.

Q. Have you discussed the pass-through with Defense Secretary Esper?

A. Not since 10 o'clock this morning.

Q. Do you think the environment is sympathetic to doing something about this?

A. There are antibodies to any change. And I'm conscious that any change will receive pushback.

Q. You've run a lot of organizations and you can see what the antibodies to change are. How long do you think it's really going to take to get the Space Force to be fully accepted?

A. Users of space come to it right away, with a great deal of respect. Other people, they may be protecting their rice bowls.

When the whole idea of the Space Force came up, it was a subject of ridicule, as most new ideas are. But when people thought about it, as I said in my testimony, most people come around. We all use space, most of us before we have our cup of coffee in the morning. People awaken to an alarm clock that uses GPS. They look at their

iPhones or their electronics, and they see the weather, they look at the stock market, they look at news, the traffic report ... all those things use space.

It's ubiquitous, but it's invisible, so people don't think about it. But our way of life is entirely dependent on it. We don't have power unless we use space. Navigation, information, communication, all are dependent on it. And the GPS system that we rely on, worldwide, is run by the Air Force. And now, the Space Force.

By the way, seven staff members sitting in front of computer screens in Colorado Springs are running the world's GPS system, per shift. So, 40 people in total are running the world's GPS system. Now, this is probably the best deal in mankind. Nothing works without it. And the amount of traffic that goes through there is immense.

We don't have to bomb cities to fight a war. You just have to shoot down the space capabilities. My predecessor, Heather Wilson, said we built these capabilities as though we built a glass house before they invented stones. We have capabilities up there that we have to worry about: jamming, laser, capture, diversion. There are vulnerabilities. That's not news. It's not a secret that we depend on these systems and they are vulnerable.

The good thing, though, is that other societies are also increasingly dependent on space. We're not the only ones. And so, they have skin in the game. A debilitating action against America would almost certainly be debilitating against others.

We need to fortify the capabilities that we have. We need to replace these aging systems, some of which have outlived their design life, with less vulnerable capabilities—GPS satellites, for instance. And then, we need to build a capability so that we can be something other than a victim.

We need to make it so that if they take us on, we, too, can do damage in space. Our intent is, we are a peaceful nation. America's policies are peaceful policies, but we do not intend to be helpless victims.

We are in need of development of the capabilities that can defend the assets we rely on in space. We take it very seriously. Those who have thought about it, know this is right. At first it was treated with humor—we like humor—but with more humor than it's due. As people think about it, they understand with sobriety, this is a serious topic, and no less serious than defending our shores, borders, [or]skies. And now we need to be defending the capabilities we need in space.

So as to the question of “what do people in the rest of the [Pentagon] think,” people eventually come around to realizing the urgency. They all are using space.

Q. Everyone is predicting flat budgets ahead. How do you protect the gains that have been made in readiness, and push for 386 squadrons, when budgets are flat, and when you have an enormous bill coming due for nuclear modernization?

A. Wasn't it Churchill in World War II who said, “We have run out of money. Now have to think.”

Flat budgets are a reality. It's what we project and anticipate in the future. So we have to get optimum use out of every dollar. Even as of this morning—and for that matter—most times I run into the Secretary of Defense, the question is, how can you do things faster, cheaper, better? How do we get better value for the dollar? Taxpayers should be proud of the Secretary of Defense because he is looking out for value for the money.

I don't think America wants defense on the cheap. I think America wants value for the expenditures. And I think the leadership in [DOD] is here to deliver value, to have the mission in mind, what is the threat, what is the desired outcome, and build a system, within constraints, that gives the best possible value and capabilities for the dollar.

The reality of flat budgets means we need top talent, we need them trained, we need to be recruiting the very best, we need to sharpen up our recruiting system, so it doesn't take months to get someone on board, or years. The best people will only be patient and tolerant for so long. So we need to improve our systems.

Q. Is the 386 combat squadron requirement still viable? The Space Force will take some of those, and the numbers will change. But is the general concept still in play? Or will it be something less than that?

A. It's still in play. What we need are the 386 squadrons. But at the same time, we need to be looking at how a squadron is built. We're looking at stripping it back to the studs. But the squadron, that's the building block. Squadrons are how we put together our force.

Q. One of your predecessors, Secretary Deborah James, suggested that Congress or DOD should break out nuclear modernization from the budget, because that's a once-every-40-years kind of thing, and because leaving it in the Air Force topline would crush funding for conventional programs. Do you think that's a viable idea?

A. Because nuclear modernization is 'up' right now, we really have to think about the best way of doing that. We'll look at the triad and see if there's anything we can do faster, cheaper, better; whether there are any improvements we can make. But carving that out of the budget, somebody's got to cover that. And two-thirds of it is Air Force. We'd need to assess whether others would pick that up. I can't imagine a rush of volunteers.

Q. Have you had that conversation with the Secretary, and with the Hill?

A. We have had conversations about nuclear modernization, how to get it done, and how to discipline the costs.

Q. Is it understood that such a large expenditure can't help but affect everything else the Air Force is trying to do?



A. There is complete understanding that nuclear modernization is a huge bill, coming due now, and is no longer deferrable. Creative solutions are welcome, and, unfortunately, missing.

Q. Looking ahead to the next year or so, maybe longer, what would you like to get accomplished in this job?

A. I guess you can't do everything, so you've got to focus on a few things. I've got the big three. We already talked about space. That's going to take getting it right, and you only get one chance to start something right. So, standing up Space Force is of course the unique and timely thing.

My swearing-in was at the [U.S.] Air Force Academy, not here. It was at the Polaris [Hall] building, symbolically about leadership and character-building. Our future depends on the people who are part of our Air Force and Space Force.

Recruitment of top talent, development of that talent, retention of that talent, and caring for them and their families and the communities in which they work, is how these forces will be successful.

And we've got to give them the right tools, not ancient tools. Any job can be done with the right tools.

During my life, I've been to a hundred different military installations around the world, and so I thought I knew the Air Force, to some extent. But I have only been overwhelmingly impressed with the caliber of men and women who devote their lives to this mission. This afternoon I'll be at a dignified transfer. That gives evidence of the level of commitment these men and women have, their willingness to make the ultimate sacrifice ... uniformed, civilian, [the] Total Force.

<https://www.airforcemag.com/article/qa-nukes-space-force-and-change/>

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Airman Magazine (Fort George G. Meade, Maryland)

## **Sustainable Competition**

By Master Sgt. Greg C. Biondo

March 3, 2020

Airman Magazine sat down with Gen. Tim Ray, the Air Force Global Strike Command commander, for an in-depth interview. The below excerpts highlight how the command continues to innovate and explore the art of possible. There are only historical traces of Strategic Air Command; these Airmen are now Strikers. Excellence and teamwork is in the job description; they're attracting talent and working hard to keep it in-house, building the world's premiere nuclear and conventional long-range strike team.

Gen. Tim Ray: Strikers stand on the shoulders of giants like Schriever, Doolittle, Arnold and Eaker. That's our heritage. We understand that air and space power is not about perfection; it's about overcoming obstacles and challenges. Strikers are in a business that no one else can do. Strikers know the score; and the score is that there are no allied bombers out there. There are no allied Intercontinental Ballistic Missiles. What we do every day as a Striker is the foundation of the security structure of the free world. This fact is viewed in the eyes of our adversaries and it's viewed in the eyes of our allies. In a very important way, there's a lot riding on our Airmen, and we have to get it right every day.

Airman Magazine: What are some of the challenges Global Strike is facing and some of the conversations and solutions your team is coming up with?

Gen. Tim Ray: For us it's to think about the competitive space we're in, when the Cold War ended; there really was only one team that stopped competing at this level, of great power competition—the United States. We enjoyed a world order that was to our benefit. Now we have players on the scene with regional reach and capacity, and also global capacity, and we've got regional players who want to make sure that they have more sway. So think North Korea, Iran, China and Russia. So how we compete with them is not something that you can take lightly. When you step back and think about it, in this long-term strategic competition, how do we compete?

One of the things I'm very proud of in the command is what we've done with our weapons generation facility. Here's an example: the old requirements for how you would build that were very expensive and somewhat outdated. We brought in a cross-functional team from across the Air Force. We gave everybody a right and left limit and we made them really think about this thing. The outcome of that effort is an option to re-capitalize our facilities at a third of the cost. We're saving hundreds of millions of dollars that'll have better security and better capacity. I think that's the kind of business game we need to continue to play; to go and provide great, relevant capabilities, much more affordable for who we are as an Air Force and who we are as a military. I think that's how we continue to take this particular thing on, is thinking about the context, what do we have to do to find ways to solve those problems.

Airman Magazine: Can you talk about the atmosphere of how we handled things back during the Cold War and how, in today's great power competition, things are different?

Gen. Tim Ray: With the Cold War, there was bipolarity and a set number of competitors. With the Warsaw Pact and Soviet Union versus everybody else; we had the lead. Now we have multi-polarity with competitors like China, Russia, North Korea, Iran, violent extremist organization challenges; they are now part of the equation. So you have to think more broadly about this global situation.

Things are in this conversation now that weren't back then, space, cyber, hypersonics, the information domain, the internet, what happens in social media, all those influencers. That's a very different game when you start to understand what's really going on out there.

Airman Magazine: How do you maintain a vector and vision for the command in an ever-changing competitive space?

Gen. Tim Ray: When you read the book *Why Air Forces Fail*, we see that there's no loss based on a lack of tactics, techniques, or procedures. It's always for a lack of ability to adapt to what's going on. So when I think about that particular space, you have to realize this is really more of a chess game. So you can't try to win every move. But you have to avoid being put on the chess board without options, and that's how the enemy is playing the game. So you need to know how you get to checkmate on the enemy. And certainly when it comes time to maneuver on the board, you think more strategically. When you consider that dynamic, so how the Soviet Union dealt with us, they tried to win every day, and it didn't work for them. So we step back and consider what's going on, you have to set a pace to build margin and to compete that is sustainable.

Airman Magazine: What does the Global Strike Command of 2030 look like?

