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Feature Report

“Toward a More Proliferated World? The Geopolitical Forces that Will Shape the Spread of Nuclear Weapons”. Published by CSIS; Sept 2020

<https://www.csis.org/analysis/toward-more-proliferated-world>

The United States has been remarkably successful at preventing the spread of nuclear weapons, but there are new reasons to question whether this track record will last into the future.

Working with partners, the United States has steadily built a framework of disincentives and barriers to prevent proliferation. These include: (1) international treaties and agreements that have erected legal, political, and normative barriers to the bomb; (2) U.S. security commitments to allies that dampen their own need for nuclear weapons; and (3) a set of tough penalties (e.g., sanctions) for those who get caught trying to build the bomb. In other words, the barriers to entry to the nuclear club are high, and those countries that want the ultimate weapon need to be willing to accept significant risks. This helps explain why, although many countries have explored or pursued nuclear weapons, only nine states have them today.

But several trends are eroding the foundation on which this formidable set of barriers rests. These trends are rooted in, and being shaped by, changes to the nature and structure of the international system: namely, the decline of U.S. influence and its gradual withdrawal from the international order that it helped create and lead for more than 70 years, and the concurrent rise of a more competitive security environment, particularly among great powers. These trends (detailed in the report) will have three broad implications for proliferation and U.S. policy. First, they stand to increase pressures on countries to seek nuclear weapons or related capabilities as a hedge. Second, they will almost certainly challenge the United States’ ability to effectively wield the traditional “carrots and sticks” of nonproliferation and counterproliferation policy and dilute the effectiveness of those tools. Finally, they could increasingly pit U.S. nonproliferation goals against other policy objectives, forcing harder tradeoffs.

U.S. policy must adapt unless the United States wants to be faced with a more nuclear-capable landscape in the future.

This research was made possible with the support of the MacArthur Foundation.

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NUCLEAR WEAPONS AND DETERRENCE

Breaking Defense (Washington, D.C.)

GBSD, B-21 Spending Could Top \$10B in 2027: Cowen Group

By Theresa Hitchens

Sept. 9, 2020

WASHINGTON: The Air Force's combined spending on the Ground Based Strategic Deterrent (GBSD) and the B-21 bomber is likely to triple by 2027 to some \$10.2 billion annually, as production begins to ramp up under both programs, the Cowen Washington Research Group estimates.

The \$13.3 billion GBSD contract, announced yesterday by the Air Force, covers engineering, manufacturing and development (EMD) of the new ICBMs through 2029. The Cowen analysis, out today, notes that while the contract announcement does not explain whether LRIP is included, it can be assumed. This is because Air Force budget justification documents detail plans for "five option years" under the contract to include "early production and deployment," author Roman Schweizer explains.

GBSD, which will replace the aging LGM-30G Minuteman III missiles that first became operational in 1970, represents one third of DoD's top priority nuclear modernization effort. The third leg of the modernization program is the Navy's planned buy of 12 new Columbia-class nuke-launching submarines, which the Pentagon's 2021 budget documents estimate to cost \$110 billion to buy.

The Congressional Budget Office in 2019 estimated the price tag for the total DoD triad modernization effort at \$234 billion through 2028. This ginormous price tag does not include spending by the Energy Department to build the nuclear warheads that would be carried by DoD's ICBMs, bombers and subs.

Northrop Grumman was the sole bidder for the GBSD program following Boeing's decision last year to drop out over concerns about Northrop's acquisition of one of the two makers of solid rocket motors in the country, Orbital ATK.

Cowen estimates that research and development spending for GBSD will jump from \$1.5 billion in 2021, peaking at \$3.07 billion in 2024, and decreasing to \$1.9 billion in 2027. Production, the analysis says, will begin in 2027 with a budget of \$2 billion. The Air Force's press release yesterday says that it expects to begin deploying GBSD in late 2020.

For the B-21, the analysis estimates that R&D spending will steadily decline from the \$2.8 billion in the Air Force's 2021 request to \$1.2 billion in 2027. But production costs, the analysis finds, will ramp up: from \$202 million in 2022 to \$4 billion in 2027.

The analysis is largely based on Air Force budget estimates through 2025, and Schweizer's own projections. Of course, this means the numbers are squishy. That's especially true for the B-21, whose program is highly classified.

Indeed, the number of B-21 bombers the Air Force intends to buy, originally set at 100, remains unclear. As Breaking D readers know, senior service officials have been hinting loudly that they need more.

In addition, unit costs for the stealth bomber's production are also classified. Way back in 2015, when the Air Force awarded Northrop Grumman the B-21 contract, it put a cap on the Average

Production Unit Cost per aircraft of \$550 million in 2010 dollars. "The APUC from the independent estimate supporting today's award is \$511 million per aircraft, again in 2010 dollars," the release added. No updated assessments have been released. Several high officials have said the program is on budget and on schedule, without providing any details.

Finally, the production schedule and the count of how many are to be built each year, is classified, along with the planned annual procurement costs. That said, our colleagues at Bloomberg reported in February that internal Air Force budget documents show procurement starting in 2022 budgeted at \$193 million. That jumps to \$4.3 billion in 2025. Schweizer said in an email that his estimates are based on those numbers, and that the projections for 2026 and 2027 are his own.

Cowen's analysis notes that Congress is by and large supportive of both efforts. While some have fretted that presidential candidate Joe Biden might reconsider building the GBSD, the document says that is not likely. After all, the Obama administration, during which Biden served as Veep, actually started the program.

<https://breakingdefense.com/2020/09/gbsd-b-21-spending-could-top-10b-in-2027-cowen-group/>

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Defense News (Washington, D.C.)

