Feature Report

“CRITICAL INFRASTRUCTURE PROTECTION: DHS Should Take Actions to Measure Reduction in Chemical Facility Vulnerability and Share Information with First Responders”. Published by U.S. Government Accountability Office (GAO); Aug 8, 2018


Facilities that handle hazardous chemicals could be targets for terrorists—e.g., these chemicals could be stolen and used to build explosive devices. The Department of Homeland Security inspects such facilities to ensure they comply with security standards. DHS also shares information about these facilities with local officials so that first responders are prepared for potential security incidents.

However, we found that first responders may not have all the information they need to safely respond to incidents at these facilities. We recommended, among other things, that DHS provide first responders with better access to this information.
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NUCLEAR WEAPONS

Breaking Defense (Washington, D.C.)

**Lockheed ‘Seizes High Ground’ with Second Hypersonics Deal**

By Colin Clark

Aug. 14, 2018

“All of the fundamental research in hypersonic aerodynamics is United States (work),” said Pentagon R&D chief Mike Griffin. "We did not choose to weaponize the results of that research. Our adversaries have chosen to weaponize it. That’s the challenge. We will respond."

WASHINGTON: It’s not over until it’s over,, but Lockheed Martin is certainly showing early promise in the eye-wateringly difficult technical field of building a useful hypersonic weapon.

The Air Force announced last night that it was awarding the world’s biggest defense company a $480 million contract to develop a prototype for the Air-Launched Rapid Response Weapon (ARRW).

Lockheed “has been putting a lot of work into this and a great deal of emphasis in terms of company strategy,” said Richard Aboulafia, the dean of aviation analysis over at Teal Group. “But as our British pals say, it’s early days in this industry. The technology is far from mature. A lot can happen before deployable systems see more than limited production runs. But right now, yes, they are seizing the high ground in hypersonics.”

Hypersonics is the top priority for Michael Griffin, head of Pentagon research and development. Why? Because, while the US led the way in basic research, Russia and China have stolen a march on us in actually testing hypersonic weapons — ones specifically designed to fly too low for American anti-ballistic missile defenses but too fast for anti-cruise missile defenses.

“All of the fundamental research in hypersonic aerodynamics is United States (work),” Griffin told reporters last week at the Space & Missile Defense Symposium in Huntsville, Ala. "We did not choose to weaponize the results of that research. Our adversaries have chosen to weaponize it. That’s the challenge. We will respond."

The Air Force is at the forefront of that response.

“We are going to go fast and leverage the best technology available to get hypersonic capability to the warfighter as soon as possible,” Air Force Secretary Heather Wilson said in a statement.

As the Air Force’s deputy assistant secretary for science, technology and engineering, Jeffrey Stanley, told the House Armed Services subcommittee on emerging threats and capabilities in March: "Although we have a long history in hypersonic research, the United States no longer enjoys preeminence and the Air Force recognizes the urgent need to increase investment in this technology. The Air Force continues to conduct research and development in partnership with the Defense Advanced Research Project Agency (DARPA) and National Aeronautics and Space Administration (NASA) on two S&T flight demonstration programs.”

This latest contract is one of two Air Force hypersonic weapon prototyping efforts awarded, this one to try and get something useful into the air in three years. But it is, importantly, part of a much broader effort at the Pentagon. The Office of Secretary of Defense, Missile Defense Agency, Air Force, Navy and Army signed a June 28 memorandum agreeing to work together on hypersonic boost glide technology development.
The Air Force’s other hypersonic weapon rapid prototyping effort is called the Hypersonic Conventional Strike Weapon (HCSW). The ARRW and HCSW efforts are developing unique capabilities for the warfighter and each has different technical approaches. Yesterday’s contract is designed to push “the art-of-the-possible by leveraging the technical base established by the Air Force/DARPA partnership.” The earlier contract to Lockheed, HCSW, uses mature technologies that have never been used together before to build an air-launched delivery system.

Yesterday’s announcement is for an undefinitized contract action. It basically is a placeholder to let Lockheed start work while the government hammers out a final settlement on contract terms and conditions — including a final negotiated price. They’ve got nine months to nail it down.

Interestingly, this advanced system is not being handled by the Air Force’s Rapid Capabilities Office but by its Armament Directorate. The RCO manages the X-37B spaceplane and the B-21 bomber, both reliant on advanced technologies. The Armaments Directorate usually handles more conventional weapons’ efforts.

Sydney Freedberg also contributed to this article.


Lab Directors Worried about Info-wars, Education

By Mark Oswald
Aug. 10, 2018

SANTA FE, N.M. — Get six people who have run Los Alamos National Laboratory together for a chat and ask them about today’s national security threats, and they don’t talk much about the lab’s central subject – nuclear weapons.

Collectively, the current lab director and five men who have been in charge of the nation’s pre-eminent weapons lab in the past say they’re most afraid of economic, cyber or information warfare, or problems in education.

At a recent lab event, John Browne, LANL director from 1997 to 2003, said he “really stays up nights” concerned about information warfare “against our military assets, whether we lose stealth (capability) someday, or someone can find our submarines and whether they can just take out our satellites.”

“But more than that,” Browne continued, “the information warfare against our way of life. Just think of how many times you look at social media today and someone thinks something is true because someone has put something out there. I think that threatens our way of life.”

Current LANL director Terry Wallace cited “an educational crisis” when asked about fears for the future. He said “mass illiteracy in the country is extraordinary.”

“Participation in democracy and the values that we have require that you’re well grounded in education,” he said.

“So when you look at a website that tells us that there’s a conspiracy in a pizza parlor, that everyone goes there for pedophile activities, you should be able to apply scientific principles to that to understand that it’s not (true).” He said American university systems are in crisis.
“So am I fearful? Yes, because nobody's got a plan for that.”


The six directors gathered at the lab last week to wrap up LANL’s 75th anniversary events with a panel discussion dubbed “75 Years of Solving National Security.” Along with Wallace and Browne, Donald Kerr (director from 1979-85), Robert Kuckuck (2005-06) Michael Anastasio (2006-11) and Charles McMillan (2011-17) participated.

Several hundred lab employees attended at the lab’s Pete V. Domenici Auditorium, behind LANL’s security fence. The discussion was moderated by Ellen Tauscher, a former California congresswoman and under-secretary of state for arms control and international security affairs.

The serious talk of past accomplishments and anecdotes featured just a bit of what might be called insider national weapons lab humor. Wallace, introducing Kerr, noted the historic world and national events that took place during Kerr’s lab directorship more than 30 years ago, including the death of Soviet leader Yuri Andropov, who died after only 15 months atop the Communist bloc in 1984.

Looking at Kerr, Wallace said, “Don’t think you had anything to do with that, but it’s possible.” He added, “Sorry, remember we don’t talk about all the things we do at Los Alamos.”