Gen. Tim Ray: The command in 2030 understands readiness and capacity as an ecosystem. How we tend to look at it these days is fairly numerical. And as you begin to modernize and change you have to think about it as an ecosystem. You have to think about the rate at which you can bring new technology on. You have to think about it in the rate at which you can keep it relevant for the conflict ahead of you, and put those capabilities in on time. You have to understand the training requirements, and the manpower.

So we're standing up our innovative hub that's connected to AFWERX—StrikeWerx. We've got great connections with academia here locally, and then building that more broadly. So that innovative

space, that data, that ecosystem approach, means that I think we can be much more capable of keeping that margin in play, and doing it as affordably as we possibly can. So that piece, that's an important part of just the organize, train, and equip.

We're absolutely tying ourselves to space in a very formal way because that's a big part of how we're going to operate. Multi-domain command and control, multi-domain operations, means many sensors, many shooters. And to be able to connect them all together, I tell you, if you're serious about long-range strike, you're very serious about multi-domain operations, because that's how we're going to do this. And so it's a big part of who we are.

Airman Magazine: How important is it to develop and adopt simulation training technologies that are compatible across the command and that are scalable to an Air Force level?

Gen. Tim Ray: Starting locally at each of the wings, we're beginning our own efforts to use augmented and virtual reality. It's already in play in a couple of our wings. Certainly I see the ability to bring artificial intelligence into that, to make sure that we're doing really smart stuff. We can measure human performance now more accurately, and so you can compare that to a standard.

I'm a huge fan of simulation. There's a lot of things you can do, but there's also some real-world things that you've got to do. So you've got to keep those two things in balance. Not one before the other, but really it's about putting them together correctly to give you the best trained Airmen, and that you're relevant. I see us continuing to work down that line. I believe that all the new platforms that we're bringing on with the new helicopter (MH-139 Grey Wolf), certainly the B-21, the new ICBM, and the new cruise missile, all those capabilities I think we have to bake in the virtual reality, augmented reality, dimensions to training, and the maintenance and the support and the operations. I think that's got to be foundational, because it's a much more affordable and more effective way to go.

Airman Magazine: General Goldfein said when it comes to the nuclear enterprise, that there might be a great cost to investing in it, but the cost of losing is going to be much higher. Can you expand on that statement?

Gen. Tim Ray: When you think of our nuclear triad, it must be looked at through the lens of the Chinese triad. Which is not big, but it's a triad and modernized. The Russian triad which is large and modernized. Then, look at our triad through the minds of our allies and partners. That's the context. And we don't get to pick our own context. We don't get to pick how we want to manage that. That's the reality of how this operates.

Airman Magazine: How important is our commitment to our allies in this fight?

Gen. Tim Ray: What you'll find is that, whatever happens in the nuclear realm, will need to play out in the capitals of all of our allies. What it is and what it isn't, what it means and what it doesn't mean. Because there are countries out there who are, on a routine basis, asking themselves whether they need to build a nuclear program. And because we're doing what we do, the answer to that is no, they don't have to. So there is a counter-proliferation dimension here. Back in the Cold War there was the United States, there was the UK, the French, and the Russians. Now there's India, Pakistan, you've got North Korea, and China and so on. You've got a very different world. We don't need more of those. It simply complicates it and makes it more difficult. So it has to play out in our minds, how we intend to stay the course in a way that works. That's the difficult piece.

Airman Magazine: The Minuteman III was placed in the ground in 1973. As we look at updating those systems, moving toward more integrated, how do you look at the security aspect of that when it comes to the ICBM capability?

Gen. Tim Ray: Security on all dimensions for the nuclear portfolio is so critical. You have to have a very high degree of assurance there. What we're doing is a priority

You now have a challenge with the old ICBM. When, not if, you need to make a modernization move for a new component, you have a phenomenal integration bill. Right now, we don't own the technical baseline, which means we have to pay a very high price for that. It was not built to be modular, so now we have to have a lot more detailed engineering, and it's going to take a lot longer to do that. And it's less competitive, because there's only handful of people, maybe one or two places which might even want to take that on.

For the new system, the Ground-Based Strategic Deterrent, there's a different value proposition there. One, it's modular in design. It's mature technology. It's built to be in the ground for a long time. We're talking about a two-third reduction in the number of convoys, which is a significantly safer world. It's two thirds fewer openings of the site to do work on it, and to expose it to the outside. You'll have a more modern communication capability, which means you can design in a much more cyber-resilient capability, and you can look at redundant paths. So I think at the end of the day, the value proposition of being able to make affordable modernization moves or changes to reduce the security challenge, and to bring in that modern technology that you can now work on in a competitive environment, that's just a much smarter way of doing business.

Airman Magazine: You mentioned the Air Force just acquired a new helicopter which your command will be utilizing. Can you please talk about the acquisition of new technology for your command?

Gen. Tim Ray: There's a formula for affordability. You need to have mature technology. You have to have stable requirements. You need to own the technical baseline so that you don't have to pay the prime contractor extra money to go fix it. You need to be modular so that you can make very easy modern modifications without it having to be an entirely new engineering project. So you just have to reengineer that one piece to interface with it all. Then you've got to get it on the ramp on time, and then begin your modernization plan. That's the formula. That's exactly how the new helicopter played out in a competitive environment. It was the best option. I think we're going to find it's going to meet our needs quite well. That's going to be a tremendous help, and I think it's going to go faster than fielding a brand new system. So we're modifying something that has the capacity to be modified. I think it's a great, great success story.

Airman Magazine: The Air Force has the great responsibility of being entrusted with the most powerful weapons on the planet. What's your view in being part of such a huge responsibility?

Gen. Timothy Ray: It is a tremendous responsibility to be in charge of two thirds ... On a day to day basis, to be in charge of two thirds of the country's nuclear arsenal, while there may be some instability, the world without these particular capabilities would be very different. I believe it's important for us to look at it beyond simply day to day stewardship. If you really think about it, it's not just the global strike portfolio, or the Air Force portfolio, or even the DoD, the Department of Defense, this is the nation's arsenal. And the nation's arsenal, and our leadership role in the world, and the role we play, there's a tremendous application across the planet. So that just underscores how important it is on a day to day basis.

<https://airman.dodlive.mil/2020/03/03/sustainable-competition/>

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Defense News (Washington, D.C.)

## **The White House Gave This Nuclear Agency a Giant Funding Increase. Can It Spend It All?**

By Aaron Mehta

March 3, 2020

WASHINGTON — Members of Congress used a hearing Tuesday to question whether the National Nuclear Security Administration, a semiautonomous arm of the Department of Energy that handles development of nuclear warheads, can spend an almost 20 percent funding increase requested by the Trump administration.

As part of its national security budget request, the White House asked for more than \$46 billion for nuclear programs in fiscal 2021. That includes \$28.9 billion for the Department of Defense, which develops the delivery systems such as the B-21 bomber and the new replacement for intercontinental ballistic missiles, as well as \$15.6 billion for NNSA's nuclear weapons accounts and another \$1.7 billion for nuclear reactor work, run through the NNSA on behalf of the Navy.

That NNSA total represents a major increase in agency weapons funding over levels projected in the previous budget request, something that several members noted during an appearance by NNSA head Lisa Gordon-Hagerty at the House Armed Services Committee's Strategic Forces Subcommittee.

Gordon-Hagerty defended the need for the funds, saying, "We have very limited margin for error" to keep both the warhead modernization efforts and the development of plutonium pit production capabilities on track. She described the funding as "requirements-based" and the result of consultations within the NNSA and DoD partners, and she expressed confidence that the money would be put to good use.

A different view was painted by Allison Bawden, director of the natural resources and environment team within the Government Accountability Office, who also appeared before the committee. Bawden warned that the "spend rate has to go up very quickly" for NNSA to be able to spend all the money coming its way.

Asked directly by Rep. Susan Davis, D-Calif., if NNSA could successfully execute a roughly \$3 billion increase from its FY20 to FY21 request, Bawden said it would be "very challenging" to do so.

Expect agency officials to face similar questions about how to spend its money on Wednesday, when they appear in front of the House Energy and Water Development, and Related Agencies Subcommittee, the appropriations panel with the most direct control of the NNSA's budget.

The chairwoman of that subcommittee, Rep. Marcy Kaptur, D-Ohio, told Defense News this week that the administration is "again proposing a nuclear weapons budget that does not establish clear priorities."

"The proposed \$3.1 billion increase for weapons is simply sprinting toward failure, and Congress should right-size NNSA's workload to match what the complex can realistically do," Kaptur said.

For comparison, here are the five-year projections for NNSA's weapons activities listed in the FY21 request, versus what was projected in the FY20 request:

- FY21: \$15.6 billion for weapons activities, up from \$12.8 billion projected in FY20.
- FY22: \$15.94 billion for weapons activities, up from \$13 billion projected in FY20.
- FY23: \$16.27 billion for weapons activities, up from \$13.1 billion projected in FY20.
- FY24: \$16.6 billion for weapons activities, up from \$13.4 billion projected in FY20.

- FY25: \$16.96 billion for weapons activities, up from \$13.5 billion projected in FY20.

All told, that equals an estimated \$81.37 billion to be spent on nuclear weapons programs, including modernization of a number of warheads. Combined with the Pentagon's plan to spend about \$87 billion over that same time frame on nuclear modernization, the overall price tag for the Future Years Defense Program could be at least \$163 billion.

Stephen Young, an expert with the Union of Concerned Scientists, said that the nuclear "bow wave" of spending that has long been predicted is finally arriving. But he agrees that the NNSA is likely to be challenged in spending its significant increase in dollars.

"The problem is, the NNSA will almost certainly fail to achieve its admittedly aggressive timelines, even though it is throwing money at the problem. If the United States does not have an achievable, realistic warhead plan, the Pentagon will face difficult choices going forward," Young said. "The good news is, because the U.S. nuclear arsenal is so robust, even if the NNSA has significant failures, the U.S. deterrent will remain robust."

