TRANSCRIPT
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“The North Korean Missile Threat: Expert Roundtable”

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CSIS CENTER FOR STRATEGIC & INTERNATIONAL STUDIES
Good morning, everyone, or good evening depending on where you are. Welcome to CSIS. My name is Victor Cha. I am the senior vice president and Korea Chair at CSIS, and vice dean and professor at Georgetown.

And we’re here this morning here in D.C. for a discussion about the North Korean missile threat. I think for many folks the focus has been on Ukraine. But while people have been, you know, understandably focused on that issue, there have been some major developments with regard to North Korea and their WMD programs, and that’s what we wanted to discuss today.

The North Korean regime was fairly quiet in the first year of the Biden administration, doing some but not a large amount of missile demonstrations. This ran contrary to our own data, which showed that North Korea often does do a lot of provocations/missile demonstrations in an election year in the United States or in an election year in Korea – in South Korea. And there could be various reasons for that having to do with COVID, having to do with waiting to see whether the Biden administration in its first year in office would unilaterally lift sanctions. But we clearly see that from 2022, almost like clockwork, the North Korean regime has increased the pace of testing and demonstrated some new capabilities and advancements with that testing, particularly on March 16th when they tested what many believe was the Hwasong-17 or an intercontinental ballistic missile. I think the goal of this capability or the goal of these demonstrations is eventually to have a survivable nuclear-weapons delivery system that can target the homeland of the United States, but we’ll have a discussion about that and many other issues this morning.

So we’ve put together an incredible panel of experts to talk about different angles with regard to this issue, and let me introduce them to you very briefly right now.

So we have Ankit Panda who has joined us. He is Stanton Senior Fellow in the Nuclear Policy Program at the Carnegie Endowment for International Peace. He is the author of “Kim Jong Un and the Bomb: Survival and Deterrence in North Korea,” published by Oxford University Press in 2020. Thank you for joining us, Ankit.

Also joining us is Markus Garlauskas. He is a nonresident senior fellow with the Scowcroft Center for Strategy and Security’s Asia Security Initiative. He’s had a long career in the U.S. government, and his last position was in the – appointed to the Senior National Intelligence Service as the national intelligence officer, or NIO, for North Korea on the National Intelligence Council from June 2014 to June 2020. So Markus was there for the year of “fire and fury” and many other things that happened with North Korea.
Also joining us is Joe Bermudez. Joe Bermudez is the senior imagery analyst at CSIS, well-known to many of you because of the work that he’s done on CSIS’s project called Undeclared North Korea, which are very detailed imagery analyses of North Korea’s 20 or so undeclared missile bases arrayed up the – up the peninsula.

And then batting cleanup, if you will, is our good friend Sue Terry, Dr. Sue Terry – Sue Mi Terry, who is director of the Hyundai Motor-Korea Foundation Center for Korean History and Public Policy, formerly at CSIS as a senior fellow. And also, her – in government she served on the National Security Council as director for Korea, Japan, and Oceanic affairs, and before that she was deputy NIO for East Asia at the National Intelligence Council.

So really, a great group of people that we have here with us this morning. Sorry for all the shuffling of papers.

But what I thought we’d do is start with Ankit, if we could. And, Ankit, if you could talk a little bit from a technical perspective about what you think that North Korea is seeking to achieve, demonstrate, and test with these latest ICBM and ICBM component launches, what do you think that – what have we seen in terms of advances in their capabilities? What are they trying to get to? Like, what, in the end, are they trying to accomplish? And what are some of the potential obstacles?

Ankit Panda: Well, Victor, thank you so much for having me today and thank you to CSIS for putting this panel together. The timing could not be better, even though we planned this before the latest ICBM launch.

So I think you’re right, Victor, that they are looking for a more survivable, credible threat against the U.S. homeland. That’s been their goal for a long time. It was the inaugural test of the Hwasong-15, which was until the initial test of the Hwasong-17, which appeared to have failed, the largest ICBM ever flight-tested by North Korea. It was after that, in November 2017, that Kim Jong-un felt confident enough to declare his deterrent complete. Of course, he wasn’t being literal: The North Koreans have continued since then to qualitatively refine their capabilities, building better missiles, more capable missiles, more precise missiles, missiles more capable of evading missile defenses. And they’ve been building more missiles and more warheads. So what we’ve been seeing is a quantitative and qualitative expansion process in North Korea.