And there were repeated references to Lawrence Livermore National Laboratory in California, LANL’s longtime rival, as “the junior varsity.”

There may have not been another audience expected to understand when Wallace twice used the verb “grok” in a sentence. For anyone who’s not a science fiction nerd, the word was invented by Robert A. Heinlein for his 1961 novel “Stranger in a Strange Land” and means, more or less, to understand.

Fears for the future

But no one was kidding around when Tauscher asked the directors what they see as the biggest national security challenge going forward. As a follow-up, an audience member wanted to know: “Do you fear for the future?”

Kuckuck did express worries about a weapons issue. He wondered aloud about whether the lab's main job these days – “stockpile stewardship,” or making sure nuclear weapons work by using science instead of the test explosions that were permitted in the past – can provide adequate confidence in whether the bombs will work if ever called upon.

“It might get more confident, but is it really, truly... ?” he asked.

“I think that can only get worse as time goes on,” Kuckuck said. “I don’t see how you can possibly know better as we go. That’s just my own feeling.”

Browne had spoken earlier about misgivings that arose when President George H.W. Bush announced a moratorium on testing in 1992. Later in the ’90s, Browne was asked at a congressional hearing if science-based stockpile stewardship would work. “We said we were highly confident, but we could not guarantee,” he said. “That caused a lot of angst.”

But he said he believes that the nation’s weapons labs have demonstrated that they have been able to develop the “tools” needed for stockpile stewardship since then.
Kerr also weighed in on this issue. He said he had gained notoriety back in the day for opposing a ban on nuclear testing. He said he was "saved" when the Soviet Union invaded Afghanistan in 1979 "and the whole issue was set aside."

Kerr said that he doesn’t think anyone believes the mathematical probability of a successful bomb detonation is 1, or absolute, under stockpile stewardship. “But we got awfully close to that,” Kerr said. McMillans said he has seen stockpile stewardship come to maturity. “I think it's worked better than many of us even hoped it would back then,” he said.

Wallace talked about the old bomb tests in Nevada with something like nostalgia. “I was on site alone, putting out instruments, running over desert tortoise, pulling up desert onion, all the things that today are illegal,” he said. “And I actually got to feel the tremendous rumble through the desert of very large explosions.”

Technology and economics

Wallace said he’s worried about “technological leaps” in areas such as artificial intelligence as security threats, but is also wary of changes in how economies and nations are organized. “We have a definition of national security as protecting our borders and our economy,” he said. “I'm not sure we have a national economy anymore. It’s a global economy.”

He said the five largest tech companies in the U.S. “are the fourth-largest economy in the world.” “Are they our enemy or our friend?” he asked. “They pay taxes in every country ... That’s how you define your allegiance or not.”

“Look at 2030, we’re going to have a series of challenges between AI, health and who actually runs the world that we cannot grok at this point,” Wallace said. “The concept of values we, our nation, are founded on may be what we call national security, but no longer related just (to) our borders and boundaries. We’re not prepared for it.”

Kerr said he worries a great deal about what’s coming. “I don’t understand about the forces at work in our society today and how they’re going to evolve,” he said.

“I don’t understand the role of private capital financing in what are in fact very well-funded political movements,” he said, “the use of new technology, whether it’s big data analysis, communications capabilities that didn’t exist before and behavioral analysis that has matured to the point where advertisers can predict fairly competently what you may do when you’re exposed to some of their pleadings. “So I worry a lot about that and that we as citizens are not suitably engaged thinking about it.”

Anastasio said, “The country needs to marshal all its forces to defend its way of life, to defend what we believe in, and to find that we come together on what that is, which we seem to be bifurcated about these days.”

‘Invisible’ work

Wallace became emotional about his work in the lab's global security area, which he said is “invisible,” even to many who work at LANL.

He said he’d worked on projects “that basically did something that nobody else can do and doing something that nobody else will know, but it changed the world.” “And I can measure the change in the world and I can feel extreme pride in that, but know that nobody else will never know.”
MOX Protection Not Included in Defense Authorization Measure Signed by Trump

By James Folker

Aug. 14, 2018

The National Defense Authorization Act signed Monday by President Donald Trump does not include a measure that the Senate, in particular Sen. Lindsey Graham, had included in its version of the bill to protect the Mixed Oxide Fuel Fabrication Facility at Savannah River Site.

The Senate provision would have prohibited the Department of Energy “from obligating or expending any funds for fiscal year 2019 or prior fiscal years to terminate construction and project support activities at (MOX) or to convert such facility to be used for any purpose other than its original mission.”

A House-Senate conference committee cut that language but kept a House provision that would allow the energy secretary to waive “construction and project support activities” if he justifies his actions to both congressional defense committees. The House version included $335 million “to sustain the current pace of construction on the MOX facility in fiscal year 2019,” but that would be moot if the secretary exercises the waiver.

The Senate version contained $220 million to continue terminating MOX, but no money to continue construction. The provision to block any expenditures to close MOX was added as an amendment before dying in conference.

“Sen. Graham lost in his bid to stop language allowing project termination,” said Tom Clements, who heads the watchdog group Savannah River Site Watch. “The table is set for termination.”

Attempts to reach Graham were unsuccessful Tuesday.

The defense bill authorizes expenditures but doesn’t appropriate money. An appropriations bill is expected in September.

The Department of Energy has been trying to phase out MOX under presidents Barack Obama and Trump.

“As in FY 2018, the Administration proposes termination activities for the Mixed Oxide (MOX) Fuel Fabrication Facility project and continuing to pursue the dilute and dispose option to fulfill the United States’ commitment to dispose of 34 metric tons of plutonium,” Lisa E. Gordon-Hagerty, the head of the National Nuclear Security Administration, wrote to a Senate appropriations subcommittee in April. “The $220 million for the MOX Facility will be used to continue terminating the project and to achieve an orderly and safe closure. The scope and costs will be refined in subsequent budget requests when the termination plan for the MOX project is approved.”

The NDAA also includes a House provision calling for a report on the plan for producing plutonium pits at New Mexico’s Los Alamos National Laboratory, “in case the MOX facility is not operational and producing pits by 2030.”

There have been proposals to convert MOX to a new mission of making the pits for nuclear weapons, which has proved difficult for Los Alamos.
Graham is on record as saying South Carolina wants both missions, using MOX to convert plutonium to commercial reactor fuel and taking on the pit mission as well.

The provision would also require the energy secretary to submit an updated "Statement of Mission Need" by September 2020, and mandates that the chairman of the Nuclear Weapons Council submit annual written certification that the plutonium pit production plan “is on track to meet the military requirement of 80 pits per year by 2030.”