<https://www.defensenews.com/smr/nuclear-arsenal/2020/03/04/the-white-house-gave-this-nuclear-agency-a-giant-funding-increase-can-it-spend-it-all/>

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## US COUNTER-WMD

Breaking Defense (Washington, D.C.)

### **Army Ramps Up Funding for Laser Shield, Hypersonic Sword**

By Sydney J. Freedberg Jr.

Feb. 28, 2020

WASHINGTON: With adversaries amassing long-range precision weapons, the Army is asking Congress for more than \$1 billion in 2021 to develop hypersonic missiles for offense and missile-killing lasers for defense. Hypersonics funding is up 86 percent from last year and high energy lasers soared a stunning 209 percent.

The aim of all this money is to move technology out of the lab and into mass production, so the service can field its first 50-kilowatt lasers on Stryker armored vehicles in 2022, its first truck-launched hypersonics in 2023, and truck-mounted lasers in the 100-300 kW class in 2024.

The Army wants these technologies so urgently it's devoted a unique unit to developing them, the Rapid Capabilities & Critical Technologies Office. RCCTO's priority is so high that its director, Lt. Gen. Neil Thurgood, told me he speaks to the Army's civilian acquisition executive, Bruce Jette, and the head of Army Futures Command, Gen. John "Mike" Murray, "multiple times a week, sometimes multiple times a day." As for the Army's top four leaders – Sec. Ryan McCarthy, Undersec. James McPherson, Chief of Staff Gen. James McConville, and Vice-Chief Gen. Joseph Martin – Thurgood meets with them "multiple times throughout the month."

Why so much urgency and high-level attention?

Strategic Offense, Operational Defense

"Our potential adversaries have created the A2/AD environment," Thurgood told me in an interview. That's short for Anti-Access/Area Denial, the Pentagon term of art for the dense layered



defenses of long-range weapons – anti-aircraft, anti-ship, and ground attack – that Russia, China, and even North Korea and Iran are building to keep US forces at bay.

“In order to move forces into that, you’ve got to create lanes of penetration,” Thurgood said. “Hypersonics is a strategic weapon that does that.”

The Army wants hypersonics for precision non-nuclear strikes against high-priority linchpins of the enemy defense, like hardened command posts and anti-aircraft systems. That should rip open seams in the A2/AD zone through which other forces – not just Army but Air Force, Marine, and Navy as well – can advance in what’s called a Joint All Domain Operation, much like how Panzers and Stukas led the way for German infantry during the blitzkrieg.

But the US must also protect its own forces from the enemy’s long-range missiles. Today, that’s the role of missile defense systems like Patriot, THAAD, and Aegis. But shooting down a missile with another missile is an expensive proposition. An interceptor that can hit another missile in flight is much more sophisticated and expensive than a missile that can hit a target on the ground: A Patriot costs \$3 million, about the same as three Scuds. So a well-resourced attacker like Russia or China can “flood the zone” with cheap offensive missiles until the missile defenders run out of shots.

Hence the attraction of laser weapons, which not only shoot at the speed of light – making an intercept much easier – but also can keep shooting as long as they have electrical power. Lasers have their limits, however. Bad weather bothers them more than it does missiles, and their energy output is still too low to defeat most targets, although the Pentagon has an urgent joint effort underway to ramp up power.

At least for the near term, while hypersonics are what the Army is calling strategic fires, “directed energy is much more on that tactical/operational side,” Thurgood told me. Those are very much for what we would call a point defense or an area defense. Not really at this point do we have lasers that are strategic weapons. My assessment is that technology is still advancing towards that end game.”

#### Timelines & Transitions

The most tactical system, with the lowest power and the earlier fielding date, is the roughly 50-kilowatt weapon being developed to go on the Stryker armored vehicle. This laser goes by the acronym DE-SHORAD, which is mercifully short for Directed Energy – Maneuver Short-Range Air Defense. The Army is already building MSHORAD Strykers that will use guns and missiles to shoot down enemy drones, helicopters, and even low-flying attack jets. But it is eager to add laser weapons to the mix, starting with an initial platoon of four vehicles in 2022.

While 8×8 Stryker can keep up with frontline mechanized forces over rough terrain, it can’t carry a laser large enough to defeat cruise missiles. That’s the role of the IFPC High Energy Laser, a roughly 300-kW weapon mounted on a heavy truck.

As with MSHORAD, there are other versions of IFPC, the Indirect Fire Protection Capability, that use more conventional weapons such as missiles. IFPC will hang back behind the front, covering command posts and other crucial targets that aren’t constantly on the move.

“The DE-MSHORAD is on a Stryker there because they go with the maneuver force,” Thurgood said. “IFPC’s on a truck for fixed and semi-fixed locations.”

Thurgood’s role at RCCTO is to field combat-capable prototypes of these technologies – an initial platoon or battery of each to prove out the technology, experiment with tactics, and if necessary fight.

As each weapon matures and moves into the field, he explained, his RCCTO will hand it over the Army's normal acquisition organization, the Program Executive Office for Missiles & Space, led by Maj. Gen. Robert Rash. Rash's PEO already has a transition team embedded with Thurgood's RCCTO for each weapon to smooth the handover. If all proceeds as planned, then each weapon will move from RCCTO to the PEO a year after its initial fielding and become a formal Program Of Record:

- The first platoon of 50-kW Strykers will enter service in 2022, and the DE-SHORAD effort will transition to PEO Missiles & Space in 2023.
- The first battery of Long-Range Hypersonic Weapons will enter service in 2023, and the LRHW effort will transition to the PEO in 2024.
- The 300-kW truck-borne laser will enter service in 2024, and the IFPC High Energy Laser effort will transition to the PEO in 2025.

### Show Me the Money

If you look at the recently released budget request for 2021, you'll see funding in the Research, Development, Test, & Evaluation (RDTE) accounts for all these weapons. Most of it falls under Advanced Technology Development and Advanced Component Development & Prototypes: These are levels 3 and 4 respectively on a scale from Budget Activity 1, Basic Research, to Budget Activity 7, Operational System Development.

What you won't see is the procurement funding for the PEO to actually start mass-producing hypersonics or lasers once Thurgood hands them over.

"They're working on that," Thurgood told me. "You'll probably see that in about '22" – that is, as part of next year's budget request for fiscal 2022. But before the Army can nail down those numbers, he said, the service's headquarters staff in the Pentagon has to figure out how many batteries it wants of each, which in turn depends on how the new technology fits into its evolving concepts of future conflict and specific joint war plans.

That said, the RCCTO is laying the groundwork for mass production. The challenge here is that, while there are plenty of private companies building lasers for industrial cutting, and a fair number of defense contractors building booster rockets that can get a hypersonic weapon up to speed, there is no industrial base to mass-produce hypersonic glide bodies, the part of the weapon that actually strikes the target. The technology is too new and its manufacture too challenging.

In fact, the Common Glide Body that both the Army and Navy hypersonic missiles will use was developed and is still being built, not by any defense contractor, but by Sandia National Laboratory, a government-owned facility most famous for research on nuclear weapons. Starting last year, the Army has contracted with private-sector companies like Dynetics to build facilities for mass production. Those companies now have teams at Sandia learning about the technology from its inventors.

Why not just keep the work in the lab? "Labs are great, they do wonderful work, but they're not necessarily great producers of multiples of things," Thurgood said. "We've got to get out of the craftsman lab approach into a commercialized approach. That's what's happening right now."

"There's not a single prime doing all this work," he added. "It's actually about four or five major contracts and then a bunch of minor contracts."

In the interests of speed and efficiency, there's a marked amount of inter-service cooperation underway. The Army manages the contract to build the Common Glide Body – the most technically challenging piece of the weapon – and gets reimbursed out of the Navy budget for glide bodies that go the sea service. Conversely, the Navy manages the contract to build the rocket booster or

“stack” – which, while less bleeding-edge, is still literally rocket science – and gets reimbursed out of the Army budget for boosters that go to the ground force. Each service then customizes its combined glide-body-and-booster to be launched either off trucks or naval vessels.

The Air Force wants to launch its hypersonic missiles off airplanes, which is a very different technical problem, and it’s also exploring the most advanced technology – such as “air-breathing” hypersonic cruise missiles that fly under continual thrust like a jet plane, instead of having a rocket booster launch a glide body. So the Air Force has its own separate programs. But all three services come together on a Common Hypersonic Glide Body Board of Directors, which meets at least quarterly – the most recent time was last week – with each service taking a turn as chairman – last week was Thurgood’s turn.

“The joint coordination has been phenomenal,” he told me. “In the past, you might have seen we each had our own contract for each of these things. That’s too slow and too expensive.”

So when you look at the \$801 million for “Long-Range Hypersonic Weapon” under RDTE Budget Activity 4 in the Army budget request for 2021, that includes funds the service is transferring to the Navy to buy boosters.

But that \$801 million in Research & Development isn’t everything the Army is spending on hypersonics. There’s another \$30 million in Science & Technology. UPDATE Helpful Army budgeteers have pointed out another \$20 million or so we missed — we’ll update this story when we nail down the numbers. UPDATE ENDS

“While we’re doing this, you can’t also walk away from the future, so there’s still S&T work going on,” Thurgood said. After the initial version is fielded, he said, “What is block two? What is block three?....You keep modifying, based on what the threat is doing.”

There’s joint cooperation on high-energy lasers as well, led by Thomas Karr, the Pentagon’s assistant director for directed energy. Within the Army budget for 2021, the biggest item by far is \$212.3 million under Budget Activity 5 — System Development & Demonstration (SDD) – for the Stryker-mounted 50-kW laser, DE M-SHORAD. (That figure isn’t in the budget, but it’s the laser-specific portion of a larger \$284.2 million line item for M-SHORAD overall, Army officials explained).

But, as with hypersonics, there are multiple budget lines for lasers at different stages of RDTE, totally another \$66 million. To break it down, the ’21 request asks for \$28.2 million in Applied Research (Budget Activity 2), \$29.7 million in Advanced Technology Development (BA 3), and \$8.1 million in Advanced Component Development & Prototypes (BA 4).