With regard to their ICBM program, I think the place to begin is to look at the remarks that Kim Jong-un delivered on the fourth and fifth day of the 8th Party Congress of the Workers Party of Korea in January 2021. This was, in my memory, the most detailed speech I recall by any North Korean leader on military modernization objectives. He was remarkably technical and
detailed. He outlined precise objectives for the Academy of Defense Science that were followed up on credibly, things like long-range cruise missiles and hypersonic weapons for instance. But when it came to ICBMs, he really outlined three objectives: multiple reentry vehicles – i.e., putting multiple warheads on a single missile; longer-range ICBMs – he outlined a need for a 15,000-kilometer capability, which is not something that we believe the Hwasong-15, at least, could offer; and finally, solid-propellant ICBMs – ICBMs that would be much more responsive in a crisis, shortening the window that the United States and South Korea might have to preempt these systems before they might be able to launch.

And so, with the return to testing, I think we're about to see many of these capabilities shown off. The Hwasong-17, which is not only the largest missile ever built in North Korea but it is, in fact, the largest liquid-propellant missile ever built and deployed on a road-mobile launcher anywhere in the world in history, is just an impractically large missile. And so a missile of this size can only be good for carrying multiple warheads, penetration aids to cope with long-range missile defenses. I think the North Koreans are really thinking about expanding the threat to the U.S. homeland.

The other significant thing is, you know, we focus a lot on the missiles, but actually what's remarkably significant about what they've done with the Hwasong-17 – and we actually knew this as early as October 2020, when this missile system first made an appearance at a military parade in Pyongyang – was that they appear to now be indigenously designing large launch vehicles for ICBMs. And for the longest time, this had been a bottleneck for their program. Their survivability, in particular for their ICBM force, I think will very much depend on the number of launchers that they're about to build.

So these strike me as some of the major technical benchmarks for the moment. I do think multiple reentry vehicles would be a remarkably negative development for U.S. security interest, given the arithmetic with missile defense. We have a limited number of missile defense interceptors that are designed to cope with North Korean ICBMs, and multiple warheads would significantly increase the threat to the U.S. homeland. Thanks.

Dr. Cha: Great. Thanks.

Could I just ask you just one – you said that the Hwasong-17 test failed. Can you say a little bit more about that?

Mr. Panda: Sure. So on March 16th the North Koreans launched something very large. I was actually, in my capacity as a contributor for NK News, able to view an image that was taken by a source in Pyongyang of the failure, and in that image we saw telltale signs of a large liquid-propellant missile’s failing over
Pyongyang – orange-red smoke, for instance, typical of the oxidizer used in these kinds of missiles. Add to that the fact that before the North Koreans released their state media report after the March 24th ICBM launch, which was successful, U.S. and South Korean intelligence appeared to have told reporters that they had assessed this to be a modified Hwasong-15. And so what appears to have happened is that the North Koreans intended to inaugurate the Hwasong-15 with an initial launch on March 16th. That launch appeared to have failed over Pyongyang. It was launched from Sunan International Airport. On March 24th, they followed up with a modified Hwasong-15 launch, perhaps with a lighter payload to extend the range to make it look like it might have been a Hwasong-17, and then they simply used the images of the pre-launch footage of Kim Jong-un inspecting the missile, which was a Hwasong-17, on March 16th to flesh out their state media report.

So that appears to be the state of play right now. There’s been open-source analyses done looking at the angle of the sun on the day of the footage shared by North Korea, which makes quite apparent that it was not a morning launch as was the case on March 24th. And so, putting all of this evidence together, I think we have a pretty good circumstantial case to make the assessment that the North Koreans did test a Hwasong-17 that failed and then followed it up with probably a Hwasong-15 that succeeded.

Dr. Cha: Great. Interesting. Thanks. Thanks very much.

So could I go to Markus next? And, Markus, could you talk from a former IC perspective about – you know, as Ankit said, we’re seeing advances in their capabilities. And so can you talk, to the extent you can, from a former IC perspective about the sources of these advances? I mean, they seem to be making steady progress in terms of their missile technology. You know, how are they able to do that? And, like, where are they getting help from? You know, anything that you could say about that?

