



DATE: July 31, 2017

SUBJECT: What a North Korean Ballistic Missile Threat Means for the US Missile Defense System

MAIN POINTS

- It has become an urgent priority for the US to enhance its ballistic missile defense system (BMDS), given North Korea's steady and speedy developments in nuclear weapons capabilities.
- There is bipartisan support for BMDS improvements and for the National Defense Authorization Act (NDAA).
- More sanctions can be placed on North Korea.
- Space-based sensors are a key element to better integrating the systems within the US BDMS.
- The option for left-of-launch offense presents both great opportunities and risks.

Audio available at: https://www.youtube.com/watch?v=hk_5Zomf0to as of July 27, 2017.

EVENT OVERVIEW

Date: July 26, 2017

Time: 9:00 a.m. – 10:30 a.m.

Location: The Heritage Foundation, 214 Massachusetts Ave NE, Washington, DC 20002

Attendees

- **Senator Dan Sullivan (R-AK)**, United States Senator
- **Thomas Spoehr, Host**, Director, Center for National Security, The Heritage Foundation
- **Brigadier General Kenneth Todorov (ret.)**, Former Deputy Director of the Missile Defense Agency (MDA)
- **Bruce Klingner**, Senior Research Fellow, Northeast Asia, The Heritage Foundation
- **Austin Long**, Senior Political Scientist, RAND
- **Michaela Dodge, Moderator**, Senior Policy Analyst, Defense and Strategic Policy, The Heritage Foundation

EVENT SUMMARY

Part I: Keynote Remarks by Senator Dan Sullivan

Senator Sullivan, Senator Joni Ernst, and Senator Cory Gardner visited South Korea last year on the interest of US national security and THAAD missile defense. Their most interesting meeting was with a recent high-level North Korean defector to whom they posed two questions. 1) Is there a budding group of North Koreans who are resisting the regime? What would happen if a young North Korean man goes to Pyongyang Square and protests? 2) If the US, China, and Japan all guarantee regime security in exchange for North Korea giving up ICBM and testing capability, would North Korea take the deal? The man simply answered 1) that man does not exist and 2) there is no security without nuclear weapons and ICBMs. Senator Sullivan confirmed how this testimony reveals a very difficult challenge to overcome cultural nuances and differing mindsets.

Ultimately, North Korea is testing steadily and it is no longer a question of if but when. Senator Sullivan's goal for our military leaders and Department of Defense is to be ready when the times comes. Senator Sullivan raised the contrary argument that doubters of missile defense will resort to the doctrine of mutually assured destruction (as US follows Russia and China), but he reasoned that this doctrine assumes a rational actor and North Korea cannot be considered so given Kim's recent assassination of his half-brother in an airport. Instead, Senator Sullivan strongly advocated bolstering US missile defense, which would send the message that the US is able to shoot North Korean missiles down and massively retaliate should there ever be a direct threat. He then shared how Alaska plays a key role and constitutes three pillars of American military power:

- 1) Alaska is a hub of air combat power for the Asia Pacific and the Arctic. Soon, Alaska will be the only place in the world with over 100 combat-coated fifth-generation fighters (F-35s and F-22s).
- 2) Alaska is a strategic platform for expeditionary forces to be launched at short notice. Currently, the two active Army brigades in Alaska can get anywhere in the Northern Hemisphere, including the Korean peninsula, within 7-8 hours. The 425, the only airborne brigade team in the Asia Pacific, is also the only strategic reserve for any contingency on the Korean peninsula.
- 3) Alaska is the cornerstone of American missile defense. Most ground-based systems of layered missile defense are primarily based in Alaska, namely Fort Greely, Clear Air Force Station, and Ericsson Air Station.