That’s actually less than the total appropriated — \$90 million — for High Energy Lasers in those three categories in 2020. Why? Because more and more, these technologies are moving up the scale from early research to prototyping and, soon, production.

<https://breakingdefense.com/2020/02/army-ramps-up-funding-for-laser-shield-hypersonic-sword/>

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Arms Control Today (Washington, D.C.)

## **Budget Would Augment National Missile Defense**

By Kingston Reif

March 2020

The Trump administration's fiscal year 2021 defense budget request seeks to supplement U.S. homeland missile defenses by modifying existing systems to defend against longer-range threats. Specifically, the budget submission for the Missile Defense Agency (MDA) seeks funds to adapt the Aegis missile defense system and the Terminal High Altitude Area Defense (THAAD) system, designed to defeat short- and intermediate-range missiles, to intercept limited intercontinental ballistic missile (ICBM) threats.

The MDA is asking for \$39.2 million for the Aegis system to provide "an initial underlayer capability to" the Ground-Based Midcourse Defense (GMD) system based in Alaska and California. Its request also contains \$139 million to "initiate the development and demonstration of a new [THAAD] interceptor prototype to support contiguous United States defense." The agency is planning to test this capability in fiscal year 2023.

In addition, the MDA plans to test the Aegis Standard Missile-3 (SM-3) Block IIA interceptor, which was originally designed to counter regional missile threats during their midcourse phase of flight, against an ICBM target this spring. Aegis interceptors can be based on Navy ships or on land.

Like the SM-3 Block IIA interceptor, the mobile, land-based THAAD system was originally designed to defend against short- to intermediate-range missile threats in their descent phase of flight.

"[W]hat this budget really does for us is starts to say, let's take advantage of these regional systems that have been so successful and are very flexible and deployable," Vice Adm. Jon Hill, the MDA director, told reporters on Feb. 10.

"When we say 'layered homeland defense,' what we mean is, we want to give the country options," he said.

Such a layered missile defense theoretically could provide four opportunities to intercept an incoming North Korean ICBM: two shots with the existing GMD interceptors, a third shot with the SM-3 Block-IIA missile, and a fourth shot with an extended-range THAAD interceptor.

The proposal to expand the U.S. homeland missile defense footprint is consistent with the 2019 Missile Defense Review, which specifically called for bringing the SM-3 Block-IIA missile into the national missile defense architecture. (See ACT, March 2019.)

An increase in the number of U.S. interceptors capable of intercepting ICBMs could exacerbate Russian and Chinese concerns about the threat the defenses pose to their nuclear deterrents and prompt them to take steps to counter new U.S. missile defenses.

The administration is asking for a total of \$20.3 billion for missile defense programs in fiscal year 2021, a decrease of \$1.6 billion below the fiscal year 2020 appropriated level. Of that amount, \$9.2 billion would be for the MDA, \$7.9 billion would be for non-MDA-related missile defense efforts such as early-warning sensors and the Patriot system, and \$3.3 billion would be for nontraditional missile defense and left-of-launch activities such as offensive hypersonic glide vehicles.

The MDA request of \$9.2 billion would be a decrease of 12 percent from the fiscal 2020 level of \$10.5 billion. (See ACT, January/February 2020.)

The GMD system would receive about \$1.7 billion under the budget proposal, a decrease of about \$465 million below last year's spending level. Of the \$1.7 billion, \$664 million would be for the new

Next Generation Interceptor. The MDA decided to pursue development of the interceptor last year in the wake of the demise of the Redesigned Kill Vehicle. (See ACT, October 2019.)

The MDA “will continue design and development activities for two competitive interceptor development contracts scheduled to be awarded in 4th quarter of fiscal year 2020,” according to the budget documents. The agency is aiming to begin fielding the new interceptor in the late 2020s.

The MDA is proposing to request \$9.3 billion for the GMD system between fiscal years 2021 and 2025. This is an increase of \$3.7 billion, or 66 percent, above what the agency planned to request between fiscal years 2020 and 2024.

The budget request also includes \$207 million “to define concepts and develop engineering requirements” to defend against new hypersonic missile threats.

To make room for increased investments in homeland missile defense, the request “reprioritizes lower return on investment missile defense research.”

Programs included in the fiscal year 2020 request that are not funded in the latest submission include two homeland missile defense radars for deployment in the Pacific, a space-based neutral particle beam to destroy missiles during their boost and midcourse phases of flight, a multiple-object kill vehicle to arm a single ground-based interceptor with several kill vehicles, and an airborne laser to zap ballistic missiles during their boost phase.

In addition, the budget request includes no funding for an Air Force program included in last year’s request to develop an air-launched interceptor for boost phase defense and for the Space Development Agency to study space-based interceptors.

<https://www.armscontrol.org/act/2020-03/news/budget-augment-national-missile-defense>

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DVIDS

## **Troops Echo History, Play Baseball**

By Sgt. 1st Class Shaiyla Hakeem

Feb. 26, 2020

Batter-up!

U.S. Army Soldiers, with 655 Regional Support Group (RSG), 316 Sustainment Command (Expeditionary) (ESC), 377 Theater Sustainment Command (TSC), donned their gas masks and participated in an improvised game of baseball Feb. 12, 2020 at Joint Training Center-Jordan, paying tribute to former service members who used the sport to prepare for chemical warfare during WWI.

The idea for the historical recreation was spawned from U.S. Army Staff Sgt. Aimee Ouellette, Chemical, Biological, Radiological and Nuclear (CBRN) and safety noncommissioned officer with 655 RSG, 316 ESC, 377 TSC. She is currently an undergraduate student at the American Military University, slated to graduate in May with a bachelor’s degree in history. While conducting research for her senior thesis, “The Influence of America’s Game on the Country’s Chemical Training in WWI,” she discovered a historic military photograph from 1918 showcasing Soldiers posing in gas masks with baseball bats and mittens in hand. She later found that baseball games were used as training aids and morale boosters for military personnel during WWI.

“This [gas mask baseball] was somebody’s idea and it took off because everybody likes playing baseball,” said Ouellette, “It’s just a fun game!”

The historic 1918 snapshot found in the U.S. National Archives, tagged under chemical warfare service and drills, is said to have been captured by Underwood and Underwood. This photograph displays Soldiers posing outside the Gas Defense Plant in Long Island City, N.Y., which assembled more than 3 million gas masks during the time frame of the war. This iconic photo was mimicked by 655 RSG Soldiers, followed by a game of gas mask baseball, to honor the WWI Soldiers and their training methods that were to raise awareness, knowledge and confidence in dealing with poisonous gas.

CBRN hazards come in a variety of guises and varying methods of release. Soldiers must be ready and capable to conduct a full range of military operations to defeat all enemies regardless of the threats they pose, even chemical threats. Common gasses used as weapons during the war included phosgene, chlorine and mustard gas, commonly known as, “the king of battle gasses.”

According to Ouellette, the level of psychological terror for chemical warfare during the WWI era was far different than how we view potential gas threats in modern-day times. People were said to have commonly suffered from, “gas mania” and “gas fright,” meaning they reacted defensively during times when there was no actual threat of poisonous gas.

“Rumors were going around like your eyes could fall out or you would be perfectly fine and just die the next day,” said Ouellette.

The U.S. Chemical Warfare Service was founded during WWI with its name being changed in 1946 to the Chemical Corps. More than 2 million men were drafted to serve in WWI. During that period of time, Soldiers used small box respirator gas masks that were manufactured by the British. The masks were equipped with a padded nose clip, a bite piece, and were said to have been far more difficult to don and tolerate for long periods of time compared to modern masks. This presented more of a reason to practice proper donning techniques, breath control and overall mental toughness.

“The baseball games were used for teaching gas mask tolerance without the panic,” explained Ouellette.

Soldiers would also practice their military occupational specialties with their masks donned. For example, combat medics would carry stretchers through rugged terrain while engineers would dig trenches in their CBRN protective gear. It seemed that baseball equipment was readily available at most training camps so using the game to train and build tolerance seemed to be a win-win situation.

Aside from baseball equipment, multiple Major League Baseball (MLB) players served in the war and aided with chemical warfare training. The late Wesley Branch Rickey, who served as commander of 1st Gas Regiment during WWI with the U.S. Army, was a member of the Chemical Warfare Service and the MLB. Other notable professional players who served included George Sisler, Tyrus Cobb and Christy Mathewson, who died from complications of tuberculosis on the eve of the 1925 World Series.

<https://www.dvidshub.net/news/363910/troops-echo-history-play-baseball>

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# US ARMS CONTROL

Brookings (Washington, D.C.)

## **Experts Assess the Nuclear Non-Proliferation Treaty, 50 Years after It Went into Effect**

By Michael E. O'Hanlon, Robert Einhorn, Steven Pifer, and Frank A. Rose

March 3, 2020

March 5, 2020 marks the 50th anniversary of the entry into effect of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). Five decades on, is the treaty achieving what was originally envisioned? Where is it succeeding in curbing the spread of nuclear weapons, and where might it be falling short? Four Brookings experts on defense and arms control weigh in to assess the NPT today.

Michael O'Hanlon (@MichaelEOhanlon), Director of Research and Senior Fellow in the Foreign Policy program: There are still more than 10,000 nuclear warheads on Earth. But I think the NPT, on balance, has been enormously successful.

Current arsenals are big, but they are only about one-fifth the size of what they were a half-century ago. While superpower arms control, and the end of the Cold War, deserve most of the credit for the reductions (along with restraint by China, in particular, in not building up too much), the NPT created some of the broader political context and moral pressure that led to these reductions. While it sought to prevent non-nuclear states from ever getting the bomb, its main bargain also required the existing nuclear weapons states to reduce and ultimately eliminate their arsenals to hold up their own ends of the bargain.