Markus Garlauskas: So, of course, Victor, these are going to be my personal views as a former official. I really appreciate this opportunity to be on this great panel and the effort that’s gone into preparing this. Thanks for the invite.

So I think this is a really important question. It’s one that I see a lot of misconceptions on over time. And particularly, in 2017, the last time North Korea had a surge in testing and had some unexpected successes or at least successes that weren’t expected by some, there was this – rumors and kind of this innuendo, you know, theories that North Korea had procured major components like engines from overseas and that’s how they were able to make these advances. And those were thoroughly debunked at the time, but these sorts of things recur over and over again.
The nature of the foreign assistance that the program receives and has received is actually quite different. When you go back to the history of the program, in the 1960s through the 1980s the North Koreans were building up their own independent military industry capability. And through this period, you know, in the Cold War they had a lot of foreign assistance that helped with that, both with the basics of the program; the physics; developing their own technology base and, again, industrial base; and then even the sharing of designs and systems that would allow them to reverse engineer their own – their own copies and then eventually their own designs. So this was in the past.

The sort of assistance that’s going on today, though, is a bit different, and it’s really primarily the fact that the Russians and the Chinese – particularly the Chinese – are aiding and abetting North Korean sanctions evasion. And why does this matter? It matters because of the nature of the technology that you see today in weapons systems. And so when you look at some of the things that North Korea is trying to do that Ankit just talked about – things like ICBMs and MIRVs – you’re talking about technology that’s over 50 years old. These are things that the Soviets were doing in the ’60s and in the ’70s successfully. And so materials science and off-the-shelf technology – commercially available technology – has advanced so much that things that required sort of cutting-edge research back then are things that are commonly available today if you can get access to the world market. And so North Korea uses what John Park likes to call North Korea Incorporated to be able to obtain these sorts of resources, these sorts of technologies, which then they can use to support their programs. So the assistance is really, really quite different, I think, than some of the common perception that it’s really this direct assistance that’s still going on.

But I think when you step back and look at what has allowed North Korea to advance so much under Kim Jong-un, make so much progress in the programs, I think the number-one factor, though, outside of this ongoing sanctions evasion, is the accelerated program of testing – the willingness to take risk; not just political risk of backlash, of punishment from China and from the United States and from South Korea in particular, but also the willingness to risk failure. And so when I hear about a failed weapons test, I’m not relieved. I actually worry in some cases more because you learn from failure. And if they’re pushing to the envelope where they’re having tests that fail, that means that they’re accepting that risk, they’re – they are moving as fast as they can, and they’re learning from those failures. And I think you’ve seen that over time.

And so that’s the reason why I am so interested in looking at ways and advocating for ways to slow down or to halt that testing, regardless of the type of system, right, and regardless of whether it’s a full-up ICBM or it’s using an ICBM system like those two satellite tests that North Korea, you
know, said that they conducted, that the Department of Defense pointed out were – actually involved ICBM systems. So really, by my count – (laughs) – if Ankit’s description is correct, that would be four ICBM tests this year, not one, right? So I think we really need to focus on the testing aspect and how we slow that down or halt it in order to see a – you know, a delay or a stop to the progress of these programs.

So there’s – foreign assistance is part of it, through the sanctions evasion, but I do think this accelerated testing is really key.

Dr. Cha: So could I just follow up and ask you – this is very interesting, this point about the way the Russians and Chinese are aiding them is really through access to the market to essentially get technology that is quite old, right?

Mr. Garlauskas: Sure.

Dr. Cha: What about in the case of – like, the other thing Ankit mentioned was the launchers, the indigenously-produced launchers. Is that something that is – these things are commonly available on the market if they just have access to it, or?

Mr. Garlauskas: So when you look at the size of the launchers, these aren’t the sorts of things that are just going to be easily available sort of off the shelf. But the point is, is they’re made of metals, you know, and components that are available, right? And so if North Korea has developed its own domestic industry where it can produce things of this size or components that it can put together of that size, then having the resources available, the raw materials, and the technological base, that’s really key. So North Korea wants to be independent. It doesn’t want to have to rely on buying full components from other countries. So it was only a matter of time before North Korea would be able to produce these full-up systems and launchers, everything on their own just with the – some of the raw materials and technologies from outside.