Watch India Test Its New Homemade Hypersonic Vehicle

By Vivek Raghuvanshi

Sept. 9, 2020

NEW DELHI — India on Monday conducted a successful test of a fully indigenous hypersonic technology demonstrator vehicle powered by an air-breathing scramjet engine, the Defence Ministry announced.

With the test, India joins the U.S., Russia and China in the race for hypersonic technology development.

The flight test took place Sept. 7 around 11 a.m. on an island off the coast of Odisha. The demo vehicle was indigenously developed by the government's Defence Research and Development Organisation, and it has the ability to fly at six times the speed of sound, according to defense scientists here.

The ministry said the hypersonic cruise vehicle was launched using a solid rocket motor, which took it to an altitude of 30 kilometers. Then the cruise vehicle separated from the launch vehicle and the air intake opened as planned, the ministry added.

"The successful demonstration proved several critical technologies including aerodynamic configuration for hypersonic manoeuvres, the use of scramjet propulsion for ignition and sustained combustion at hypersonic flow, thermo-structural characterisation of high-temperature materials, separation mechanism at hypersonic velocities, etc.," DRDO said in a statement.

A top DRDO scientist told Defense News that the vehicle will be used to launch both hypersonic and long-range cruise missiles.

"DRDO has spent around \$4.5 million on its [HTDV] prototype development cost, and three more tests will be carried out in the next five years to make this platform into a full-fledged hypersonic weapon that is capable of carrying both conventional and nuclear warheads," he said.

DRDO spent about \$30 million on the design and development phases.

Congratulating DRDO, Prime Minister Narendra Modi tweeted: “The scramjet engine developed by our scientists helped achieve a speed of 6 times the speed of sound! Very few countries have such capability today.”

Defence Minister Rajnath Singh called the test a “landmark achievement” toward India becoming self-reliant and less dependent on foreign technology.

“It’s now time to progress to the next phase with all critical technologies being established by the successful [HTDV] flight test, using the indigenously developed scramjet propulsion system,” he added.

<https://www.defensenews.com/global/asia-pacific/2020/09/09/india-tests-homemade-hypersonic-vehicle/>

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USNI News (Annapolis, Maryland)

Thornberry: Final NDAA Bill Won’t Be Ready Until After Election

By Sam LaGrone

Sept. 9, 2020

The final conference report on the Fiscal Year 2021 National Defense Authorization Act won’t be ready until after the Nov. 3 election, the outgoing ranking member of the House Armed Services Committee said on Wednesday.

Rep. Mac Thornberry (R-Texas) said the conference report between the House and the Senate on the NDAA is likely to come out “pretty quickly” after the election, he said during a keynote at the Defense News conference.

While the two committees largely agreed on the major parts of the bill, both the Senate and House versions of the bill include language that would start the process of renaming installations and ships currently named after Confederate leaders, a stance that has prompted a veto threat from President Donald Trump.

Thornberry said there were other considerations in the bill that have caused the current hold.

“It’s not just one provision, I think, that prevents us from getting a conference report done. It’s the times that we are living in. On the other hand, I think that we should be able to get a conference report pretty quickly after the election,” he said.

“Is there a way to get everybody to good? Of course there is. Is it likely to happen before the election? No, it’s not.”

The House and the Senate bills were split on the Pacific Deterrence Initiative, an effort to provide funds to U.S. Indo-Pacific Command to deter China. The measure follows the European Deterrence Initiative that followed the Russian seizure of Crimea in 2014.

The Senate NDAA proposed \$6 billion over the next two years to bolster military operations in the region.

“The Pacific Deterrence Initiative would ... [allow] Congress and the Pentagon to view the defense budget through a regional warfighting lens while increasing the visibility of options to advance U.S. priorities in the Indo-Pacific,” Sens. Jim Inhofe (R-Okla.) and Jack Reed (D-R.I.), the SASC chairman and ranking member, wrote in June.

In contrast, the House crafted an effort to expand support for allies to sway them away from China.

“I think what we need to do is we need to have strong enough partnerships and build the alliances in the region to force China to play by the rules,” Rep. Adam. Smith (D-Wash.) said in June.

Thornberry said he was pleased with the progress on the Pacific initiative.

“I think this is a very important provision, and the most important part is that you do see a version of it in the House and a version in the Senate,” he said on Wednesday.

“Defense Secretary [Mark] Esper said he supports a version of it; he was reluctant for a while. So, we’ll work out the details. The key thing is that if the Indo-Pacific is our priority theater, we need to put our money where our mouth is. ... I do think everybody’s coming to grips with what this new, more aggressive China means for our posture in the Pacific. But alliances is not just the work of the Department of Defense. I think DoD is working and trying, but you need obviously the State Department, also the White House, and Congress even has a role in helping build these alliances and partnerships among nations.”

Thornberry, who is retiring from the House at the end of this term, also defended military leadership, which had recently come under criticism from Trump, who said the Pentagon perpetuated wars to aid defense contractors.

“I’ve been a little dismayed at what’s happened the past few days. I know the president says things for effect a lot, but to have a commander in chief question the motivations of military leaders and basically say they’re in it for themselves ... is wrong, and it gives our adversaries an opening. Even if you think that, you shouldn’t say it,” Thornberry said.

“You can say, their judgment is wrong, or they think too much alike. There are some legitimate issues to discuss, but their motivation, their patriotism is, to me, without question. These are remarkable individuals. And another thing I’ve learned over the last 26 years is the people who have to send folks into war are the most reluctant to go to war because they’ve seen it themselves. They’ve experienced it themselves. They know the cost.”