Wyoming Tribune Eagle (Cheyenne, Wyoming)

**Secretary of the Air Force Visits F.E. Warren Air Force Base**

By Kristine Galloway

Aug. 9, 2018

CHEYENNE – Nuclear deterrence will continue to be a large part of the United States’ military defense.

That’s part of the message U.S. Secretary of the Air Force Heather Wilson brought with her when she visited F.E. Warren Air Force Base this week.

Wilson sat down with members of the local media Wednesday morning to answer some questions about the role of the Air Force in the nation’s security and the role of F.E. Warren within the Air Force.

Lt. Nikita Thorpe, a public affairs officer, said in an email that Wilson visited F.E. Warren “to emphasize the importance of the 90th Missile Wing’s role in deterrence and to thank the airmen for ensuring the mission is accomplished every day.”

During a media engagement session Wednesday afternoon, Wilson did stress F.E. Warren Air Force Base’s integral role in the nation’s defense through deterrence.

“If we’re ready to do our missions any day, it’s much less likely that the military will be called upon to carry out those missions, because deterrence works, and no one knows that better than F.E. Warren Air Force Base,” Wilson said.

“This is America’s nuclear deterrent, and it's very important to the country. We want to make sure that we're ready to do our mission any day, anytime, anywhere.”

She added that the same readiness applies to all missions within the Air Force.

“Our focus right now is to restore the readiness of the force and to cost-effectively modernize it,” Wilson said.

She explained that the Air Force lost about 30,000 airmen following the government sequestration and the budgetary uncertainties that went along with it. The Air Force is adding about 4,000 airmen back to the force this year, she said.

Wilson said Secretary of Defense James Mattis deserves a lot of credit for helping Congress and the Trump administration reach a budget agreement that she said will benefit the military.
“We have a two-year budget deal with a significant increase in resources, and the intent is to try to get back to restored readiness and to get after some of the modernization issues that have just been left behind,” Wilson said.

One of those modernizations she referred to includes a replacement currently in development for the LGM-30 Minuteman III intercontinental ballistic missiles, as part of a revamping of the ground-based strategic deterrent plans. Wilson said when that replacement is prepared, F.E. Warren will receive those new missiles.

“(The) national defense strategy reaffirms the importance of nuclear deterrent. And the nuclear posture review reaffirmed that America should have a triad. We should have a sea-based leg, an air-based leg and a ground-based strategic deterrent,” Wilson said.

“Nuclear weapons have helped keep the peace for over 60 years, and they continue to do so today.”


US COUNTER-WMD

Homeland Preparedness News (Washington, D.C.)

Army Research Director Addresses CBRN Defense

By Melina Druga

Aug. 13, 2018

Eric Moore, director of the U.S. Army Research, Development and Engineering Command Chemical & Biological Center (RDECOM C&B) recently spoke at an industry conference about technology and innovation in development to bolster chemical and biological defense.

The CBRN (chemical, biological, radiological and nuclear) Defense Conference and Exhibition was recently hosted by the National Defense Industrial Association in Wilmington, Del.

Moore discussed how the center’s research is aligned with the U.S. Army’s modernization strategy. He also spoke on the innovative uses of robotics and semi-autonomous systems.

“The future is bright,” Moore said. “We’re developing paper tickets embedded with cellular machinery that change color in response to a range of threats today, but we’re looking to the future. By 2038, we’ll incorporate life-mimicking properties, such as sense-and-respond and self-healing, into deployed systems.”

Other developments the center is working on include synthetic biology that mimics the natural abilities of living systems, non-aqueous decontamination technologies that return to the fight faster after exposure, and early warning systems that provide actionable information to warfighters, allowing commanders to make real-time decisions.

The center formed a government-industry partnership with Maryland’s newly opened Defense Technology Commercialization (DefTech) Center, Moore said.

DefTech’s goal is to support the area’s technological workforce and the growth of new businesses, provide technology thrusts to Army invention, and support the commercialization of Army technology.
GAO Urges DHS to Share More Info on Chemical Facilities with First Responders

By Chris Galford

Aug. 10, 2018

Warning of the potential danger presented by attackers targeting hazardous chemical facilities, the Government Accountability Office (GAO) is urging the Department of Homeland Security (DHS) to share more information with first responders who may need to respond to security incidents.

Additionally, GAO encouraged DHS to begin measuring facilities' vulnerability to terrorist attacks, measuring the reduction in vulnerability of these facilities and using that data to assess the performance of the Chemical Facility Anti-Terrorism Standards (CFATS) program. Though that program has been in place since 2013, using a quality assurance review process to verify reported information at high-risk facilities and to conduct risk assessment, GAO found gaps in coverage that could prove problematic.

GAO noted that DHS has made substantial progress over the years in conducting and completing compliance inspections, and has begun to measure facility security. Such measures represent a critical need, given that terrorists could use facilities that produce, use, or store hazardous chemicals to inflict mass casualties, damage, and fear through stealing chemicals and using them to build explosive devices. GAO therefore reviewed DHS reports and data, interviewed officials and assessed information from 11 trade associations representing chemical facilities and 15 emergency planning communities, to get the information for its recommendations.

While the DHS currently shares some information with first responders and emergency planners, they do not get all the information potentially needed to minimize risk of injury or death when responding to critical incidents at high-risk facilities. They get some, but not nearly all, chemical inventory information, and many lack access to CFATS data in DHS's Infrastructure Protection Gateway.


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Breaking Defense (Washington, D.C.)


By Sydney J. Freedberg Jr.

Aug. 15, 2018

"There’s a real capability that can be deployed as soon as the government says it can be," Northrop Grumman's Rob Jassey told me, possibly even in "months."

HUNTSVILLE, ALA.: How confident is Northrop Grumman's Rob Jassey that the Army's much-criticized IBCS network has worked out its bugs? Not only does the retired air defense officer see "no obstacles" to fielding IBCS on schedule in 2022, he told me here after recent tests: “We've been doing a lot of work behind the scenes to set the stage” to deliver an interim IBCS years early if the Army gives the green light and the funding, as it has on other high-priority programs.

“There’s a real capability that can be deployed as soon as the government says it can be,” Jassey said, possibly even in “months.”

IBCS is an Army program, but even the Air Force is starting to like it after a test drive during the massive Red Flag air warfare exercises, Jassey told me. “We've gotten very positive feedback” from the Air Force personnel who got to see how accurately IBCS tracked airborne targets, he said. In one experiment, IBCS even successfully downloaded targeting data from the F-35 Joint Strike Fighter's advanced Distributed Aperture System sensor.

But it was the Army's latest major test — just officially announced today — that really put IBCS through its paces in its primary mission: connecting widely dispersed Army radars, anti-aircraft batteries, and missile defense launchers of multiple types that were never designed to work together. (IBCS is a cumbersome nested acronym for IAMD Battle Command System, IAMD in turn standing for Integrated Air & Missile Defense).