Dr. Cha: Ok. All right. Great.

Let me go to Joe now. Hey, Joe. Joe, can you talk about progress that has been made and sort of the technical hurdles that have been surmounted in other elements of North Korea’s ballistic missile force? I know that you’ve done a lot of work in particular on the SLBM force. So maybe you could tell us a little bit about – a little bit about that.

Joseph S. Bermudez Jr.: Certainly. Right now North Korea has launched one experimental ballistic missile submarine, the one we have seen quite often, and this was a natural progression of their development of submarines and production of submarines over the years. They brought together in a similar manner to that Markus just mentioned technology and equipment from around the
world, publicly available, and they built this new class of submarine. They are currently building at least one, probably more traditional ballistic-missile submarines. Probably they’re taking a safe route and taking a more risky route, once again mirroring what Markus had said. They’re willing to take risks.

As we’ve looked at it and we, you know, estimate time ranges and timespans for these programs, they’re taking a little longer than what I would have normally expected. However, this should not be taken as a point of failure or a point of problem for them. It could be one simply of resource constraints or caution. North Korea’s capable of launching a true ballistic-missile submarine likely at any time of its choosing, and it will likely make that choice when Kim believes the political moment and the political capital that can be built from such an activity would be maximized for him.

There is based – the newer SLBM classes will likely be based heavily upon the experiences with the existing experimental submarine. In conjunction with this, we see the development of SLBMs – submarine-launched ballistic missiles. And North Korea’s gone through a very, apparently, practical evolution of submarine-launched ballistic missiles, you know, using technology – former Russian technology, probably some Chinese technology in there, and produced first the Pukguksong-1 and then the -2. The (Pukguksong)-2 is actually a land-based version of the (Pukguksong)-1. And the (Pukguksong)-3, the (Pukguksong)-4, and the (Pukguksong)-5. And each is getting bigger.

However, most recently we – at the Defense Expo we saw a submarine-launched ballistic missile that was significantly smaller. We don’t know the true characteristics of this system yet. However, it is likely that it was done to, one, accommodate more ballistic missiles – SLBMs – on a new submarine than just the larger missiles could. This indicates – once again, mirroring what Ankit and Markus have said – a desire to expand capabilities, also to diversify capabilities.

The question is, how much can they diversify? Well, developing a new SLBM, the small one, would allow them to diversify by increasing the number of systems on a submarine. And in theory, this submarine force, this SSB ballistic-missile submarine force, could actually form the second leg of a nuclear triad – ballistic missiles, the submarine-launched. And while they don’t really have an air – an air capability, we can’t absolutely rule that out. So they’re going for the traditional triad that the nuclear powers today have.

We would likely see going forward, if they continue along the path they’re moving at, a submarine-launched cruise missile. You know, they’re actively pursuing several cruise missile programs, and it’s likely that they would extend that to their submarine force. This would provide additional
complexities for East Asia in defending against the North Korean ballistic-missile threat.

I want to stress that at the open-source level we simply do not understand the full capabilities yet of or the intentions of where they’re going with their ballistic-missile submarines and submarine-launched ballistic missiles. What I’ve outlined is what we believe will happen, but North Korea has always been known to throw in those unexpected little twists and turns. We’ll know much more about their capabilities not only for the ballistic-missile submarine, but the submarine-launched ballistic missiles as they launch the new submarines and test the new SLBMs.

With that, I’ll turn it back to you.

Dr. Cha: Thanks.

Joe, with the tests that you were talking about, you also found that there looked like there was some damage to the sub, right, that they tested the –

Mr. Bermudez: Yes.

Dr. Cha: Could you say something about that?

Mr. Bermudez: Certainly. In the most recent test, when we looked at the imagery that they provided there were a couple of odd things about it, one of which is ballistic-missile submarines after they fire a missile don’t surface with their hatches open, and that’s for a lot of reasons. Yet, the image that they released showed the missile tube hatch up and open. Then, subsequently, we saw the submarine undergoing repair in the Sinpo South Shipyard, where it’s normally berthed. Then it was moved over to the Sinpo Shipyard graving dock – think of it as a drydock – where we saw activity on the hull, in the stern, near the sail – the center, you know, structure that extends above the submarine hull – and possibly along the bow. Subsequently, conversations with informed individuals gives greater insight, and it appears as if the submarine suffered some sort of accident or damage as a result of the test. Exactly the nature of this and the details we just don’t know at this point.