<https://news.usni.org/2020/09/09/thornberry-final-ndaa-bill-wont-be-ready-until-after-election>

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US COUNTER-WMD

National Defense (Arlington, Va.)

Northrop Grumman Lands \$13 Billion Deal for New Nuclear Missiles

By Jon Harper

Sept. 8, 2020

Northrop Grumman has been awarded a \$13.3 billion engineering and manufacturing development contract for the U.S. military’s next-generation intercontinental ballistic missile system, the Air Force announced Sept. 8.

The Ground-Based Strategic Deterrent, or GBSD, program aims to replace the aging Minuteman III nuclear-armed ICBMs that first became operational back in 1970. The legacy platforms have already undergone significant life-extension efforts in the intervening years.

The new GBSD will have more advanced capabilities than the systems deployed today, according to the Air Force.

“I am fully confident in the evolutionary warfighting effectiveness GBSD will ensure,” Gen. Tim Ray, commander of Air Force Global Strike Command, said in a press release. “We are leveraging stable requirements, modern technology, we own the technical baseline, and have a modular design to keep the program rapid, relevant and affordable. The increased accuracy, extended range and improved reliability will provide the United States a broader array of options to address unforeseen contingencies, giving us the edge necessary to compete and win against any adversary.”

The EMD phase of the program is expected to last eight-and-a-half years and include weapon system design, qualification, test and evaluation and nuclear certification. Upon successful completion, the Northrop Grumman team will begin producing and delivering a fully integrated weapon system, the company said in a press release.

“Our nation is facing a rapidly evolving threat environment and protecting our citizens with a modern strategic deterrent capability has never been more critical,” Kathy Warden, chairman, CEO and president of Northrop, said in a press release. “Our nationwide team is honored and committed to continuing our partnership with the U.S. Air Force to deliver a safe, secure and effective system that will contribute to global stability for years to come.”

The GBSD program is projected to be worth up to \$85 billion. The Air Force hopes to have the next-generation weapon online in the late-2020s.

Ground-based ICBMs are one of three legs of the U.S. nuclear triad, which also consists of Air Force bombers and Navy ballistic missile submarines. The military currently has about 400 Minuteman III weapons deployed on U.S. soil.

Officials suggested the new systems will be able to be upgraded over time.

“Across the Department of the Air Force, we are looking for opportunities to inject innovation into programs to stay ahead of our adversaries,” Assistant Secretary of the Air Force for Acquisition, Technology, and Logistics Will Roper said in the news release. “Our GBSD team is doing just that by leveraging a modular open system approach to ensure our next-generation ICBM system is adaptable to challenges posed by the pace of technological advancements and new threat environments.”

The GBSD contract award to Northrop Grumman was not unexpected. The company was the last remaining competitor for the program. Both Northrop and Boeing — the original manufacturer of the Minuteman III — were awarded contracts in 2017 for the technology maturation and risk reduction phase. However, Boeing dropped out of the race after its rival for the program acquired solid rocket motor manufacturer Orbital ATK— which was renamed Northrop Grumman Innovation Systems. Boeing did not submit a bid for the EMD phase of the program after the request for proposals was issued last year, leaving Northrop as the last competitor standing.

“Boeing supports the U.S. Air Force and its efforts to modernize the nation’s intercontinental ballistic missile force,” Boeing said in a statement after the EMD award to Northrop was announced. “We will continue working alongside airmen to keep the Minuteman ICBM mission-ready while delivering innovative solutions in support of strategic deterrence today and tomorrow.”

Northrop’s offering passed a preliminary design review in April.

The Northrop Grumman-led industry team tapped for the program includes major contractors such as Aerojet Rocketdyne, Bechtel, Clark Construction, Collins Aerospace, General Dynamics, HDT Global, Honeywell, Kratos Defense and Security Solutions, L3 Harris, Lockheed Martin and Textron Systems, plus hundreds of small and medium-sized companies from across the defense, engineering and construction industries. The project will involve over 10,000 workers, according to Northrop.

Supporters of the ICBM leg of the triad say it is critical for deterrence.

“The dispersed basing of the ground-based deterrent enhances strategic stability by creating an extraordinarily high threshold for a large-scale conventional or nuclear attack on the U.S. homeland,” the Air Force said in the press release.

Some politicians and arms control advocates have suggested the GBSD program will be too costly and should be scaled back or canceled.

The Ground-Based Strategic Deterrent is one of several U.S. nuclear modernization programs underway. Others include the B-21 Raider bomber, the Columbia-class submarine, a new air-launched cruise missile known as the Long-Range Stand Off Weapon, and other capabilities.

<https://www.nationaldefensemagazine.org/articles/2020/9/8/northrop-grumman-lands-13-billion-deal-for-new-nuclear-missile-system>

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U.S. Army CCDC Army Research Laboratory Public Affairs

Army Fields New Chemical Detection Technology

By CCDC Army Research Laboratory Public Affairs

Sept. 8, 2020

RESEARCH TRIANGLE PARK, N.C. -- Chemical weapons pose a serious threat to civilian and warfighter lives, but technology from the U.S. Army Small Business Technology Transfer program reduces those risks. Researchers developed a product to detect chemical weapons accurately at low concentration levels.

Active Army, Reserve and National Guard units started to receive the Chemical Agent Disclosure Spray and the Contamination Indicator/Decontamination Assurance System, known as CIDAS. The Army is fielding it to all units in areas where there is a threat of chemical agents.

The Chemical Agent Disclosure Spray, purchased by FLIR Systems, Inc., has transitioned into the CIDAS Program of Record within the Joint Program Executive Office for CBRN Defense. The research, which began 20 years ago with a business first spun out of the University of Pittsburgh and later acquired by FLIR, as part of a Small Business Technology Transfer contract managed by the Army Research Office.