Over five weeks of exercises involving both live and simulated targets — fighters, cruise missiles, and ballistic missiles — IBCS used a mix of satellite relays, fiber optic landlines, and line-of-sight radio to connect 20 sites at three Army bases spread out over about 1,200 miles. At one end of the network was the White Sands Missile Range, New Mexico/Fort Bliss, Texas complex; the other end was at Redstone Arsenal here in Huntsville, Alabama. The network took targeting data from both short-range Sentinel radars and longer-ranged Patriot radars, originally designed to work only with Patriot launchers in the same battery. IBCS then fed that data to three types of Patriot missile: PAC-2, PAC-3, and PAC-3 MSE.

Overcoming the Past

How is this possible? IBCS notoriously got a scathing review from the Pentagon's independent Director of Operational Testing & Evaluation (DOT&E) after a spring 2016 test in which the system glitched and had to abort, on average, every six to eight hours. In 2017, the Army decided on a four year delay in fielding of the overall Integrated Air & Missile Defense System (IAMDS) — of which IBCS is the command-and-control backbone — with the Initial Operating Capability (IOC) slipping from 2018 to 2022. And last week, when I asked one presenter at the Space & Missile Defense Symposium here in Huntsville “how messed up is IBCS?” the room erupted in rueful, knowing laughter.

Northrop wasn't particularly happy with my phrasing. In fact, they get a little twitchy whenever someone brings up the 2016 Limited User Test, which they argue (a) is old news and (b) was unfair in the first place. (Imagine your normally polite cousin who got into a fenderbender driving
Grandma to the airport one freaking time and has gotten tired of hearing about it every Thanksgiving).

Many of the problems in both the test and the subsequent decision to delay the program were beyond Northrop's control, they say, including repeated failures by the Army-provided generator powering the system. Many others were minor but maddening glitches in the software. In fact, Northrop sources tell me that 50 percent of the problems identified in the 2016 Limited User Test were fixed within 30 days — but by then the testers had gone home to write their report.

Since 2016, however, Northrop and the Army have moved from such big-bang, all-or-nothing tests to what they call "continuous testing," a larger number of smaller-stakes events that allow a cycle of test, fix, and test again. Northrop benefits because no single glitch or outside factor has a disproportionate impact on its overall score. The Army benefits because its soldiers get to give feedback at every step — and the contractor has a powerful incentive to act on it — instead of just a few times throughout the development process.

This rapid cycle of updates and upgrades is only possible because IBCS uses what's called open architecture design. The various pieces of hardware, software, and middleware are designed as plug-and-play modules that all follow common standards, so you can remove any one piece without having to change all the others. For example, Jassey told me, "we've changed our servers four times", but each time they could just port the existing code over to the new hardware. Likewise, they can fix software glitches without having to replace any hardware.

That plug-and-play approach may seem obvious to people used to commercial information technology, although Macs and PCs, Androids and iPhones, all still require different versions of any different software. Military programs have a long history of exquisitely bespoke, jigsaw puzzle designs. Historically, Patriot radars only talk to Patriot launchers in the same unit and struggle to exchange data even with other Patriots of different types, let alone completely separate programs like THAAD or Sentinel. With IBCS, the Army's goal is to connect all its air and missile defense sensors and shooters, so different radars can work together to locate and confirm difficult targets in the face of enemy countermeasures, then pass the targeting data to whatever launcher's best able to take the shot.

Alternative Approaches

One network to rule them all may be too ambitious a goal, CSIS scholar Tom Karako told the conference here. The more people overuse integration to mean "everything," he said, the more likely we are to overreach, fail, and get nothing. "We may actually be able to get no-kidding, real integration, say, between IFPC and Patriot and THAAD, but it may be much more elusive and perhaps never achieved for the entire United States military," he said, if not "impossible."

Now, IBCS only covers Army systems, but that's complex enough. Indeed, the Army ordering Northrop to integrate additional systems into IBCS is one reason for the four-year delay.

On the other hand, even as Northrop develops IBCS for comprehensive, wholesale integration, aerospace titan Lockheed Martin is taking a retail approach by integrating Patriot and THAAD with one another — but nothing else. That's a near-term expedient driven by the Army's needs on the Korean peninsula, where Patriots and THAADs are both deployed. Lockheed air & missile defense VP Tim Cahill told reporters here his approach is "very consistent" and complimentary with Northrop's IBCS, just smaller in scope and faster to field. But the very fact that the Army is funding both approaches means it has a potential backup plan if IBCS struggles.

While Karako remained scrupulously neutral on the specifics of IBCS — pointedly declining my invitations to take a cheap shot at the program — he did tell the conference that "we can't really afford to re-start from scratch." Even if IBCS can't achieve its full ambitions, he said, we should
deploy an “IBCS-light or IBCS-like” capability. Better integrating our disparate air and missile defense systems, he said, is essential to survival in a future war against a high-tech great power like Russia or China.

“Whatever modifications or accelerations IBCS has done...whoever gets the contract and the benefits, I'm agnostic on that,” Karako said. “The point is the capability.”


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US ARMS CONTROL

Reuters (New York, N.Y.)

Moscow Ready to Discuss Its Newest Strategic Weapons with U.S.: RIA
Author Not Attributed
Aug. 14, 2018

MOSCOW (Reuters) - Russian Deputy Foreign Minister Sergei Ryabkov said on Tuesday Moscow was ready to discuss its newest strategic weapons with the United States even though they were not part of the INF arms control treaty, Russian state news agency RIA reported.

The arms control agreement, known as the Intermediate-Range Nuclear Forces Treaty, was signed in the late 1980s between the Soviet Union and the United States.

Days after a meeting between Russian President Vladimir Putin and U.S. President Donald Trump in Helsinki last month Russia showed off ‘super weapons’ — a new generation of nuclear and conventional missiles.

Ryabkov also said that the United States had violated another bilateral arms agreement — the Strategic Arms Reduction Treaty — by modernizing its weapons, TASS reported.


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

Once ‘No Longer a Nuclear Threat,’ North Korea Now in Standoff with U.S.
By David E. Sanger and William J. Broad
Aug. 10, 2018

WASHINGTON — North Korea is insisting that the United States declare that the Korean War is over before providing a detailed, written disclosure of all its atomic weapons stockpiles, its nuclear production facilities and its missiles as a first major step toward denuclearization.

Two months after President Trump declared his summit meeting in Singapore with Kim Jong-un a complete success, North Korea has not yet even agreed to provide that list during private exchanges
with Secretary of State Mike Pompeo, according to American and South Korean officials familiar with the talks.