Frank A. Rose

Senior Fellow, Security and Strategy - Foreign Policy

The arsenals of the United States and Russia still account for more than 90% of the total number of warheads on Earth today. The United Kingdom, France, China, India, and Pakistan each likely possesses between 150 and 300, with Israel's unconfirmed arsenal totaling almost 100 bombs. North Korea probably has a couple dozen nuclear weapons, with enough fissile material to make a few dozen more. That said, the situation is not entirely grim. While nuclear proliferation continues, and nine countries are known to possess nuclear weapons, the fear once expressed by John F. Kennedy that at least a couple dozen countries could have the bomb by the 21st century has not panned out. And of course, nuclear weapons have not been used again in combat.

An additional achievement, for which a few of my colleagues here deserve some of the credit, is the tightening of inspection regimens under the NPT. In particular, the so-called "Additional Protocol" has created the right for inspectors to go to places where they suspect monkey business, even if those sites are not officially declared by the country in question. This arrangement tends to work only if national intelligence capabilities, and/or whistleblowers, provide information about suspicious activities. But at that point, inspectors can be more effective than in the years before the Additional Protocol concept was developed and legitimated. It has helped make the nuclear inspections in the Iran nuclear deal much more effective (even if other aspects of that deal have proven highly controversial). A similar concept would almost surely be used in any nuclear deal with North Korea in the years ahead.

On balance, I would give 2.5 cheers to the NPT!

Robert Einhorn, Senior Fellow in the Arms Control and Non-Proliferation Initiative: As we mark the 50th anniversary of the NPT's entry into force, there is much to celebrate.

Without the treaty, the powerful norm against proliferation it created, and its associated controls on exports of sensitive technologies, the rigorous International Atomic Energy Agency (IAEA) monitoring system, and the threat of sanctions for violating nonproliferation obligations, we would be living in the world of many nuclear-armed states that President John F. Kennedy predicted. As Mike points out, today there are only nine countries with nuclear weapons, the same number as 25 years ago — a remarkable indication of the NPT's durability and its contribution to international stability.

Without the treaty, and the confidence provided by its IAEA verification system that nuclear equipment and materials would not be diverted to the production of nuclear weapons, the widespread use of nuclear energy for peaceful purposes would not have been possible — not just for electricity generation, but also for the production of isotopes for use in medicine, agriculture, and industry.

While the NPT's central goal was to prevent additional nuclear-armed states, it sought to assure non-nuclear weapon states (who were required to renounce nuclear arms) that the asymmetry between them and the five original nuclear powers (who were allowed to keep their nuclear weapons) would not last forever. It therefore obligated the five — China, France, Russia, the U.K., and the U.S. — to make “good faith” efforts to reduce and ultimately eliminate their nuclear arsenals.

In the last 50 years, the United States and the USSR/Russia have made huge progress toward nuclear disarmament, reducing their nuclear weapons inventories by close to 90% from Cold War levels. Mike is right that they pursued nuclear arms limitations and reductions primarily because they believed such arms agreements would serve their own security interests, not because they were obliged to do so under the NPT. But Mike is also right that the NPT helped create the stable strategic framework in which such agreements were acceptable to the superpowers. And the desire of Washington and Moscow to ensure the success of the treaty and its nonproliferation goal gave them additional incentive to pursue nuclear disarmament.

So the NPT's first 50 years have been remarkably successful. But there are warning signs that its continued success cannot be taken for granted.

The international security environment has become increasingly unsettled. U.S.-Russian and U.S.-Chinese bilateral relations have sharply deteriorated. With the growing strategic capabilities of additional countries, especially China, the bipolar model of stability has become outdated. New technologies and types of weapons — including offensive cyber, counter-space, and hypersonic weapons — could further destabilize the security environment.

There are growing concerns not just that new nuclear arms reduction agreements are very unlikely, but that existing agreements, including the Intermediate-Range Nuclear Forces (INF) Treaty, are unraveling and that this could lead to renewed nuclear arms competitions and even increase the risks that nuclear weapons will once again be used.

It is not only the NPT's disarmament goals that are at risk. There are fears that the number of nuclear-armed states could increase.

With U.S. withdrawal from the Joint Comprehensive Plan of Action (JCPOA) and Iran rebuilding its enrichment program, the JCPOA is hanging by a thread, and some Iranians are even talking about leaving the NPT. Meanwhile, the Saudi crown prince says the kingdom will acquire nuclear weapons if Iran does, and President Recep Tayyip Erdoğan asks why other countries can have nuclear weapons and Turkey cannot.

In Northeast Asia, U.S.-North Korea negotiations have ground to a halt, raising concerns in South Korea and Japan that Pyongyang's nuclear capability may be permanent at a time when doubts have arisen about the reliability of U.S. alliance commitments and security guarantees, which have been the critical factor enabling those U.S. allies to renounce nuclear weapons of their own.

An additional warning sign is the continued polarization within the NPT membership, with non-nuclear NPT parties — especially among the non-aligned — concerned that the NPT nuclear powers — particularly the United States and Russia — are not taking their nuclear disarmament commitment seriously. This concern gave impetus to the negotiation of the Treaty on the Prohibition of Nuclear Weapons, which the five NPT nuclear weapons states and most of their allies strongly oppose.

These challenges to the future of the NPT and the broader global nonproliferation regime will be addressed at the upcoming April-May NPT Review Conference, a conference of NPT parties held every five years to review the operation of the treaty and consider means to strengthen it. The review conference is likely to be a contentious one. But given the deep reservoir of members' support for the treaty, it is possible that, despite their differences, they will be able to come together on a conference outcome that reaffirms the essential role of the NPT in strengthening international security and pledges their support for a strong and durable treaty for many years to come.

Nothing could better ensure a positive review conference outcome than a Trump administration decision to join with Russia in extending the New START Treaty for another five years, which would preserve predictability and transparency in the U.S.-Russian strategic relationship and provide the breathing space needed to consider how to promote stability and future arms control measures in the increasingly complex and challenging international security environment we are now facing.

Steven Pifer (@steven\_pifer), Nonresident Senior Fellow in the Arms Control and Non-Proliferation Initiative: Mike and Bob are correct: The NPT has been largely successful. While President Kennedy in 1963 pessimistically opined that there could be as many as 20 nuclear-armed states by 1975, today there are only nine. As a result of arms reduction agreements and unilateral decisions, both Washington and Moscow have dramatically cut their nuclear arsenals from peaks of over 30,000 and 40,000 weapons respectively to active arsenals today of under 4,500 weapons each.

That's good news, to be sure. But there are reasons for unease as we mark the 50 anniversary of the NPT and approach the treaty's five-year review conference, which begins on April 27. As Bob noted, the international environment has deteriorated, the Joint Comprehensive Plan of Action regarding the Iranian nuclear program is in deep trouble, and no progress has been made in persuading North Korea to forgo or even cap its nuclear arsenal.

Moreover, Russia, China, and the United States are modernizing their strategic nuclear forces. The Russians declined a U.S. proposal to follow up the 2010 New Strategic Arms Reduction Treaty (New START) with a new bilateral negotiation to cover all their nuclear arms, citing concerns about missile defense and conventional strike weapons. The 1987 INF Treaty has collapsed, and New START expires in less than one year unless the United States and Russia agree to its extension. The Trump administration now calls for a trilateral U.S.-Russia-China negotiation to cover all nuclear weapons, but appears unprepared to offer anything that would entice Moscow or Beijing to agree.

The nuclear weapons states — the United States and Russia, in particular — still base their security largely on nuclear deterrence. Nuclear deterrence likely prevented a superpower conflict during the Cold War. It should also be noted, however, that deterrence at several points almost failed, and the consequences would have been catastrophic. The risk of deterrence failure will remain as long as countries maintain nuclear arsenals.

The lack of recent progress by the nuclear weapons states to further reduce their arsenals — with the NPT's ultimate goal of complete nuclear disarmament nowhere in sight — frustrates many non-nuclear weapons states and gave birth to the 2017 Treaty on the Prohibition of Nuclear Weapons. Ongoing nuclear modernization programs, the INF Treaty's demise, uncertain status of New START, and lack of progress on bringing the 1996 Comprehensive Test Ban Treaty into force will make the review conference a difficult one for the nuclear weapons states, particularly the United States and Russia.

Washington and Moscow could help themselves by agreeing to extend New START to 2026 and launching in-depth strategic stability talks to cover nuclear weapons and the full range of associated issues, including missile defense, long-range conventional strike arms, hypersonic weapons, and the impact of developments in the cyber and space domains. It would be useful to engage China in strategic stability discussions as well.

Unfortunately, there appears little prospect of this in the near future. So, as Bob wrote, the review conference will likely be a rough one.

<https://www.brookings.edu/blog/order-from-chaos/2020/03/03/experts-assess-the-nuclear-non-proliferation-treaty-50-years-after-it-went-into-effect/>

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VOA (Washington, D.C.)

## **US Lawmakers: Iran, North Korea Are Biggest Threats to Nuclear Nonproliferation Treaty**

By Eunjung Cho

March 3, 2020

WASHINGTON - U.S. lawmakers stressed that Iran and North Korea pose the biggest threats to the Nuclear Nonproliferation Treaty (NPT), in a hearing Tuesday marking the 50th anniversary of the treaty.

Democratic Congressman Theodore Deutch, chairman of the Middle East, North Africa, and International Terrorism subcommittee of the House Foreign Affairs Committee, said, "Congress must understand how to protect the treaty from two immediately looming challenges: Iran and North Korea."

Deutch pointed out North Korea is the only state that has withdrawn from the NPT and the U.S. must work with the international community to ensure that Iran does not go down the same path.

Iran's threats

Republican Congressman Joe Wilson was among many who expressed concerns over Iran's repeated threats to quit the NPT.

"The North Korean case has served as a model for the mullahs in Iran. They learned that through threatening to leave the NPT they can hold the international community hostage and extract important concessions. The Iranians have also learned that the violations or abrogation of NPT come with absolutely no penalties," said Wilson.

Iran first threatened to exit the NPT in May 2018 following President Donald Trump's announcement of the U.S. withdrawal from the JCPOA, the Joint Comprehensive Plan of Action. Iran also has taken incremental steps to reduce its compliance with the nuclear deal it forged with the U.S., China, France, Russia, Britain and Germany.