Within the Senate, Senator Sullivan has been pushing a bill called, "Advancing America's Missile Defense System Act 2017," in order to drive momentum and urgency to upgrade the current missile defense system, rather than waiting on the Pentagon's missile defense review due at the end of the year. The bill now serves as the base of the National Defense Authorization Act (NDAA), highlights of which include:

- 1) Increase US ground-based missile interceptors by 28, 14 new silos at Fort Greely and 14 ready to be used for additional testing.
- 2) Enact a space-based sensor architecture to support missile defense throughout the world as opposed to only in the homeland, to enable an “unblinking eye.”
- 3) Accelerate deployment of new technologies, particularly advanced kill vehicles.
- 4) Test and view failed tests as a positive sign of development.
- 5) Authorize funding for all systems: THAAD, GMB, AEGIS.

There is a similar House-led bill by Alaskan Congressman Don Young, the majority of which was also included in the NDAA markup. Senator Sullivan is confident that Congress stands a chance to enhance missile defense which has now become a bipartisan issue. He anticipates the final NDAA passage to include robust missile defense elements.

Part II: Expert Panel

Bruce Klingner provided a brief overview of different North Korean threats and future US options. There was a potential ICBM test this weekend and there was an ICBM threat on July 4. As has been the pattern, North Korea recently fired into an unusually high trajectory so as not to fly over Japan, maybe to test an RV re-entry vehicle. Had it been on a normal trajectory, it could have gone 7,000 or 9,000 kilometers, which would certainly put all of Alaska in range. Media has shown mixed positions from intense worry to casual dismissal. Ultimately, there is continual surprise in the development of North Korean missiles. North Korea has enjoyed high success, with missiles already deployed and failed ones underway. In 1999, the CIA anticipated that North Korea would have the capability of sending nuclear warheads to the US by 2015; hence the current threat is not a surprise. In addition to ICBMs, North Korea is also working on two different IRBMs (Musudan and Hwasong-12) that threaten Guam, a key node to US defense in the Pacific. Both tested successfully last year. Additionally, North Korea has had successful tests of submarine-launched ballistic missiles (SLBM) and medium-ranged ballistic missiles (MRBM) in 2016. SLBMs are concerning because they are a mobile launcher that the South Korean navy currently does not have direct defense against. Klingner emphasized that the No-dong MRBM is already nuclear capable and puts South Korea and Japan under present nuclear threat. Klingner presented three pathways for the US:

- 1) Pre-emptive military strike on North Korea to prevent them from completing the development of the ICBM – Klingner had previously disagreed with this notion in his paper, [“Save Preemption for Imminent North Korean Attack.”](#) Intercepting an enemy missile midair or taking it out on a launch stand (when it is not clear whether it will hit U.S. sovereign or ally soil) is needlessly provocative and institutes high risks for an all-out war with another nuclear power.
- 2) Engagement, been there done that. North Korea has gone through eight international agreements either promising never to build nuclear weapons or to give them up. South Korea has had 240 inter-Korean agreements with North Korea to moderate their behavior with induced political and economic reform, all of which failed. Moon Jae-in has been rebuffed several times. Last month, Klingner met with North Korean officials in Europe and they

expressed that “denuclearization is off the table.” North Korea has no inclination to engage with the US or South Korea.

- 3) Increase pressure on North Korea via sanctions and secondary sanctions to Chinese banks. President Obama incorrectly stated that North Korea was the most heavily sanctioned cutoff nation on Earth. Last year was the first time the US cumulatively sanctioned as many North Korea entities as Zimbabwe entities.

Brigadier General Kenneth Todorov (Ret.) provided an operational evaluation of the effectiveness of the US ballistic missile defense system (BMDS), with suggestions to move US missile defense forward. He shared a story from when he used to oversee the day-to-day operations of BMDS. There was a lot of predictive intelligence, e.g. the launch of Taepodong 2. They had months of warning that the event was going to take place. Both Brig. Gen. Todorov and his then-boss, four-star Commander of NORAD, felt confident that BMDS would operate smoothly, even though the missile was anticipated not to be a direct threat to the US homeland. He also recalled the frustration in the Command Center as it anxiously waited for information updates on the missile launch. Additionally, there was a number of outages in various parts of the system: a couple of radars were in maintenance, a sea radar had to be re-positioned, and even Navy boats had to be moved out because of a stormy sea state. Brig. Gen. Todorov explained that beyond interceptors and kill vehicles, BMDS is a system of systems, a whole array of sensors and radars, both terrestrial and sea-based, that work together to paint a picture for the operational warfighter; so the system cannot work as effectively if one of the radars malfunctions. Considering increased threats in quantity, quality, and diversity, Brig. Gen. Todorov advocated three points for the BMDS to stay ahead:

- 1) Increase the capacity, reliability, and efficiency of existing BMDS by adding more interceptors, long-range discriminating radars, additional testing, and digital enhancement such as discrimination algorithms.
- 2) Think innovatively beyond the primary hit-to-kill intent – the proposed space-based tracking and discrimination capabilities can be used beyond missile defense purposes. New technology directed-energy may also be explored.
- 3) BMDS is a mix of offense and defense, not just a big shield. It is not sustainable nor strategic to dismiss them as a deterrent to buy our way out of the problem. They must be considered within the context of other US capabilities.

Austin Long shared his perspective on US offense capability, particularly on left-of-launch, a preemptive effort to defeat missiles before they leave the ground. In addition to cyber and other electronic warfare Brig. Gen. Todorov mentioned, left-of-launch includes novel forms of surveillance and reconnaissance that enable high fidelity. Mobile targets would be in real time so the use of time-dependent satellite imagery would be reduced. The origin of left-of-launch could be traced to wars in Iraq and Afghanistan from “left-of-boom” in an effort to prevent detonation of improvised explosive devices (IEDs). There was an even earlier effort called the “outer air battle,” which was to prevent carrier strike groups from being saturated by Soviet anti-ship cruise missiles. Rather than trying to shoot down arrows, also known as cruise missiles in flight, they push out the range at which the Navy could engage Soviet naval bombers and shoot them down before they could launch. This plan was called “shooting the archer, not the arrows.” The problem is that both examples featured war, but left-of-launch

has to take place in peacetime. Given the type of sensors aforementioned or the kind of access necessary for cyber operations, left-of-launch operations must take place on North Korean territory. The possibility of escalation from the discovery of such activity is considerable.

Pursuing left-of-launch could potentially decrease threat. It is easier to interfere with an adversary's command and control than to prevent the launch. There are many opportunities to cause interference considering the entire missile launch process, so even a minor mistake could cause a weapon to fail. You can turn off the transporter erector launcher if it is mobile, you can prevent the silo cap from opening, etc. If you can interfere with the enemy's command and control of the whole set of processes, you can at least temporarily freeze missiles.

Downsides include: A) the operation has to be kept top secret and hence requires aggressive peacetime circumstances. If North Korea knows that we are tracking their devices, they will counteract and make a case for escalation; B) There are risks in using intelligence to introduce faulty components into the North Korean supply chain; C) It is difficult to test these missile defense interceptors under realistic conditions, except in a moment of crisis, so the confidence level is never going to be quite as robust. There is also a stability issue – if North Korea believes that there is no security without nuclear weapons and sees a huge US military alliance campaign against it, Kim might react as if war was imminent, hence leading to a crisis.

Q&A

Q: First, the Western mind seems to think that all options are exhausted, but I think there is still a ray of hope in talking with Kim Jong-un. His youth is an advantage. Second, I think we should stop depending on China and or someone else for our own intention. Can you comment on these remarks?

A (Senator Sullivan): Trump invited all 100 US senators to brief on his administration's policy on North Korea two months ago. The entire national security team from the Trump administration was there to present strategy. The takeaway from that meeting is that the Senate must work with the executive branch to reinforce strategy. Diplomacy needs to be backed by other options. I think one significant reason why diplomacy has yet to see success is that by the end of the Obama administration, nobody believed that it could be backed by force. This administration seeks to explore force in conjunction with diplomacy to make the latter more effective. I support the administration's efforts to have China play a key role, though that China does not take its leverage over North Korea seriously complicates the problem.

Q: China would like to solve the THAAD crisis through cooperation. It seems like the biggest challenge for the Chinese government is to persuade the public in policy shift toward North Korea. How would the US persuade the Chinese government and military that Chinese security will not be threatened [by THAAD]?