Mr. Pompeo maintains progress is being made, although he has provided no details. But John R. Bolton, Mr. Trump’s national security adviser, this week said, “North Korea that has not taken the steps we feel are necessary to denuclearize.”

On Thursday, North Korea’s state-run newspaper, Rodong Sinmun, called the declaration of the end of the war “the demand of our time” and that would be the “first process” in moving toward a fulfillment of the June 12 deal struck between Mr. Trump and Mr. Kim. Pyonygang also wants peace treaty talks to begin before detailing its arsenal.

If the standoff over the parallel declarations remains, it is hard to see how the two countries can move forward with an agreement.

“The North Koreans have lied to us consistently for nearly 30 years,” Joseph Nye, who wrote one of the National Intelligence Council’s first assessments of the North’s weapons programs in 1993, said at the Aspen Institute on Tuesday.

“Trump is in a long tradition of American presidents who have been taken to the cleaners,” Mr. Nye said.

Neither Mr. Trump nor Mr. Pompeo has acknowledged the impasse. But officials said South Korea has quietly backed the North Korean position, betting that once Mr. Trump has issued a “peace declaration” it would be harder for him to later threaten military action if the North fails to disarm or discard its nuclear arsenal.

Against North Korea’s continuing nuclear buildup — and its threats to strike the United States — Washington has long refused to formally declare the end of the war, which was halted with a 1953 armistice but never officially brought to a close.

And fears remain that making concessions to Pyongyang — especially after Mr. Trump shelved annual American military exercises with South Korea that he called “war games,” the phrase used by the North — would outrage Republicans in Congress and open Mr. Trump to charges that he has been outmaneuvered by the North Korean leader.

The White House has never reconciled Mr. Trump’s post on Twitter after meeting Mr. Kim that “there is no longer a Nuclear Threat from North Korea” with Mr. Bolton’s assessment that the Singapore agreement has so far yielded almost no progress in the nuclear arena. That view is shared by many in Congress and the American intelligence agencies.

For Mr. Trump and Mr. Pompeo, much rides on how this standoff is resolved — or whether it results in the collapse of what the president called his determination to “solve” the nuclear crisis.

Mr. Pompeo has told associates that he believes his tenure as secretary of state will be judged largely on how he handles the negotiations. In recent weeks he has softened some of his statements toward North Korea, saying the United States is open to a step-by-step approach that most officials had previously rejected.

“The ultimate timeline for denuclearization will be set by Chairman Kim,” Mr. Pompeo said last week — a stark contrast to Mr. Trump’s statements last year that North Korea should give up its weapons rapidly, or face tremendous, if unspecified, consequences.

Challenged about the lack of progress so far, officials at the White House and State Department pointed to three developments as signs that the strategy with North Korea is advancing.
They noted that North Korea has not conducted a missile or nuclear test since November. Since the Singapore summit, Pyongyang has returned the remains of about 55 Americans killed in the Korean War, which appear genuine, a good-will gesture though one unrelated to the nuclear program. And satellite evidence suggests North Korea has begun dismantling a test site where it has developed missile technologies and launched space satellite missions.

Experts cautioned, however, that all the steps taken so far are easily reversible, much as North Korea rebuilt a nuclear reactor after blowing up its cooling tower on television at the end of the George W. Bush administration.

“I had low expectations about Singapore, which have been more than met,” said Christopher Hill, who negotiated the accord that resulted in the blowing up of the reactor cooling tower. He noted that the agreement that Mr. Trump struck with Mr. Kim did not go beyond commitments the North had made to Presidents Clinton and Bush.

But Mr. Trump has retained his enthusiastic tone, apparently convinced he can persuade Mr. Kim to give up his weapons as long as the personal line remains open between the two leaders.

Mr. Pompeo has begun talking about keeping up sanctions pressure. But Mr. Trump has said little about his earlier promises of “maximum pressure” against Pyongyang, recently shifting his sanctions threats for Iran — which, unlike North Korea, has no nuclear weapons.

North Korea is continuing to advance its nuclear and missile capability, although in less dramatic and visible ways than last year’s missile tests. Over the past two months, the North has expanded several significant programs critical to its continued production of nuclear material and the expansion of its nuclear stockpile.

While there is no agreement on how many nuclear weapons North Korea now owns, the C.I.A.’s official estimate of around 20, issued when Mr. Trump came to office, is creeping up, officials said. The current estimates are closer to 40.

The Defense Intelligence Agency uses a larger figure of 60, but that assumes highly efficient production capabilities, which many experts doubt.

The wide variance in weapons estimates underscores the problem of knowing whether North Korea is actually giving up its arsenal. The declared listing of its current stockpiles and production facilities is meant as a critical first step, so that American intelligence agencies can compare it to their findings, and then challenge the North Koreans if they have not revealed suspected sites.

But the North Koreans have many reasons to balk at providing the declaration. They fear that once they identify locations of key facilities, the United States will use that information to target any preemptive strikes in the future. And they also fear that the declaration will put them on a pathway to giving everything up — or being charged with lying about the true scope of their program.

Some parts of that program are hard to hide. Analysts who study satellite images say the North is firing up a large new reactor — its second at Yongbyon, its top nuclear site. Such reactors make plutonium, a main fuel of nuclear arms. The new reactor, analysts say, can make four times more than the North’s existing large reactor, which long supplied plutonium for its nuclear arsenal.

Last month in Senate testimony, Mr. Pompeo acknowledged that North Korea’s plants “continue to produce fissile material,” the technical term for the fuel at the core of nuclear warheads.

Separately, American intelligence officials have found that the North is continuing to make long-range missiles at a sprawling manufacturing site just north of Pyongyang, according to news reports. Analysts who study satellite imagery say they see daily activity at the plant consistent with missile production.
Arms control experts say such work is unsurprising since North Korea has committed itself to few particular denuclearization steps. Stopping activity unilaterally, the experts say, would undermine its leverage in any coming arms negotiations.


The Hill (Washington, D.C.)

**US Ambassador Urges UK to Pull Out of Iran Nuclear Deal**

By Megan Keller

Aug. 12, 2018

The U.S. on Saturday urged Britain to pull out of the 2015 Iran nuclear deal and instead join the U.S. to "[turn] up the pressure" on Iran.

U.S. ambassador to the United Kingdom, Robert Wood Johnson, wrote in the British paper the Sunday Telegraph, that "Iran grew bolder" after signing on to the Obama-era deal.

"It is clear that the danger from Iran did not diminish in the wake of the [2015 Iran] deal," Johnson wrote. "Far from becoming a more responsible member of the international community, as we had all hoped, Iran grew bolder."

"It is time to move on from the flawed 2015 deal," he continued. "We are asking global Britain to use its considerable diplomatic power and influence and join us as we lead a concerted global effort toward a genuinely comprehensive agreement."