Despite Iran's threats, experts who testified at the hearing held views that Iran will not easily drop out of the NPT.

"I am a slight optimist in this regard only because the strength of the treaty is such that other countries like Russia and China would take great alarm at Iran following the path of North Korea. So I think there's some pressure that can be used multilaterally," said Richard Johnson, senior director for fuel cycle and verification at the Nuclear Threat Initiative.

Stephen Rademaker, former Assistant Secretary of State for Arms Control, pointed out Iran is playing games to get a better deal from the Europeans.

"I think it's much easier for them to break out of the JCPOA but to break out of the NPT would be a dramatic step. That would cost them dearly," said Rademaker.

Real global danger

North Korea's continued development of nuclear weapons and delivery systems also raised alarms — especially in light of North Korea's first weapons test of the year Monday.

"Yesterday, meanwhile, North Korea sent two short range ballistic missiles into the Sea of Japan. There's so much going on we don't even hear about this activity anymore," said Republican Congresswoman Ann Wagner.

Republican Congressman Ted Yoho noted North Korea is "a real danger to the international community."

Yoho said "threats posed by an unstable North Korea directly endangers our allies in the Asia Pacific region including South Korea and Japan and others. ... Moving forward, it is imperative that we purpose NPT discussions with our regional partners to ensure the containment of a nuclear North Korea, and prevent the further sophistication of their missiles development program."

Experts also warned North Korea's nuclear weapons deployment will trigger a cascade of proliferation.

New START Treaty

Democratic members of the committee expressed frustrations over the looming expiration of the nuclear deal with Russia.

"Do you see any evidence of the Trump administration moving expeditiously or with any kind of sense of urgency to renew, or at least extend the new START treaty?" Congressman Gerald Connolly posed a question to one of the experts.

Congressman David Cicilline also said, "I'm particularly interested in your assessment of the United States' action as it related to disarm, particularly with our failure to extend the new START treaty."

Experts expressed divergent views on the U.S.'s nuclear disarmaments efforts.

Bonnie Jenkins, former coordinator for Threat Reduction Programs at the State Department, said U.S. actions to withdraw from the JCPOA and the Intermediate-Range Nuclear Forces Treaty and not ratify the Comprehensive Nuclear Test Ban Treaty "have violated the spirit if not the letter of the U.S. obligations under the Article 6 of the NPT."

"I would like to see for the Trump administration to support and reaffirm global nonproliferation norms," Jenkins noted.

On the contrary, Stephen Rademaker, former assistant secretary of state for arms control, said he disagrees with the idea that continued existence of America's nuclear deterrent induces others to want to have nuclear weapons as well.

"It is primarily the U.S. nuclear umbrella" that has persuaded countries like South Korea and Japan from developing nuclear weapons, according to Rademaker.

The 2020 NPT Review Conference will take place at the U.N. headquarters in New York from April 27 to May 22.

<https://www.voanews.com/usa/us-politics/us-lawmakers-iran-north-korea-are-biggest-threats-nuclear-nonproliferation-treaty>

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The Hill (Washington, D.C.)

## **Menendez, Graham Lobbying European Allies to Open Negotiations with Iran**

By Laura Kelly

March 3, 2020

A bipartisan pair of senators is lobbying European allies to bring Iran back to the negotiating table to end its nuclear weapons ambitions, curb its missile program and end its support of terrorist proxies.

The plan laid out on Tuesday by Sens. Bob Menendez (D-N.J.) and Lindsey Graham (R-S.C.) is separate from the Trump administration's maximum pressure campaign aimed at bankrupting the Islamic Republic's support for proxy fighting forces and developing nuclear weapons.

"Sen. Graham and I have been talking with our European partners about a multilateral strategy to get Iran back to the table and advance three clear goals," Menendez, who is the ranking member of the Senate Foreign Relations Committee, said in remarks at the American Israel Public Affairs Committee (AIPAC) policy conference in Washington D.C.

"No nuclear weapons. No threatening intercontinental ballistic missiles, and no support for terrorism," he elaborated.

The Democratic senator made his proposal in front of more than 18,000 pro-Israel members of an organization that firmly opposed the Obama administration's nuclear deal with Iran, called the Joint Comprehensive Plan of Action.

In 2015, AIPAC board members spoke out against the deal, writing in a report that "we have come to the unfortunate conclusion that this deal does not achieve the minimum requirements necessary for an acceptable agreement."

President Trump pulled out of the JCPOA in 2018 and reimposed sanctions on Iran, although Tehran and the other signatories, including France, the U.K., Germany, Russia and China, remain in the deal.

Tehran has balked at the sanctions and increased its uranium enrichment as provocation, testing the limits of the 2015 nuclear deal.

Menendez on Tuesday criticized the Trump administration's sanctions campaign as lacking strategy.

"Maximum sanctions pressure on its own is a tactic, not a strategy," the senator said. "We need a strategy, one that uses diplomacy to ensure Iran has no pathway to nuclear weapons."



Menendez's proposal includes bringing in Gulf countries to partner with Iran on a regional nuclear energy program for "explicitly peaceful purposes," with the U.S and international community providing oversight.

"A nuclear fuel bank, administered by the International Atomic Energy Agency, with U.S. veto power could prevent misuse and end any pathway to a nuclear weapon," he said.

Menendez and Graham first announced their efforts to partner with European allies last month after meetings at the Munich Security Conference and in an interview with The Washington Post.

Trump administration officials say their maximum pressure campaign on Iran is aimed at forcing a hard choice for Tehran in its behavior, limiting funds available to build up its weapons programs and bankrupting the Islamic Republic's support for proxy fighting forces across the region.

This includes Hezbollah in Lebanon, Hamas in the Gaza Strip, the Houthis in Yemen, Shiite militias in Iraq and its support for Syrian President Bashar Assad against rebels in Syria's civil war.

"We have a strategic campaign to change their behavior," Secretary of State Mike Pompeo said at a hearing on Iran policy before the House Foreign Affairs Committee last month.

<https://thehill.com/policy/international/485724-menendez-graham-lobbying-european-allies-to-open-negotiations-with-iran>

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## COMMENTARY

Arms Control Today (Washington, D.C.)

### **No One Wins an Arms Race or a Nuclear War**

By Daryl G. Kimball

March 2020

Fulfilling a goal outlined in its 2018 Nuclear Posture Review report, the Trump administration acknowledged last month that the United States has deployed for the first time a low-yield nuclear warhead on some U.S. submarine-launched ballistic missiles (SLBMs).

The move comes as the administration is proposing to increase spending to more than \$44 billion next year to continue and, in some cases, accelerate programs to replace and upgrade all the major elements of the bloated U.S. arsenal. Unless curtailed, the plan, which departs in important ways from long-standing U.S. policies, will accelerate global nuclear competition and increase the risk of nuclear war.

As if to underscore the dangers of the administration's strategy, the Defense Department led an exercise last month simulating a limited nuclear war. "The scenario included a European contingency.... Russia decides to use a low-yield, limited nuclear weapon against a site on NATO territory," and the United States fires back with a "limited" nuclear response, according to the Pentagon. The U.S. response presumably involved the low-yield sub-launched warhead, known as the W76-2.

The exercise perpetuates the dangerous illusion that a nuclear war can be fought and won. The new warhead, which packs a five-kiloton explosive yield, is large enough to destroy a large city. It would be delivered on the same type of long-range ballistic missile launched from the same strategic submarine that carries missiles loaded with 100-kiloton strategic warheads. Russian military

leaders would be hard pressed to know, in the heat of a crisis, whether the missile was part of a “limited” strike or the first wave of an all-out nuclear attack.

Nevertheless, Trump officials insist that the president needs “more credible” nuclear use options to deter the possible first use of nuclear weapons by Russia. In reality, once nuclear weapons of any kind are detonated in a conflict between nuclear-armed adversaries, there is no guarantee against a cycle of escalation leading to all-out global nuclear war. Lowering the threshold for nuclear use by making nuclear weapons “more usable” takes the United States and Russia and the world in the wrong direction.

The administration plans do not stop there. Its fiscal year 2021 budget proposal calls for other new kinds of destabilizing nuclear weapons systems, including a new nuclear warhead for SLBMs, dubbed the W93, and a new nuclear-armed sea-launched cruise missile for deployment on surface ships and submarines. If developed, the W93 would be the first new warhead design added to the U.S. arsenal in more than three decades.

The Defense Department is also seeking \$28.9 billion next year, a 30 percent increase, for programs to sustain and recapitalize the existing nuclear arsenal.

The Pentagon’s nuclear modernization spending binge includes \$4.4 billion to begin construction of a fleet of 12 Columbia-class ballistic missile submarines; \$2.8 billion for the new B-21 stealth bomber program; \$1.5 billion to start work on a new ground-based intercontinental ballistic missile system; and \$500 million to continue development work on a new nuclear-armed, air-launched cruise missile.

The administration is also demanding a 25 percent boost for the National Nuclear Security Administration’s weapons budget, to \$15.6 billion, to cover the growing cost of nuclear warhead refurbishment, design, and production work. This includes expanding the capacity to build plutonium warhead cores to at least 80 per year—an unrealistic and unnecessary goal.

The administration’s grandiose proposals not only would contribute to a dangerous global qualitative nuclear arms race, but they are excessive and unaffordable. Over the next 30 years, these and other nuclear weapons programs are estimated to cost taxpayers at least \$1.5 trillion.

Worse yet, the Trump administration’s program of record would sustain deployed strategic warhead numbers at levels 30 percent higher than the Pentagon itself determined in 2013 is necessary to deter nuclear attack. Taken together, Trump’s policies to “greatly strengthen and expand” the U.S. nuclear capability and his failure to engage in good faith negotiations to end the arms race and pursue disarmament are a violation of U.S. obligations under Article VI of the nuclear Nonproliferation Treaty.

It does not have to be this way. First, the Trump administration needs to heed calls from military officials, U.S. allies, and bipartisan national security leaders to take up Russia’s offer to extend the 2010 New Strategic Arms Reduction Treaty by five years before it is due to expire early next year. Without the treaty, the doors to an open-ended global nuclear arms competition will swing open. History shows that there are no winners in a nuclear arms race.