ARO is an element of the U.S. Army Combat Capabilities Development Command’s Army Research Laboratory.

The Army funded the basic research behind this technology at the University of Pittsburgh led by Dr. Alan Russell. Russell worked to identify ways to incorporate enzymes into polymers that would be stabilized for use outside the cell and then ultimately used in realistic battlefield environments.

Typically enzymes are not stable outside the living organism, but Russell’s fundamental polymer and enzyme chemistry research identified a way to maintain high activity of the enzymes for

sensing chemicals in realistic battlefield conditions. He then started a small business based on those findings, which FLIR purchased.

“Our ability to respond to chemical warfare is a national security challenge that is vital to protecting both civilian and military lives,” said Dr. Stephen Lee, senior scientist at the ARO. “This technology is highly sensitive, providing accurate results on only trace amounts of material, even at concentrations below levels that represent an immediate danger to life and health.”

The new technology uses enzymes (complex proteins naturally produced by living organisms that act as a catalyst for specific biochemical reactions) to drive rapid, color-based reactions with chemical warfare agents. Once applied to a surface as a liquid solution, a vivid color change indicates the exact location of contamination by a specific chemical warfare agent.

Because the underlying chemistry uses enzymes to drive specific biochemical reactions, the technology is highly resistant to potential forms of chemical and environmental interference that might be problematic for conventional detection equipment.

The product’s sensitivity also provides the ability to determine whether decontamination was effective.

“Our Agentase C2 spray technology offers unprecedented performance, enabling rapid detection of highly toxic substances while reducing the lifecycle cost of decontamination operations,” said David Cullin, vice president of business development-Detection for FLIR Systems.

Products previously available for the detection of nerve and blister chemical agents range from simple units that use colorimetric techniques, wherein the presence of a chemical substance is indicated by a specific color change, to more complex systems that use special equipment.

Unfortunately, most colorimetric-based products such as paper detection products or gas detection tubes, can be highly susceptible to chemical interference, which can result in false positive and false negative results, as well as poor sensitivity.

“Through the Army’s Small Business Technology Transfer program, a small business has changed our nation’s ability to respond to chemical attacks,” Lee said. “The Army is taking advantage of the latest breakthroughs in synthetic biology to field new capability and protect national security. Without that program, we’d never have the ability to field this capability.”

The STTR program funds research and technology development with small businesses working in partnership with research institutions, most often colleges or universities. In contrast to the basic research programs managed by ARO, the STTR program focuses primarily on feasibility studies leading to prototype demonstration of technology for specific applications.

The Defense Threat Reduction Agency, the DOD agency responsible for countering weapons of mass destruction, provided additional funding to bridge the technology from development to capability delivery.

JPEO-CBRND, the DOD entity that manages the nation’s investments in chemical, biological, radiological and nuclear defense equipment, adopted the technology as part of the Domestic Response Capability Kit.

The kit packages the chemical components into a simple, pen-like construct, an easy-to-use point-and-touch detection as well as a spray-based formulation of the same technology. The kits have been fielded to all 57 Army National Guard Weapons of Mass Destruction Civil Support Teams across the country.

Now, National Guard units throughout every state maintain the capability to provide for detection, personal protection, decontamination and medical monitoring against chemical agents.

Additionally, JPEO-CBRND recently awarded FLIR an indefinite-delivery/indefinite-quantity five-year contract worth up to \$21.8 million to support the Army's Contamination Indicator/Decontamination Assurance System program.

This award initiates the full-rate production phase to field the product to units throughout the Army.

Shipments are expected to begin in the fourth quarter of 2020.

<https://www.army.mil/article/238845>

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US ARMS CONTROL

Korea Times (Seoul, South Korea)

Foreign Minister Asks for International Support for Korea's Peace Efforts

By Kang Seung-woo

Sept. 10, 2020

Foreign Minister Kang Kyung-wha has called on the international community to support the Korean Peninsula peace process and resumption of stalled nuclear talks among North Korea, the United States and the South, according to the ministry, Thursday.

With regard to the South China Sea dispute, she stressed the importance of freedom of navigation and peaceful resolution of the conflict through dialogue.

She made the remarks, Wednesday, during a video-linked foreign ministerial session of the East Asia Summit (EAS) that involved the 10-member Association of Southeast Asian Nations, in addition to China, Japan, the United States, Russia, Australia, New Zealand, India and South Korea.

"Kang said the Korean Peninsula peace process has made little progress over the past year, but efforts toward the denuclearization of the peninsula, based on agreements between South and North Korea and between the North and the U.S., must continue," the ministry said in a press statement.

"For the faithful implementation of the agreements and the early resumption of dialogue, she called for support from the international community, including the EAS."

In response, other participants noted the importance of dialogue with the North for denuclearization and peace on the peninsula, but mentioned the need for the enforcement of U.N. Security Council sanctions against the Kim Jong-un regime.

The EAS meeting, along with other ASEAN-related gatherings, took place as the hegemonic rivalry between the U.S. and China has been intensifying. While the two powerhouses have urged South Korea to pick their respective side, it has remained neutral in the conflict because Washington is its longtime ally while Beijing is its largest trading partner.

At this time, Korea once again maintained "strategic ambiguity," with the foreign minister saying freedom of navigation and overflights in the South China Sea should be guaranteed and the issue needs to be resolved in a peaceful manner.

"Minister Kang mentioned that peace and stability in the South China Sea is crucial for regional prosperity," the ministry said.