Johnson’s comments come days after the U.K.'s Middle East minister Alistair Burt said Britain would not join the U.S. in sanctioning Iran, Reuters reported.

Burt said U.K. remains open to discussions with the U.S. over addressing mutual concerns about Iran, but said the Iran nuclear deal is integral to Britain’s regional security.

In a controversial move, President Trump pulled the U.S. out of the deal in May, breaking with longtime European allies. The move also upheld a campaign-era promise of Trump’s and dealt a significant blow to former President Obama’s international agreement.

This week, the Trump administration announced that it would reimpose sanctions on Iran that were lifted as part of its nuclear agreement with the country. The sanctions will take effect at 12:01 a.m. Tuesday.

The reimposition of sanctions comes amid protests across Iran, with demonstrators voicing dissatisfaction with a weak economy and financial corruption.

Tensions between Trump and Iranian President Hassan Rouhani have ratcheted up in recent months amid U.S.-imposed sanctions on Iran.

But administration officials say that increasing pressure on Tehran — including through sanctions — aligns with the possibility of talks with Iranian officials.


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COMMENTARY

The Hill (Washington, D.C.)

In Gorky Park, with Nuclear Worries

By Matthew Bunn

Aug. 13, 2018

On a recent Friday night in Moscow, I went for a stroll through Gorky Park, along the Moscow River. Mothers were pushing their toddlers in strollers; couples were walking hand-in-hand; people in paddle boats were cruising around a pond. I thought of how my own daughters would enjoy this scene.

And then, like a bath of ice water down my back, it hit me: these are the people at whom my country has thousands of nuclear weapons pointed, and whose country has thousands of such weapons pointed at us. The horrifying insanity of that fact left me breathless.

The U.S. military takes care not to intentionally target mothers with strollers. U.S. nuclear weapons are aimed at military targets, from nuclear missile silos to military bases and production facilities. But many of those targets are located not far from cities, and the terrible destructive power of nuclear weapons does not discriminate.

If U.S. and Russian plans for nuclear war ever were carried out, tens of millions would die — including, in all likelihood, everyone I saw in Gorky Park. Much of the human civilization built up over thousands of years would be obliterated. More than a quarter-century after the end of the Cold War, we continue to rest our security plans on threats to kill more people than Adolf Hitler ever did.

Today, both Russia and the United States are modernizing their nuclear forces to keep these threats robust for decades to come — though their forces’ total numbers are limited by treaties (thank goodness). The U.S. program is expected to cost $1.2 trillion over 30 years, and the Trump administration has added new, smaller nuclear weapons that critics warn might seem more usable should war come. Russia’s program includes entirely new types of strategic weapons, from an intercontinental torpedo designed to blow up U.S. coastal cities to a nuclear-powered and nuclear-armed cruise missile.

In both countries, these efforts are going forward with only the most limited public debate.

There is no doubt that the United States needs strong military forces — including, for now, an effective nuclear deterrent. Russia is ruled by a thug who has invaded nearby countries (more than once); props up Bashar Al-Assad’s murderous regime in Syria as it massacres civilians with poisonous gas; assassimates opponents on British soil; and ordered his intelligence agencies to interfere with the U.S. 2016 presidential election.

The United States needs to firmly push back against threats to its interests and values.

But even during the depths of the Cold War, U.S. and Soviet leaders understood that despite their global confrontation, they had to work together for mutual survival. They built the nuclear arms control regime together, and they built the global effort to stem the spread of nuclear weapons to others. Ronald Reagan assailed the Soviet Union as an “evil empire,” funded anti-communist rebels around the world, demanded that Soviet leader Mikhail Gorbachev tear down the Berlin Wall — and negotiated arms control agreements that led to the first real reductions in nuclear arms. Today, we, too, ought to be able to walk and chew gum at the same time.
To make progress toward reducing the risk, Americans need to understand that while we feel threatened by Russia, Russians also feel threatened — and Russia has quite a long list of complaints of its own about American behavior (some justified, some less so). Diplomacy will have to help address the concerns of both sides, not just American fears.

So, in the classic Russian phrase, what is to be done?

First, at their next summit, President Trump and Russian President Vladimir Putin should restate the fundamental point that Reagan and Gorbachev once made: “A nuclear war cannot be won and must never be fought.” Second, they should direct their governments to make the compromises necessary to resolve the charges of violations of the Intermediate-Range Nuclear Forces (INF) Treaty that each side is making against the other. Third, they should extend the New START Treaty for five years, keeping its cap on nuclear forces and the inspections and data exchanges that enhance transparency and predictability. That would give negotiators time to work out a follow-on agreement.

Then, U.S. and Russian experts need to revitalize in-depth “strategic stability” talks, to explore both sides' concerns and how they might be addressed. From Europe to the Middle East, they need to discuss ways to resolve or tamp down regional conflicts and tensions that might someday bring U.S. and Russian forces to blows. Washington and Moscow need to agree to fully implement accords to prevent dangerous military incidents, and allow observers at military exercises.

And they need to get our militaries and nuclear scientists talking to each other again; today, the world’s most powerful militaries and largest nuclear complexes are proceeding in almost total isolation from each other, which poses a danger to everyone.

The nuclear danger remains very real, and we need urgent action to address it — including public pressure. I want my daughters, and those families in Gorky Park, to live to a ripe old age, and perhaps one day even get to know each other.


The National Interest (Washington, D.C.)

North Korea Can Keep Its Nukes — But Only Under This Condition

By Grant Newsham

Aug. 14, 2018

If North Korean doesn't produce—or offer up a sign of good faith—war will be a real option.

Before President Donald Trump met Kim Jong-un in Singapore in June, even the optimists were skeptical about North Korean intentions. Six weeks later, it’s hard to even find an optimist—especially after Secretary of State Pompeo’s recent meetings in Pyongyang. He described the talks as productive, while the North Koreans railed against America’s “gangster-like” mind-set.

Based on past experience, the usual practice is now for the Americans, South Koreans and Japanese to offer a menu of “goodies” for Pyongyang. But the Trump administration is leery of that trap and not much for bribery of this sort.

So, maybe a show of North Korean good faith is in order—especially since Trump already postponed bilateral U.S.-ROK military exercises and, as the president is wont to do, still describes Kim as a splendid fellow.
However, it’s debatable if Kim Jong-un is genuinely interested in reforms of the sort that will allow a deal with the United States. Some observers portray Kim as akin to Deng Xiaoping or Mikhail Gorbachev. Both leaders unleashed reforms that were largely economic on their respective countries, one successfully and the other not.

But Deng and Gorbachev were not part of family dynasties and willing and able to do anything, no matter how ruthless, to preserve their family regimes. Nor did most of their populations worship them.