A (Senator Sullivan): This is a good question and a clear area of disagreement. I believe that a lot of disagreement on THAAD has been driven by the Chinese government. I feel like Chinese leadership

at the highest level knows that THAAD is not about China. Kim is an unstable dictator who China is also concerned about. It is not just citizens of our key allies that we are trying to protect, but also our own troops in the region. The US has given a consistent message. The THAAD deployment and the AEGIS system have never been intended to target China. They are meant to protect our troops and allies in the region and I think that China should accept our intention.

Q: There has been a lot of talk to put interceptors and high-power lasers in space. Do you think it is time to start seriously considering this type of deployment or should we just focus on the sensor layer?

A (Senator Sullivan): My focus is on the sensor layer, which will be costly. On the good side, costs are coming down for the commercial launch of space sensors. One pushback is that space-based [sensor] is too expensive, but given the threat, this is an insurance policy that most Americans would gladly accept. When technology on some of the issues you mentioned is not ready, it might be better to focus solely on space-based sensor but not beyond.

Q: Addressing left-of-launch, David Sanger in the *New York Times* suggested that methods have already been carried out against some North Korean missile tests resulting in high failure for some missile types. Can you comment?

A (Long): I can't comment with any accuracy on claims in the *Times*, but I will say that they highlight one tricky things about testing capabilities, which if in place, may be disrupted. However, learning about tests does not just involve North Korean industrial failure. North Koreans could learn how from our tests and if they do, they might neutralize such capabilities, so the real question is when should we use them. If we do during peacetime, North Koreans will counteract. If we wait until wartime, we risk inadequate preparation.

Q: I'm curious about civilians in Alaska right now. In light of military build up, are civilians living in fear and will there be any plans to evacuate?

A (Klingner): I'm not sure whether they're hunkering down Alaska, but articles this week feature emergency drills in Hawaii. But the threat is not just about Alaska and Hawaii. Their capability is much greater and is already reaching CONUS. With their Taepodong and Eunha, they may already reach the US. We do not know where they are on the development path but we certainly know what path they are on. On a spectrum from A to Z, we do not know whether they are at Y or Z, but we do know that the latter is their objective, so the threat is clearly not limited to Alaska or Hawaii.

Q: Can each panel member pick one initiative to enhance the robustness of the US missile defense as it relates to North Korea? Apart from radars in Hawaii, what do you think are key pieces to be plugged in order to enhance the system in a meaningful way?

A (Brig. Gen. Todorov): I would say #1: space-based discrimination and tracking.

Q: Do you think part of the problem is that our defense system is modeled after Cold War dynamics where we have rational states with nuclear weapons, whereas North Korea is not rational?

A (Klingner): I disagree with the oft-repeated media portrayal that Kim Jong-un is crazy like his father. He looks like a villain out of an Austin Powers movie, but he is rational. Portraying him in a distorted light is dangerous in two ways: 1) it downplays the real threat of nuclear weapons; and 2) a lot of the new advocacy for preventative attack is based on a disconnect in which people want to attack him because he is irrational, but then assume that he will respond rationally. At the CIA, we did a lengthy study of Kim Jong-un and Kim Jong-il with a psychologist and psychiatrist, both of whom confirmed that the former is not crazy. One benefit of missile defense is that it lengthens the fuse of war, THAAD, and other programs alike. The better the systems, the more protected South Korea would be.

Q: Is nuclear counterforce making it harder to hide or harden nuclear arsenal, due to precision munitions, remote sensors, or left-of-launch tactics? (Long question about ease of counterforce operations against North Korean targets).

A (Long): I alluded to a lot of new technologies and potential capabilities. If we can destroy weapons on the ground and swap command/control, it will make the missile defense challenge much easier. The problem is the reverse of what Bruce said. If the adversary goes second, it will enable us to launch first thus making our missile defense effective. But our adversary has a real incentive to strike early. Even though it currently does not have the ability to do so, the system gives them more pressure but also makes the crisis more acute. Hopefully people will realize this complex problem and avoid such crisis, but even in a situation where both sides attempt to avoid confrontation, tension could still escalate.

Report by Elizabeth Yang, Research Intern