Earlier in the day, Kang also attended a virtual meeting between ASEAN members and its three dialogue partners – South Korea, China and Japan – and stressed the need to boost multilateral cooperation to overcome health crises such as the COVID-19 pandemic.

"Kang noted that ASEAN Plus Three has effectively operated a multilateral cooperation regime at times of crises like the Asia financial crisis and SARS, and stressed the need for cooperation based on such past experiences when dealing with COVID-19 as well," her office said. ASEAN Plus Three is a forum of the ASEAN nations also including China, Japan and South Korea.

It was the first session in the series of ASEAN-related meetings slated to take place this week via videoconference due to the coronavirus that has disrupted in-person diplomacy. She subsequently took part in a South Korea-ASEAN foreign ministers' meeting.

https://www.koreatimes.co.kr/www/nation/2020/09/113_295807.html

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Middle East Monitor (London)

Official: Iran's Enriched Uranium Production at Pre-deal Levels

By MEM

Sept. 7, 2020

Iran now produces between 250 and 300 kilogrammes of enriched uranium per month; the same amount produced before the 2015 nuclear deal, a spokesman for the Atomic Energy Organisation of Iran (AEOI) said.

Behrouz Kamalvandi said in an interview with Iran's ISNA news agency that despite the political pressures and American sanctions, Tehran has no restrictions on the production of nuclear materials, research and development, and construction of nuclear power plants to generate electricity,

"Tehran currently produces 10 tonnes of yellowcake annually, while it used to produce 4 tonnes under the nuclear agreement," he added.

Remarking on the latest report by the International Atomic Energy Agency (IAEA), Kamalvandi said the report had met Iran's expectations, noting that the nuclear watchdog had visited one of the two agreed-upon sites, and would visit the other site later this month.

In response to the US unilaterally withdrawing from the 2015 nuclear deal and the reimposing sanctions previously lifted under the deal, Tehran returned to enriching uranium to 4.5 per cent purity which is 3.67 per cent above the limit set by the deal, but lower than the 20 per cent reached before the agreement.

<https://www.middleeastmonitor.com/20200907-official-irans-enriched-uranium-production-at-pre-deal-levels/>

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COMMENTARY

The Hill (Washington, D.C.)

The Great Debate over Russian Nuclear Doctrine

By Peter Pry

Sept. 6, 2020

The great debate among U.S. analysts over Russian nuclear doctrine, and how worrisome its threat may be, finally has been resolved — and the hawks win.

During the Cold War decades and afterwards, military “hawks” and “doves” argued over Russian thinking and planning for nuclear war.

The doves — usually liberals, anti-nuclear academics or State Department bureaucrats — argued that Russia views nuclear weapons just as we do. Doves said both Moscow and Washington understand nuclear weapons are instruments of last resort, so destructive as to be practically unusable and only for deterrence, not warfighting. Therefore, according to doves, the U.S. should not worry so much about Russian nuclear threats and refrain from building up nuclear weapons and strategic defenses, because this provokes costly, unnecessary, potentially dangerous arms-racing.

Hawks — usually conservatives, think tank academics or Defense Department bureaucrats — argued that Russia views nuclear weapons differently from us. Hawks said Russia sees nuclear weapons as just another instrument of warfare, does not have an uncrossable “bright line” between conventional and nuclear conflict, and might well launch a nuclear surprise attack. Therefore, according to hawks, the U.S. should engage in arms-racing to prevent Moscow from gaining any real or perceived numerical or technological advantage in nuclear weapons that could tempt Russian aggression.

Now the Congressional Research Service (CRS), which is supposed to be nonpartisan but has been on the dovish side of the debate, appears to have begrudgingly surrendered (without admitting it) to the hawks. The surrender is reflected in two new CRS reports by Andrew Bowen (“Russian Armed Forces: Military Doctrine and Strategy”) and Amy Woolf (“Russia’s Nuclear Weapons: Doctrine, Forces, and Modernization”).

Bowen sets up a hawk straw man so he can pretend to knock it down later, stating that “many analysts assert that Russia maintains an ‘escalate to de-escalate’ strategy, where Russia might threaten the use of nuclear weapons early in a crisis if it risked losing a conflict.” In fact, Russian nuclear doctrine provides for not merely threatening but actually using nuclear weapons early in a crisis or conflict — not just to avoid losing but to win from the outset through “shock and awe.”

Bowen then offers a “rebuttal” to the above, but it doesn’t sound very dovish: “Other analysts contend, however, that this explicit policy [‘escalate to de-escalate’] does not exist. They note that Russian military doctrine focuses on escalation management rather than thresholds for nuclear use and escalation control. Additionally, Russian doctrine gives policymakers flexibility in identifying the type and nature of its responses and does not exclude possible use of NSNW [non-strategic nuclear weapons]. However, damage would be applied progressively and in doses to demonstrate the potential for further punishment and provide incentives for settlement.”

Yet, Bowen’s description of Russian nuclear doctrine is perfectly consistent with the “escalate to de-escalate” strategy as one of Russia’s many possible nuclear warfighting options. His bottom-line:

“Accordingly, Russian military doctrine appears to utilize escalation management to control the growth of conflicts, deter outside actors, and support resolutions that are acceptable to Russia.”

In other words, translating from dovish to more hawkish lingo: Russian military doctrine seeks escalation dominance and use of nuclear weapons in any way necessary to achieve victory.

Of the original dovish view of Russian nuclear doctrine — that, even for Moscow, nuclear war is “unthinkable” — hardly a feather remains.

With the June publication of Russia’s “On the Fundamentals of the State Policy of the Russian Federation in the Field of Nuclear Deterrence,” and Moscow’s threat that it would view “the launch of any ballistic missile toward Russia as nuclear,” the doves’ goose is cooked.