Second, the Congress, and perhaps a new president in 2021, must rein in the exploding cost and scope of the U.S. nuclear modernization program, particularly the efforts to develop “more usable” nuclear weapons. Hundreds of billions of dollars can be saved by delaying, trimming, or eliminating major elements of the current plan while maintaining a devastating nuclear deterrent. This would allow for those monies to be redirected to other, more urgent national security projects and domestic programs that address real human needs.

<https://www.armscontrol.org/act/2020-03/focus/one-wins-arms-race-nuclear-war>

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38 North (Washington, D.C.)

## **It's Time for the European Union to Talk to North Korea**

By 38 North

March 2, 2020

Commentary by Ramon Pacheco Pardo, Eric Ballbach, Sabine Burghart, Nicola Casarini, Mario Esteban, Lucia Husenicova, Sangsoo Lee, Françoise Nicolas, John Nilsson-Wright, Oskar Pietrewicz and Elina Sinkkonen

Brussels has an ostensible policy of “critical engagement” towards North Korea. This approach combines sanctions, humanitarian aid and dialogue. But since 2016 there have been many sanctions and no substantial engagement. This approach has failed to achieve any of its stated objectives. The European Union’s (EU) new leadership should reconsider this policy as soon as possible.

### Learning from Failure

The main reason why Brussels needs to engage with Pyongyang is obvious: The current approach has not brought about the expected results. Among its main goals are the denuclearization of North Korea, nonproliferation of weapons of mass destruction and the improvement of North Korea’s human rights situation. All of these goals are as elusive today as they were in 2016. Indeed, as reports published in 38 North and by The New York Times show, the prioritization of international sanctions above all other considerations have had unintended consequences for humanitarian activities in North Korea. There are also concerns that progress made on access, monitoring and institutional cooperation could be reversed.

Nor have sanctions further isolated the North Korean government. Presidents Donald Trump, Xi Jinping, Moon Jae-in and Vladimir Putin have met with Kim Jong Un. Kim has also traveled to Singapore and Vietnam. Japanese Prime Minister Abe Shinzo has repeatedly expressed his interest in meeting with Kim. Even though a solution to the North Korean nuclear problem is not yet in sight, there is evidence that more countries may eventually pursue greater diplomatic engagement with the North. The EU’s continued reluctance to actively pursue high-level talks with North Korea, even if not with Kim directly, will not further isolate Pyongyang. On the contrary, it makes the EU an outlier compared to the powers that matter in Northeast Asia. Simply put, the engagement train is leaving the station and if the EU does not hop on board, it will be left behind.

### The Benefits of a Course Correction

The EU should, therefore, restore its high-level political dialogue with North Korea. EU institutions and reluctant member states should make it easier for North Koreans who are not involved with Pyongyang’s nuclear program to come to Europe for educational, sports or cultural exchanges. Current humanitarian aid programs are underfunded. Aid to vulnerable North Koreans should be increased, especially since reports by international organizations and NGOs working inside the country show that this assistance reaches its intended recipients. In addition, South Korea is a key strategic partner of the EU and the Moon government is a strong proponent of engagement as the best hope to achieve inter-Korean reconciliation. Seoul also believes that engagement will open up the economy of Pyongyang, which it thinks would help nudge the North towards denuclearization. Morally and strategically, the EU should support the policy of its important partner in Korean peninsula affairs.

Crucially, engaging North Korea does not mean giving up on pressure. Sanctions can continue in place until the international community decides to start removing them. Indeed, none of our proposals would violate existing United Nations or EU sanctions. But sanctions should go hand-in-hand with diplomacy. This is the actual policy of the US and South Korea. Restoring engagement in the EU's North Korea policy would have three main advantages:

First, EU officials would be able to build trust with their North Korean counterparts and raise issues of concern directly with Pyongyang. Brussels, for example, cannot rely on the Trump administration to prioritize North Korea's weapons of mass destruction proliferation to the Middle East, which is a priority for the EU, nor raise the point with Pyongyang that its long-range ballistic missiles can also reach the whole of Europe.

Second, engagement with Pyongyang would support the EU's Asia security strategy launched in 2018. If Brussels wants to be taken seriously as an actor in the region, it cannot afford to be a bystander in one of the key security issues in East Asia, especially considering its successful diplomatic engagement on Iran's nuclear program. The EU has been unsuccessful so far in carving out a role for itself in diplomacy with North Korea. Brussels will not be invited to Asia's security table—it will have to push its way in.

Third, the EU has staked a claim to the general role of facilitator between sparring parties. But, it cannot credibly make this claim on the Korean peninsula if it does not talk to the party creating much of the trouble. And if the current diplomatic process with North Korea does not work out, an EU-DPRK political dialogue could serve as a back channel for Washington and Pyongyang.

The EU needs to be realistic and avoid outsourcing discussion of these issues to third parties. It has to raise them directly with the North Korean government. If the current diplomatic process between the US and North Korea succeeds, the EU will be able to have more detailed discussions and resume broader engagement more easily. And if the process fails, Brussels can help to prevent tensions from escalating and potentially undermining its own priorities.

## Conclusion

The EU and some member states need to understand that talks are not a gift to be bestowed upon Pyongyang. The international community, including the US and South Korea, understand that we have to deal with North Korea as it is. Otherwise, we should drop any hope that Kim might decide to give up his nuclear weapons—however unlikely we think this may be. To their credit, member states such as Sweden, Finland and Austria understand the importance of an EU role in facilitating dialogue with North Korea; others, such as Poland and the Czech Republic, also see the benefits of regular contact and have decades-old political relations with the DPRK. Increasing numbers of representatives and officials in the European Parliament, European Commission, European External Action Service and member states support this approach. Now is the time for the EU as a whole to realize that engagement is actually beneficial for the Union and its best bet to deal with North Korea.

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

## Europe's Defense Debate Is All about America

By Barbara Kunz

March 4, 2020

Last year, when French president Emmanuel Macron declared in an interview with the Economist that NATO was “brain dead,” he caused a stir throughout Europe. Official European reactions came quickly, and they were negative across the continent. NATO’s Secretary General Jens Stoltenberg said, “any attempt to distance Europe from North America will not only weaken the trans-Atlantic alliance, it is also risking dividing Europe itself. European unity cannot replace trans-Atlantic unity.” German Chancellor Angela Merkel declared that she could not support Macron, and Polish Prime Minister Mateusz Morawiecki went as far as to qualify Macron’s statements as “dangerous.” Rather than hearing the French wake-up call, the rest of Europe rallied around the NATO flag. Instead of advancing the European debate and generating support for greater European defense efforts as Macron probably hoped to do, his statements apparently had the opposite effect. Allies eventually decided to bury the controversy in a reflection-group process, following a German proposal. Macron recently repeated his call for a stronger Europe at the Munich Security Conference, causing less irritated reactions — yet this event should not be seen as representative of the European debate. A large number of Europeans remain skeptical of Macron’s vision of a less dependent Europe.

In times of increasing European doubts about the transatlantic link and in light of the massive problems European defense is facing, this can seem surprising. Three years into the administration of President Donald Trump, and with a good chance that Trump might be reelected in 2020, most Europeans understand very well that the transatlantic relationship is in a bad state. “Westlessness,” a sense of loss of purpose for the West, was the main theme of this year’s Munich Security Conference. Europeans are also increasingly aware that the rise of China will have a long-term impact on Euro-Atlantic security relations. For example, Ursula von der Leyen, the European Commission’s new president, announced that she wants her commission to be “geopolitical” in light of a world characterized by great-power competition. Yet openly saying that Europeans must stop relying almost exclusively on the United States for their defense remains something of a taboo. Breaking it triggers the reactions Macron experienced. Another reason for the pushback against

Macron's comments is that in many Europeans' eyes, France, its military strength notwithstanding, is probably the least credible leader on the issue of European defense unity given its own Gaullist legacy.

The key point to understand about the European defense debate is therefore that it is all about the United States — at least indirectly. For the vast majority of Europeans, their attitude toward the United States — and thus NATO — determines their attitude toward European defense cooperation, not the other way around. Likewise, in times of growing transatlantic uncertainties, expectations about what the United States will do are what determines Europeans' willingness to even think about a possible plan B.

### The Link Between Attitudes on the United States and European Cooperation

That European attitudes toward the United States determine attitudes toward European defense cooperation is linked to threat perception. Threat perception varies widely across Europe, in both the nature and the intensity of threats perceived. In a nutshell, the debate is about threats from the south (failed states, terrorism) and threats from the east (Russia). Historical legacies obviously matter in countries' threat perceptions, as does geography. A country's defense priorities then inform its perceived and actual dependence on the United States. For the Atlanticists among the Europeans, this is thus not simply about blind followership no matter what Washington does or says. It is ultimately about ensuring the nation's survival. Hence the United States as the independent variable — and the fear to engage in any kind of activity that might alienate Washington.

That attitudes vis-à-vis the United States are the determining factor thus applies to the United Kingdom and Germany as well as other traditional Atlanticists such as the Netherlands. The rule of thumb holds even more true for the so-called Eastern flank countries, that is the Baltic states, the Nordic states, Poland, or Romania. The equation is simple: Without the Americans, they are helpless in facing their main threat, Russia. The greater the fear of Moscow, the stronger the respective capital clings to the United States. What Atlanticist countries are interested in today is effective deterrence against Russia. In their certainly accurate view, nobody else can provide credible deterrence but the Americans. Therefore, the transatlantic security link remains the only game in town: this means NATO, as well as all the bilateral U.S. engagement in European security, including with non-NATO countries Finland and Sweden. Any European type of defense cooperation, such as the European Union's Common Security and Defense Policy, is consequently relegated to second place: a nice-to-have, which must not negatively affect NATO. Real defense is about Russia, together with the United States, as there is simply no viable alternative to Washington.