One does hear that Kim is different because he grew up in Switzerland and likes the NBA and Dennis Rodman—and therefore desires reform. But it was also said when Yuri Andropov, the former KGB boss, became head of the USSR that he was a secret reformer since he liked Scotch whiskey and jazz music. He was not.

Kim might want the economic results of Deng-like reform, but one doubts he is willing to do what is necessary to get them. Doing so would weaken his personal control—and that might be deadly for him.

Also, while Deng was no choirboy he had survived (not unscathed) fierce Party in-fighting that ravaged China during the Cultural Revolution. He had a clear sense that the PRC was in dire straits and headed for worse. Kim’s experience is different. He’s led a pampered, well-fed life unlike most of his countrymen and simply may not see the urgency facing his country as did Deng—and even Mihail Gorbachev.

So what might North Korea do to demonstrate that this time is different?

That’s a tough one when a country has behaved this badly and for so long. Whatever it is, the show of good faith must be something jaw-dropping.

For example, Pyongyang could stop counterfeiting U.S. dollars and cigarettes, and it might cease manufacturing and selling illegal drugs. Or perhaps not kill regime enemies in public places (or private places for that matter?). Or maybe call a halt to cyber theft and extortion?

But these would be awkward. North Korea would need to stop doing things it isn’t supposed to be doing in the first place—and swears it isn’t doing.

Of course, to demonstrate its sincerity North Korea could “come clean” about the aforementioned activities—and about kidnapped Japanese or the sinking of a ROK Navy ship, Cheonan in 2010, or about Otto Warmbier’s demise. But coming clean on anything is not exactly Pyongyang’s specialty. If it did, even skeptics would take notice.

So how about destroying some missiles? Unless North Korea destroys all—or most—of them (and can somehow prove it), this won’t win over many skeptics. There’s no way to know what else they have or that is hidden away underground. And anyway, the regime can always just build more missiles.

Maybe it could deactivate or destroy a nuclear test site? Pyongyang sort of tried this in May, but nobody was much impressed. Nobody is quite sure what was destroyed and there are probably other sites. And anyway, reconstructing such sites is not difficult.

More recently, the North Koreans appear to be dismantling a rocket launch facility. Intriguing, but once again, it can be rebuilt and some observers claim Pyongyang is just giving up something it doesn’t need anymore.

So, perhaps handing over remains of U.S. servicemen missing-in-action? This shouldn’t get much mileage with the Americans. Civilized people would have handed them over already—and for free.
And there are suspicions North Korea has a warehouse of MIA remains and only doles them out when they want to get something from the Americans.

How about closing down the Gulag and releasing prisoners? This is a nice move at first glance, but the regime could just imprison them elsewhere, or otherwise keep an iron grip on the “releasees” in the world’s most oppressive state.

But perhaps South Korea can take them in? This would be a worthy effort by the Moon administration and some of Moon’s advisors who tout intra-Korean fraternity and suggest it’s the Americans who keep the peninsula divided. That said, one doubts the ROK will go for this.

Regardless, it’s hard to imagine North Korea releasing Gulag inmates to anywhere (even inside North Korea) where they can “bad mouth” or otherwise undermine the regime.

But here’s one option that is doable, mostly verifiable, and even skeptics might grudgingly appreciate: North Korea can move its artillery and rockets out of range of Seoul.

The thousands of artillery pieces and missiles—many in hardened, concealed positions—that can range Seoul are effectively a nuclear weapon. And a “nuclear” weapon that can be delivered with more ease and accuracy than North Korea’s existing missile-launched nuclear weapons.

So if the Kim regime moves these weapons out of range of Seoul, then it effectively relinquishes a nuclear weapon—and one that has been a trump card for decades—hamstringing American and allied options for pressuring North Korea.

Taking Seoul out of range would put North Korea at a genuine disadvantage—and indeed, constitute a strategic concession on Pyongyang’s part.

Verifying a North Korean withdrawal of its artillery and missiles is presumably feasible given that the DMZ and nearby terrain is one of the most heavily surveilled and monitored places on earth, and has been for decades.

Of course, it’s possible to bring the artillery and missiles back into position if negotiations don’t go as Pyongyang prefers. But doing so would be a clear sign of escalation or warlike intent. And as importantly, the weaponry would be subject to interdiction (or in other words, destruction) as it is being put back into position.

Hopefully, Kim has figured out that President Trump is unlike his predecessors, and is unlikely to be strung along for very long. Also, he doesn’t have the option of “kicking the can down the road” as previous presidents have done.

If North Korean doesn’t produce—or offer up a sign of good faith—war will be a real option. So, Pyongyang had better hurry and do something jaw dropping, and hopefully Beijing will encourage them to do so.

https://nationalinterest.org/feature/north-korea-can-keep-its-nukes%E2%80%94only-under-condition-28742

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Synthetic Biology: The Promise and Peril of a New Dual-Use Technology

By Al Mauroni

Aug. 10, 2018

Imagine being able to use biological organisms as tiny machines to produce rare and complex chemicals faster and more efficiently with less waste, using a deliberate engineering process that enables molecular biology to make new and reliable commercial products. This is synthetic biology, which seeks to take the science of genetic engineering and apply it to industrial manufacturing in the fields of medicine, chemical manufacturing, fuel and power systems, and agriculture.

Synthetic biology is a relatively recent technology whose future applications are being increasingly discussed within industry and academic circles. Like other technologies, it has potential dual-use (commercial and military) applications. As much as scientists and engineers are looking forward to creating new commercial processes and products with this capability, some experts are warning that synthetic biology could also lead to new military capabilities — specifically, new biological warfare agents and diseases that could be dangerous in the wrong hands. The John Hopkins Center for Health Security recently hosted a group exercise in which a bioengineered virus called “Clade X” was deliberately released by a violent extremist group, resulting in 150 million dead after 20 months. Loren Thompson of the Lexington Institute warns that synthetic biology could allow the development of “a super pathogen threatening the survival of large populations, and even civilization.” While these concerns may be premature, the U.S. government must consider the possibility that state and nonstate actors could misuse this emerging life science.

The debate about the dual-use nature of nuclear, biological, and chemical technologies is not new. While nuclear physics have demonstrably improved power generation and health sciences, nuclear weapons have advanced states’ military capabilities and, in many cases, created proliferation challenges that are intertwined with commercial nuclear technologies. For decades, there were concerns that advances in chemical and biological sciences would result in the development of bioengineered viruses and novel chemical weapons. At the same time, industry has used these same technical advances to provide the general public with new household products and a broader selection of luxury services. Other dual-use technologies of concern include directed energy, commercial drones, and cyber systems. The challenge, in each case, is balancing the commercial growth of these technologies against the need to prevent them from being used against U.S. security interests.