Bowen is right that “Russia’s newly published nuclear doctrine notwithstanding, some ambiguous language and the secretive nature of the topic means that analysts continue to debate the true nature of strategic deterrence and the role of nuclear weapons in Russian military doctrine.” However, the great debate over Russian nuclear doctrine now appears to be more quibbling over semantics and nuances than real disagreement over substance. Hawks and doves will continue arguing vehemently, despite really agreeing on essentials, because our strategic culture, like everything else, is so polarized.

For the unadulterated view of Russian nuclear doctrine, read the Russians themselves and Dr. Mark Schneider’s “Russian Nuclear ‘De-Escalation’ of Future War” in the journal *Comparative Strategy* (March 25, 2019); “Russia’s Military Strategy and Doctrine” by Glen E. Howard and Matthew Czekaj (Jamestown Foundation, 2019); and Dr. Stephen Blank’s 2019 publication, “The Russian Military in Contemporary Perspective.”

For doves, the great debate never really was over Russian nuclear doctrine but about stopping U.S. nuclear-weapon modernization, deeply reducing nuclear arsenals and “banning the bomb.” Doves continue to see nuclear weapons — not Russia — as the real threat.

Doves may now agree that Russian nuclear doctrine is alarming — but do not expect to see a new consensus on modernizing the U.S. nuclear deterrent. Some doves already insist that the increasing nuclear threat from Russia, China and North Korea means it is more urgent than ever for the United States to lead toward “a world without nuclear weapons” by setting a good example.

Not too long ago, the House Armed Services Committee held hearings on abolishing U.S. nuclear bombers and ICBMs, and reducing ballistic missile submarines from 14 to 6.

Doves may yet get their way, after the 2020 elections.

Dr. Peter Vincent Pry was chief of staff of the Congressional EMP Commission and served on the staff of the House Armed Services Committee and at the CIA. He is the author of several books on weapons and warfare.

<https://thehill.com/opinion/national-security/514961-the-great-debate-over-russian-nuclear-doctrine>

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Arms Control Wonk

Stigmatizing Nuclear Threats

By Michael Krepon

Sept. 6, 2020

Verse of the week:

“Now hatred is by far the longest pleasure; men love in haste but they detest at leisure.” – Lord Byron

Lyric of the week:

You can climb a mountain

You can swim the sea

You can jump into the fire

But you’ll never be free

You can shake me up

Or I can break you down

Whoa-o-o-o-, whoa-o-o-o-

We can make each other happy

Or we can make each other happy – Harry Nilsson, “Jump into the Fire”

Arms control is built upon norms. Without norms there would be no norm breakers. Instead, bad behavior would threaten to become standard practice.

The most important norm is not using nuclear weapons in warfare. The norm of not testing nuclear weapons also matters greatly because it helps to stigmatize nuclear use. A third important norm is nonproliferation, which includes best practices for nuclear safety and security. A fourth, discussed in my last post, is respecting the territorial integrity and the sovereignty of other states. When this norm is broken, arms control is damaged. Arms control is revived out of need, not forgiveness.

I propose that we seek to add another “thou shalt not” to our list of norms — a norm against threatening to use nuclear weapons. If we could stigmatize nuclear threat making the way we have stigmatized nuclear testing, we’d be in a far better place.

Nuclear threats can be explicit, such as when forces that are integral to planning for nuclear weapons’ use are deployed to tense areas or their alert rates are increased to place an adversary on notice. Nuclear threats can also be inferential, rhetorical, thinly veiled, or some combination of the above.

The United States has threatened nuclear use far more than any other possessor. Barry Blechman, the Co-founder of Stimson, knows a thing or two about nuclear threat making. His book, *Force Without War: U.S. Armed Forces as a Political Instrument*, co-authored with Steve Kaplan, was published by Brookings in 1978. One of this book’s important conclusions was that the first fifteen years of the Cold War were the most threat laden. (The Cuban missile crisis took place thirteen years after the Soviet Union acquired nuclear weapons.)

Melanie Sisson, James Siebens and Barry have co-edited another important book updating these findings. During the period between 1970 and 1990, Washington issued twice as many nuclear threats as Moscow. After the Cold war ended, nuclear threat making dropped precipitously, but

didn't end. Washington relied instead on conventional military tools and operations along with diplomatic and economic levers.

Patterns emerge if we look beyond the Cold War competition to friction between other pairings of nuclear-armed states. Nuclear threat making typically begins soon after a state with serious security concerns acquires nuclear weapons. The same impulses that lead states to acquire nuclear weapons prompt severe crises and clashes over sensitive locales and disputed borders.

For the United States and the Soviet Union, the biggest flashpoints were Berlin and Cuba. China and the Soviet Union fought a limited war over a disputed border in 1969, five years after Beijing first tested the Bomb. India and Pakistan didn't wait that long. They experienced a limited war over the disputed state of Kashmir one year after both brought their bombs out of the basement and tested nuclear devices in 1998. They nearly went to war again in 2000 and 2001, after militants based in Pakistan attacked the Indian Parliament building.

Beijing has issued far fewer threats with nuclear overtones than Washington and Moscow. The greatest incidence of Chinese nuclear threat-making has been over the status of Taiwan. Nuclear threat making has so far been notably absent during border clashes between China and India.

Nuclear threats have not changed outcomes when use could be countered in kind. Instead, the outcome of crises and limited wars have been determined by other military capabilities around the location of confrontation, the competing stakes in dispute, and the presumed costs and projected outcomes of staying in the fight. Time and again, the leverage that nuclear weapons were presumed to provide has been more apparent than real.