### French Exceptionalism

The major exception to that rule is France. France's attitude vis-à-vis the United States traditionally derives from Paris' own priorities. With its own (exclusively national) nuclear deterrent and a self-image as a capable military actor with global reach, France just does not consider its own survival to be linked to U.S. engagement in European security. In terms of defense, the French key priority is fighting terrorism in the "global south," in particular in Africa. In these endeavors, France cooperates very closely with the United States and has tried hard to convince the United States to not abandon it in West Africa. (With some success: In late January, U.S. Defense Secretary Marc Esper announced that the United States would not completely withdraw forces from the region.) Yet, close transatlantic security ties are simply not as vital for France as they are for other European countries. Replacing the United States as a partner in the Sahel is obviously hard to do, but not impossible — in particular if Europeans join forces. The "traditional" Russian threat to European security is, in turn, not very high on France's agenda, nor is conventional deterrence against Moscow — and that is the Eastern flank's key preoccupation. Thus France's engagement in NATO's



Enhanced Forward Presence in the Baltics is in reality better understood as Paris securing, for instance, Estonia's support for expeditionary operations in the Sahel. For France, that is what real defense is about.

Replacing the United States is not on France's agenda. Yet, Paris apparently fails to understand the fears that lead many Europeans to bet so heavily on the United States. As seen from Paris, and given French defense priorities, the United States is less difficult to replace than as seen from Warsaw. Moreover, France simply does not seem to understand that anything emanating from Paris is seen against the backdrop of several decades of Gaullist legacies, of which Macron's Economist interview is the latest example. That many perceive Macron as pursuing a Gaullist agenda certainly does not help Paris' cause — precisely because it is viewed as France's cause rather than Europe's.

#### What's the Right Dose of U.S. Engagement?

That Europe's defense debate is all about America is nothing new. How much America is the right amount? This argument goes back to the creation of NATO. Among the stranger aspects of this debate is that many Europeans approached it as if the degree of U.S. engagement were decided in Paris or London rather than in Washington. It was in any case fears of weakening NATO that made Britain oppose defense becoming an area of European integration, an attitude that only evolved to some degree during the late 1990s. An early illustration of America's centrality is also the preamble the Germans added to the 1963 Franco-German Elysée Treaty. This preamble, which stressed Germany's interest in a larger European community including the United Kingdom and close ties with the United States, infuriated de Gaulle, and to this day, France and Germany are not on the same page when it comes to their Atlantic preferences.

After the Cold War, the debate continued to pit the proponents of a "Europe of Defense" (that is: France) against the Atlanticists — with the latter camp growing with each round of E.U. and NATO enlargement. Europeans continued to debate how much of America they wanted in their defense. One explanation for France's "return" to NATO in 2009 is thus Paris' realization that such a "Europe of Defense" is unlikely to see the light of day, as former French foreign minister Hubert Védrine writes in his 2012 official assessment. In sum, in all these debates, France traditionally stood, and continues to stand, on the other side of the European mainstream. At least in its modern version, this has yet little to do with anti-Americanism, but rather with the divergent priorities outlined above.

#### Does Europe Need a Plan B?

The European debates of the 1990s, such as on the European Security and Defense Identity or the traditional French take on "l'Europe de la defense", were mainly academic in nature. After the demise of the Soviet Union, or so many Europeans thought, defense had become a sort of "nice to have." Many European countries preferred to take advantage of the peace dividend, notably those in Western Europe. This changed with Russia's 2014 annexation of Crimea. NATO found a new raison d'être and is again considered the security linchpin in the vast majority of European capitals. But the election of Donald Trump as U.S. president led to questions of whether the United States would still be the partner the Europeans needed. After all, Trump had inter alia claimed the Atlantic alliance was "obsolete," and NATO summits are nowadays considered diplomatic nightmares in numerous European capitals. Europeans seem to finally understood that the degree of U.S. implication will be decided in Washington, rather than in Paris or Warsaw. Thinking about a plan B consequently would appear a sensible thing to do.

The result is essentially the debate on European strategic autonomy. In this current version of the European defense debate, fault lines once again run exactly along the lines described above. Threat perception determines the degree of dependence on the United States, which in turn determines

attitudes toward European defense efforts. France is thus the self-proclaimed leader on European strategic autonomy. The “Atlanticists” on the Eastern flank, in turn, are most skeptical of any attempt at building a European defense. Then-Polish Prime Minister Beata Szydło for instance declared that “the so-called strategic autonomy of the EU [must] not lead to weakening of [the] European contribution to [the] deterrence and defence potential of NATO.” Some even went as far as to argue — long before the French president’s *Economist* interview — that “Macron’s visions are suicidal for Poland.” More nuanced academic assessments also come to the conclusion that the United States is simply irreplaceable in European security, identifying a “strategic autonomy dilemma” based on the need to preserve Washington’s engagement.

In short: yet again, this is all about America. Really strengthening European defense efforts indeed is plan B to many, and only of interest if plan A — NATO backed by the United States — is not available. Whether plan A is really off the table is hotly debated. The lack of a European consensus on the need for a plan B stems from divergent analyses of the transatlantic link’s future trajectory. In the French discourse and debate, the “progressive and unavoidable disengagement of the United States” from Europe is considered a given. Mounting frustration about not getting the message across may thus partly explain Macron’s harsh words on NATO. In Germany, despite Merkel’s statement that Europe needs to take its fate in its own hands, hopes still seem high that transatlantic relations will go back to “normal” after Trump. In many Eastern flank countries, the standard argument is that Trump actually increased funding for the European Deterrence Initiative and that there consequently is no need to worry. Other items regularly mentioned by Poles or Swedes (as well as Americans meaning to reassure the Europeans) as proof of the United States’ commitment to European security are various polls and references to support for NATO in the U.S. Congress. Psychology certainly plays into it: On all sides, the analysis seems to magically yield the preferred result.

#### Answering the Key Question

In light of these divergent assessments, it is no wonder there is no consensus on the conclusions to draw for European defense and the need for a plan B. The main reason why Macron’s wake-up call is unlikely to work is indeed that the key question remains unanswered: What will be the United States’ future engagement in European security? With America being the independent variable for a majority of European capitals — and European defense cooperation the dependent one — Paris ultimately lacks influence on their positions. A European debate based on what France wants (and its subsequent rejection by the Atlanticist camp) will lead nowhere. All Paris can do is find partners for projects even Atlanticist capitals consider nice-to-haves (and that do no harm to NATO), such as the French European Intervention Initiative. At the end of the day, this is the reality of European defense cooperation as of 2020. Macron’s offer to start a strategic dialogue on the role of nuclear deterrence in European security — made during his long-expected speech on nuclear deterrence on February 7 — is unlikely to fundamentally change any of this. Europe’s key defense problems cannot be solved by nuclear means. Europe’s main defense challenge is conventional, boiling down to the question “What if the tripwire in the Baltics fails?”

Ultimately, only the answer to the question of future U.S. engagement in European security can provide the necessary impetus for European defense cooperation to really become an alternative to NATO — and provide most Europeans with a reason to strive for that objective. Absent a unified European analysis, nobody but Washington can provide that answer — either together with the Europeans or through unilateral acts and *faits accomplis*.

In an ideal world, Europeans would therefore engage in a constructive dialogue with Washington on the United States’ future engagement in European security. As Ronja Kempin and I have argued earlier in these pages, it is in America’s interest to have a Europe with strategic autonomy. A

stronger European defense would lead to better burden-sharing, thereby strengthening the transatlantic link rather than weakening it, as its detractors would have it. This would in essence mean leaving the zero-sum logic that more Europe means less NATO behind. Unfortunately, this again seems to be the predominant view in Washington, most recently expressed in an official letter sent to the European Union.

Yet if the United States wants capable European partners in a 21st century that will be characterized by multipolarity and great-power competition, it must change its mind on Europe's strategic autonomy. Attaining that autonomy is of course a matter for the Europeans, which requires European leadership. Germany has a key role to play in that respect. Yet the fear of alienating Washington many Europeans hold constitutes the major roadblock in attaining that objective, or even starting to think about operationalizing it. Answering the question that is, implicitly or explicitly, underlying the entire European defense debate is perhaps the greatest service the United States can do their European allies in the multipolar — and potentially post-Atlantic — era.

Dr. Barbara Kunz is a senior researcher at the Institute for Peace Research and Security Policy at the University of Hamburg. She specializes in European and transatlantic security, with a special focus on Franco-German cooperation and the Nordics.

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## ABOUT THE USAF CSDS

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

In 2008, the Secretary of Defense's Task Force on Nuclear Weapons Management recommended "Air Force personnel connected to the nuclear mission be required to take a professional military education (PME) course on national, defense, and Air Force concepts for deterrence and defense." This led to the addition of three teaching positions to the CPC in 2011 to enhance nuclear PME efforts. At the same time, the Air Force Nuclear Weapons Center, in coordination with the AF/A10 and Air Force Global Strike Command, established a series of courses at Kirtland AFB to provide professional continuing education (PCE) through the careers of those Air Force personnel working in or supporting the nuclear enterprise. This mission was transferred to the CPC in 2012, broadening its mandate to providing education and research on not just countering WMD but also nuclear operations issues. In April 2016, the nuclear PCE courses were transferred from the Air War College to the U.S. Air Force Institute for Technology.

In February 2014, the Center's name was changed to the Center for Unconventional Weapons Studies (CUWS) to reflect its broad coverage of unconventional weapons issues, both offensive and defensive, across the six joint operating concepts (deterrence operations, cooperative security, major combat operations, irregular warfare, stability operations, and homeland security). The term "unconventional weapons," currently defined as nuclear, biological, and chemical weapons, also includes the improvised use of chemical, biological, and radiological hazards. In May 2018, the name changed again to the Center for Strategic Deterrence Studies (CSDS) in recognition of senior Air Force interest in focusing on this vital national security topic.

The Center's military insignia displays the symbols of nuclear, biological, and chemical hazards. The arrows above the hazards represent the four aspects of counterproliferation — counterforce, active defense, passive defense, and consequence management. The Latin inscription "Armis Bella Venenis Geri" stands for "weapons of war involving poisons."

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