The National Academies of Science completed a study in June 2018 titled “Biodefense in the Age of Synthetic Biology” to investigate the potential manipulation of biological organisms to produce disease-causing agents or toxins, in response to a request by Deputy Assistant Secretary of Defense for Chemical and Biological Defense Dr. Chris Hassell. The study sought to address three questions: What are the security concerns relating to synthetic biology, how soon might these threats emerge, and what are the options to mitigate these concerns? The report offers a framework for assessing these questions, identifying the highest concerns to be re-creating known pathogenic viruses, making existing bacteria more dangerous, and making biochemicals through in situ synthesis (within the human body).

The good news is that most of this technology is still largely beyond the capabilities of violent extremist organizations and limited to nation-states with sophisticated laboratories and good resources. The bad news is that the rapid rate of technological change creates significant uncertainty as to what potential weapon systems might eventually be developed and used against U.S. military forces. As the technology and the potential threats evolve, various U.S. government
agencies — including the Departments of Defense, Health and Human Services, Homeland Security, Agriculture, and Commerce — will have interests regarding synthetic biology. How should the U.S. government articulate a strategy to guide the development of this new technology?

The 2017 National Security Strategy does identify biothreats as an issue of concern. “Biological threats to the U.S. homeland — whether as the result of deliberate attack, accident, or a natural outbreak — are growing and require actions to address them at their source.” This general policy statement is not significantly different from the 2009 National Strategy for Countering Biological Threats. As such, it does not offer adequate guidance for addressing the dual-use challenges of synthetic biology. The British government just released a “Biological Security Strategy” that is much better developed than the 2009 U.S. strategy, but still makes the mistake of trying to address all biological threats under one rubric.

The U.S. government should seek to articulate policy that encourages synthetic biology’s commercial growth while examining the potential development of biothreats. This is not an easy task. Good policy relies on clear definitions, defined roles and authorities, and assessments to ensure that the policy is making progress. If the U.S. government wants a robust, coordinated effort in this area, it must appreciate that it’s not merely a matter of getting the medical professionals to address this diverse set of biological threats — it’s also important to understand that there are multiple agencies with varying concerns. Addressing this new dual-use technology issue will require a delicate and deliberate approach rather than a general boilerplate strategy.

Defining the Problem

Synthetic biology goes beyond genetic engineering. It has been described as a convergence of chemistry, biology, computer science, and engineering to create a standardized, automated construction of biological systems. While synthetic biology can involve the manipulation of biological material, the possibilities extend far beyond genetically modifying foods or animals; for instance, synthetic biology capabilities can be used to modify existing traits or introduce new ones into organisms to manufacture new products in a more consistent and less expensive way than traditional technologies allow. Many are familiar with the potential of 3-D printers (both commercial and defense applications). Consider the potential that could be unlocked by employing similar engineering methods that use biological and chemical materials at the nanometer-level to create jet fuels that don’t come from oil wells, batteries that run on bacteria, bricks that don’t require kilns, and more environmentally friendly industrial chemicals. Additionally, there are significant benefits that might be derived from synthetic biology in developing new medical countermeasures and diagnostics capabilities.

Similar to the biotechnology boom of decades past, the challenge will be to develop U.S. government policy that does not overly hamper industry but allows for some degree of oversight against the dangers of misusing biotechnology. As noted in 2015 by an earlier National Academies of Sciences report, industry is well on its way to producing biobased products at lower costs, faster production speeds, and an increased production capacity. At the very least, a regulatory regime is required to ensure the safe commercialization of these new organisms, new chemical products, and new methodologies.

The 2018 National Academies of Science report does a solid job of assessing concerns about making existing pathogens more dangerous, manufacturing chemicals and biochemicals in novel ways, and creating biological weapons that alter the human host. To be clear, there are significant hurdles that still need to be addressed before any nation could plausibly use this technology to develop new biological weapons. The framework offers policymakers insights on what to watch for as this new technology develops. The challenge is translating these observations into coherent and effective U.S. policy.
While the National Security Strategy is correct to be concerned about the possible development of new and dangerous pathogens through synthetic biology, the greater national security challenge may come from the development of new commercial and military products in this field. This technology is certainly not limited to the United States. Other nations are eager to exploit the potential benefits of synthetic biology. China in particular is racing forward in this field, and its significant investments in U.S. pharmaceutical firms ought to be critically examined. As a parallel example, the U.S. military was concerned that fentanyl products might be weaponized to use against military or civilian populations, given their broad availability within the United States. There have been no domestic terrorism cases or military attacks using fentanyl agents, while there remains a significant role for fentanyl in the medical profession as analgesics.

Developing a National Policy

The 2017 National Defense Authorization Act directed the Departments of Defense, Health and Human Services, Homeland Security, and Agriculture to develop a new national biodefense strategy and implementation plan. The Trump administration has not yet released this plan, but if it is similar to other past national strategies addressing biological threats, it will be more of a general outline of the threat of biological organisms and less specific in its direction to executive agencies. While this approach may make sense to medical professionals, it does not allow the development of distinct policies within the areas of military operations, combating terrorism, and homeland security.

The U.S. government’s approach to incident management is to mitigate deliberate and natural threats through an “all-hazard” response, allowing for the integration of diverse capabilities across the government within an accepted framework. But it is hard to determine how well the U.S. government addresses biological threats in particular. The 2009 National Strategy made the mistake of not distinguishing between natural disease outbreaks and bioterrorism incidents, and as a result, was not useful for guiding policy development. The United States cannot afford an attitude that assumes all biological threats are homogenous enough to address under one construct.

Within the U.S. government, the terms biodefense, biosecurity, biosurety, and biosafety are often loosely used and not clearly defined when the general topic of "biothreats" comes up. These terms mean different things to different agencies. For instance, nonmedical personnel may be especially surprised to find out that biosurveillance is a system for monitoring not dangerous biological organisms, but rather the entire biological environment for hazards, including chemical, biological, and radiological, natural and man-made, and their effects on humans, animals, and plants. As a result of the failure to coordinate across agencies, the U.S. government wastes time and resources by creating duplicative programs, or worse yet, by ignoring obvious capability gaps.

Developing a national strategy to exploit the potential commercial use of synthetic biology, while mitigating the impact of bad actors seeking to develop new and novel biological weapons, will take some adroit maneuvering. In seeking to minimize the impact on the commercial sector, the danger is that policymakers will have inadequate guidance on what and how to protect against both traditional and nontraditional biological threats. This is why the government should avoid a generalized policy approach that attempts to address all natural disease outbreaks and man-made biological threats, and instead clearly articulate its terms and objectives over the long term.

[Link to War on the Rocks article]

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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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