Paradoxically, nuclear threat making is even less useful when possessors face off against abstainers. Unlike 1945, when the United States detonated two nuclear weapons over Japanese cities to end a global war with over 50 million fatalities as soon as possible, another battlefield use of nuclear weapons against an abstainer would prompt global condemnation, forever stigmatizing the user.

As tensions increase between the United States and Russia, the United States and China, China and India, and India and Pakistan, the incidence of nuclear threat making might well increase. Dangerous military practices are on the rise and none of the contestants have invested in effective diplomacy to diminish ongoing disputes. Because of these trend lines, and because of the evident non-utility of nuclear threat making, it's worth trying to foster a norm against this practice.

We have limited means of doing so. Nuclear threat making will continue, as disadvantaged states are still likely to vocalize these threats, and as Washington and Moscow never got out of the habit of doing so, even after three-quarters of a century of non-battlefield use. As long as leaders believe that threats are useful in crises, they will issue them.

How, then, to proceed? I propose that we make the conscious and collective effort to stigmatize nuclear threats whenever they occur. We can make the case against the ineffectiveness of nuclear threat making, but our strongest arguments are on normative and ethical grounds.

Any battlefield use of nuclear weapons is likely to result in additional use. Escalation control will be extremely difficult. Even minimal nuclear use, depending on the targets, yields, and weather conditions, could grossly violate the laws of warfare. Uncontrolled escalation would constitute a crime against humanity. Therefore, we argue that responsible leaders and states that possess nuclear weapons do not threaten their use.

We are obliged to keep hammering away whenever any leader of any state threatens the use of nuclear weapons. The norm of non-battlefield use is the most important norm we've got. If we lose this norm, we risk losing everything that matters.

So let's stigmatize nuclear threat making, just as we have stigmatized nuclear testing. Our goal can be to reduce and eventually confine the incidence of nuclear threat making to outliers. Let's make a habit of equating threats of nuclear weapons' use with threatening crimes against humanity.

<https://www.armscontrolwonk.com/archive/1209966/stigmatizing-nuclear-threats/>

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Korea Times (Seoul, S. Korea)

Risk of Nuclear War and N. Korea

By Tong Kim

Sept. 7, 2020

With the continuing nuclear and missile development by China and North Korea, amid a prolonged stalemate on nuclear talks with the North, the existential risk of a nuclear conflict — either between China and the U.S. or between North Korea and the U.S. — is lingering, if not rising, in Northeast Asia.

For a quarter of a century, the United States has tried and failed different forms and approaches to denuclearizing North Korea. It failed with the 1994 Agreed Framework, the 2004 joint statement of the 6-party talks, the 2012 Leap Day agreement, and the 2018 Singapore summit agreement.

Did neither the Non-Proliferation Treaty (NPT), which Pyongyang joined in 1986 and withdrew from it in 2003, nor well-intended arms reduction treaties help prevent North Korea's breakout as a de facto nuclear state?

The NPT has three goals: non-proliferation, nuclear disarmament, and the peaceful use of nuclear energy. Under the NPT, non-nuclear-weapon states pledge not to acquire or manufacture nuclear weapons, and the five recognized nuclear states — the U.S., Russia, China, Britain, and France — agree not to transfer nuclear weapons to or assist non-nuclear states in developing a nuclear weapon.

The treaty also encourages good faith negotiations for total nuclear disarmament. However, no such negotiations have ever been held. Interestingly, President Obama was awarded the Nobel Peace Prize for making a political statement in Prague in 2009 that he would work to build a world free of nuclear weapons.

On the other hand, the termination of arms control treaties can have a negative impact. Yet, the U.S. withdrew from the Anti-Ballistic Missile Treaty (ABM) in 2002, and from the Intermediate Nuclear Force (INF) Treaty in February 2019, which banned all land-based mid and short-range missiles of 1,000 to 5,500 kilometers in range, and their missile launchers.

The New START that limits deployed nuclear weapons to 1,550 will probably be terminated by expiration next February. Both parties — the U.S. and Russia — appear to have little interest in renegotiating an extension of the treaty. Without a new arms control mechanism in place, it appears that China, Russia, North Korea and the U.S. will be heading for an accelerated nuclear arms race.

The Trump administration has revealed some alarming signals in its 2018 Nuclear Posture Review (NPR). Under the NPR, the U.S., while reserving the option of first-use of nuclear weapons, will modernize and enhance its nuclear capabilities. It will develop a low-yield nuclear warhead as a deterrent to a limited nuclear conflict. It also will sustain and replace the TRIAD — a three-leg delivery system of land-based ICBMs, heavy bombers, and submarine launchers — with new advanced systems.

The U.S. believes that its nuclear arsenal serves as a deterrence to nuclear and other types of war. It also believes its extended nuclear deterrence to its allies and partners has a non-proliferation effect, since their reliance on U.S. commitment should preempt the development of their own nuclear weapons.

While the U.S. says it will support non-proliferation and arms reduction efforts, it will not ratify the Comprehensive Test Ban Treaty (CTBT), which is not yet in force due to the rejection by some states including the U.S., China, and North Korea. However, the U.S. will keep a moratorium on testing and asks others to do the same.

Currently, North Korea is believed to possess 20 to 60 warheads and demonstrated delivery systems for short to long ranges. China's arsenal ranges from 200 to 300 nuclear weapons according to varying assessments. China has announced a no-first-use policy, with its credibility in question.

Nevertheless, if the U.S. also declares a no-first-use policy, it will contribute to stabilizing the turbulent security environment in the region. Will this undermine the deterrent effect of the U.S. nuclear arsenal?