We subsequently saw, once it returned from the graving dock back to the secure boat basin, we saw additional work being conducted on the submarine itself. Most recently, we’ve seen the submarine – once again, I’m talking about the experimental ballistic-missile submarine – being moved around within the secure boat basin. You generally just don’t do this for no reason, so the – you know, the current estimate is that it’s either continuing repair or modification, maybe to test one of the newer SLBMs, or that it is being prepared for launch. You know, we just don’t have enough imagery to come to a conclusion as to which activity is being undertaken at this time.
However, I would point out that this experimental ballistic-missile submarine is providing a key element in the development not only of ballistic-missile submarines, training of crew, but also the development of the SLBMs themselves.

Dr. Cha: Great. Thanks. Thanks, Joe.

Now let me go to Sue. So, Sue, thanks for joining us. Can you talk about what you think are the ultimate goals of all this? I mean, from a broader strategy perspective, what is North Korea aiming for? Are they going to be able to credibly threaten U.S. and Korean missile-defense systems? And should South Korea expand its missile-defense cooperation with the United States and even Japan?

Sue Mi Terry: Yeah. It’s kind of interesting just hearing also Joe saying we don’t know full capabilities and intentions of North Korea. I would add to that, first, I think – you know, and I’m curious what Ankit and Markus thinks about this also – but there was also significant unknowns surrounding also the accuracy of these ballistic missiles, right – North Korea’s ballistic missiles. Because some experts – and I’m not a missile expert, so I have to go with what other people are saying – some experts say that these missiles are, you know, usually inaccurate because of their reliance on old guidance systems acquired via Soviet Union, but some experts say they have, you know, begun using GPS guidance like that of China’s navigation system so they’re more accurate and reliable than previously believed. So I’m not sure, but I’ll just kind of put that out there and I’m just – I’m curious what other people think about things.

I do think – so two things. North Korea’s missile forces are expanding, obviously, as you guys all talked about, and increasingly mobile as you’ve – we just talked about. And so – but U.S. and allied missile defenses are still capable of, you know, dealing with some of North Korea’s missile threat, right, because we do have warning systems, strike capabilities necessary to degrade their capabilities prior to launch. But that said, you know, I do think that North Korea is very near the time when it can credibly threaten the U.S. and South Korean missile-defense systems because of everything you’ve just heard. We talked about over the past decade Kim Jong-un has accelerated their efforts to field missiles capable of, you know, threatening our deployed forces, allies, partners. You know, they’ve diversified ballistic-missile force, as we just talked about, invested considerable resources in their programs. And they have taken all these extensive nuclear missile testing all in order to – and this is getting back to your question – to realize their capability to credibly threaten our homeland. And we can talk about why that is. That’s to – you know, but each to get to that point. And you know, that’s why they tested successfully these three ICBMs in 2017 and one failed attempt, but each capable of carrying this large nuclear warhead.
So, you know, right now they have a capability that could reach anywhere in mainland in the United States. And I think we still debate about the nuclear payload that North Korea’s ICBM could carry, but – it’s still unclear whether they have the capability to survive reentry, but the U.S. intelligence assessment is that they are developing this technology. What they have had – they had developed the technology to miniaturize nuclear warhead to fit expressly in missiles. And you know, as just Joe talked about, they have already launched a ballistic – underwater launch of ballistic missiles and they’ve unveiled several new ballistic missiles sub. You know, he talked about Pukguksong-4 submarine ballistic missile, there was displayed Pukguksong-5 that was unveiled in January of last year, and so on.

So I do think they’re advancing this technology that could frustrate our missile-defense system. And you know – and you know, it’s very concerning. And even if it’s not Hwasong-17 right now, they are headed in that direction, Victor, as we talked about multiple times on our Capital Cable and whatnot. And you know, if they do that and they test this ICBM that could carry multiple warheads or decoys to confuse our missile-defense system, I think – and there’s – you know, there’s no question that this development of MIRV warheads by North Korea really complicate our missile defenses. And so I think we are headed in not a great space.