A denuclearized Korean Peninsula can serve as a buffer between the U.S. and China, minimizing the chance for an apocalyptic nuclear clash in Northeast Asia, if it is incorporated in the framework of a Nuclear Weapon Free Zone (NWFZ) that will include the two Koreas and Japan.

A key to a successful NWFZ is a protocol that legally assures the security of the Zone by the recognized nuclear weapons states against external nuclear threats. In the 1980's, the North proposed establishment of an NWFZ on and around the peninsula.

A new denuclearization approach can borrow a positive input from the concept of an NWFZ, in addition to pursuing a familiar approach to three tasks: normalization; a peace regime; and a phased, reciprocal process to complete denuclearization with the conditions of lifting sanctions, with snap-back measures. It is time to try something different.

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http://www.koreatimes.co.kr/www/opinion/2020/09/167_295556.html

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Brookings (Washington, D.C.)

What Donald Trump Should Have Done with North Korea — and What the Next President Should Do

By Michael E. O'Hanlon

Sept. 3, 2020

Editor's Note: Writing in The National Interest, Michael O'Hanlon argues that "there is a way ahead. Rather than pursue complete elimination of all of North Korea's nuclear capabilities, the Trump administration would aim for a more modest trade as at least an interim step. It would require North Korea to verifiably dismantle all capabilities it possesses to make more bombs in exchange for a partial lifting of the sanctions which have driven North Korea's economy into the tank."

President Donald Trump recklessly risked war over North Korea in 2017, but then appeared to make relatively good use of that scare by starting a negotiation process with Kim Jong-un the following two years. Unfortunately, the momentum is now gone, and we are back to almost where we started three and a half years ago. At least North Korea is not testing nuclear weapons or long-range missiles right now, but it could resume those tests—and it has never stopped building more nukes. The next president, Biden or a reelected Trump, needs to break out of this logjam.

There is a way ahead. Rather than pursue complete elimination of all of North Korea's nuclear capabilities, the Trump administration would aim for a more modest trade as at least an interim step. It would require North Korea to verifiably dismantle all capabilities it possesses to make more bombs in exchange for a partial lifting of the sanctions which have driven North Korea's economy into the tank.

The terms of such an agreement would follow logically from the February 2019 Trump-Kim summit in Hanoi, where the North offered to dismantle some of its nuclear production capability in exchange for a lifting of all sanctions, and where President Trump then walked. Washington's new proposal would simply toughen and improve the terms of this kind of trade, requiring the dismantlement of all plutonium and enriched uranium infrastructure in exchange for a lifting of some of the sanctions.

Provided that verification is good and that some sanctions are retained even after such an agreement was struck, this would be a smart deal. It would not be perfect and would not achieve the complete denuclearization of North Korea that Trump initially insisted upon. But it would identify, and pursue, the intersection of what is realistic with what is desirable. It would reduce the risks of war and limit the damage done by nuclear proliferation in Northeast Asia.

North Korea has an estimated 20 to 60 nuclear bombs today, and is still making more as best we can tell. It views those weapons as the proud legacy of Kim's father and grandfather, and the ultimate insurance that the younger Kim will not suffer the fate of Saddam Hussein or Muammar Qaddafi, both of whom wound up dead after fighting the United States without nuclear weapons. It is hard to see North Korea giving up those bombs even if sanctions remain in place indefinitely, though admittedly we cannot be sure. North Koreans have talked about being willing to eat grass to keep their nuclear arsenal. Kim and his cronies will always have their caviar and cognac, but there can be little doubt that the North Korean leader would be willing to see his own people continue to suffer as long as he keeps hold of his ultimate guarantee of political and personal survival. Striving for complete North Korean denuclearization is a bridge too far.

But perhaps Kim has concluded that 20 to 60 (or 70, or 80!) bombs are enough. And perhaps he is also willing to make permanent his moratorium on testing nuclear weapons and long-range missiles, provided the United States and South Korea cap the size of their military exercises.

We can live with such a deal, too. If North Korea can be persuaded to dismantle its nuclear infrastructure, its future arsenal will be forever capped at or below its current size. The next president would be wise not to boast too much about a deal that left one of the world's worst dictators in possession of nuclear bombs and allowed it to resume trade and investment with other nations. But by giving North Korea a stake in peace, and a stable Northeast Asia, it would on balance probably reduce the risks of war.

Under such a deal, U.N. sanctions that have been imposed in recent years would presumably first be suspended, then lifted. It is these sanctions that really hurt North Korea because they prevent its normal economic dealings with China and South Korea in particular, as well as with Russia and some Southeast Asian nations. As a result of these sanctions, imposed largely in 2016 and 2017,

North Korea's trade appears to have shrunk by more than half despite some cheating and sanctions evasion.

But most U.S. sanctions that have been imposed on North Korea over the decades should remain in effect even after the U.N. sanctions are gone. Most American aid, trade, investment, and interaction should still be banned under such an accord. So should assistance from organizations like the World Bank, where the United States has a major influence. North Korea would not be formally recognized as a nuclear-weapons state. Any peace treaty and any U.S. diplomatic presence would be viewed as matter-of-fact mechanisms to enhance future communication, not as great accomplishments to celebrate. Only if and when North Korea gives up all its bombs, scales back its threatening conventional and chemical weapons, and starts to open up its gulag-style prisons would truly normal relations become possible with America. Only then would the U.S. sanctions be lifted. That day may not arrive for decades, admittedly. But in the meantime, we will have capped North Korea's nuclear arsenal and ambitions and lowered the risks of war.

<https://www.brookings.edu/blog/order-from-chaos/2020/09/03/what-donald-trump-should-have-done-with-north-korea-and-what-the-next-president-should-do/>

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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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