And I’d note, you know, Markus’ statement that, you know, they are willing to take risks, they are accelerating testing. And I really don’t know – and Markus mentioned, how do we halt it? But I don’t know if we can halt it. How do we halt it? Like, they’re – we can’t even come up with a condemnation of the test last week. So I don’t know how we can get to a space where actually we can halt more testing. You know, that’s a good question that Markus asked. I don’t have an answer to it.

Dr. Cha: Well, I mean, so the interesting thing there is that, you know, if we all agree that testing is, you know, one of the ways that North Korea really advances its capabilities, right – because that’s how they learn, whether they’re succeeding or failing – then, from a policy perspective, you know – you know, freezing Yongbyon again, fine, whatever. Like, for the 800th time we can freeze Yongbyon again. (Laughter.) But it really is trying to get some sort of being able to regulate or moderate or even ban some of their missile testing, right? I mean, that would be if we want to try to – try to stop that.

But so can we – thanks, Sue. That’s very helpful.

So can we move the discussion a little bit towards – because we’ve mentioned it several times now – towards missile defense? And so I have a couple of questions here.
So the first is, so right now we’re not losing the missile-defense race with North Korea, but I’m gathering from all of you that if North Korea continues apace they’re going to develop capabilities that are specifically designed to defeat our missile-defense systems. So is that – is that – do you all agree on that? I mean, is there pretty much agreement on that – on that particular view?

So then the next question is – well, there are a couple. So what can we do – (laughs) – right, on the missile-defense side? And I have a very specific question on that.

And then, also, what do we think about – you know, we have a new government coming in in South Korea, the Yoon government. They’ve been very clear about what they want to do on missile defense, right? They’ve said they want a Korean THAAD battery to cover Seoul. They said they want early deployment – accelerated deployment of Korean Iron Dome, right, by 2026 as opposed to whatever it was, 2030. And they have also talked about SM-3 interceptors.

So I guess – so the first question, I guess, would be, what do you think of that plan, right? Does that plan make sense to you? And then I’ll ask you a second question about U.S. missile defenses. So, Markus, do you want to start?

Mr. Garlauskas: So I think it’s important to put missile defense and missile-defense technology in context of a larger counter-missile strategy. And so when I was the director of strategy for United Nations Command, Combined Forces Command, and U.S. Forces Korea, we worked with counterparts in Washington and our Korean counterparts to develop a counter-missile strategy that was comprehensive, looking at detecting North Korean missiles and launchers, defending with missile defenses against those missiles, disrupting the North Korean network of capabilities that allows them to fire and sustain firing of these missiles, and then actually destroying them – destroying the launchers, destroying the missiles themselves – using a whole range of capabilities including sensors, advanced command and control, and intelligence and surveillance technology, different weapons systems, and these sorts of things, investing over a long period of time.

So those systems you’re talking about I think are important components, but they’re only a piece of a much larger strategic approach that we need to take that we need to reinvigorate, because as North Korea is making progress we need to stay out ahead of them. We can’t say, hey, they just deployed this new system or they just tested this new system, so we need to do something. We need to get out ahead of it, right?

Dr. Cha: And we’re really not doing that right now.
Mr. Garlauskas: I feel like we are underinvested and under-focusing on countering the missile threat on the peninsula, and I’m concerned also that national missile defenses may be falling behind the progress that North Korea is making. Because we talk a lot about the number of missiles and the capability of missiles that North Korea could use on the peninsula or in the region, and that’s a different qualitative problem, right? That’s large numbers, different types of systems, some of which, you know, as Sue Mi was saying, may be much more accurate and have different approaches to evasion. But then the ability to reach the United States – and you know, it’s still – it’s still tenuous, right? I think they have that capability. But the point is, is what they don’t have is an overwhelming amount of missiles and warheads they can fire at the – at the United States yet. And so that means national missile defense, the calculus is a bit different than the on peninsula, where you have to accept that just the sheer numbers, the scope of the problem makes it different to deal with.

Dr. Cha: Great. Thanks.

Anybody else? Ankit?

Mr. Panda: So let me – let me follow up a bit on that. So let’s, I mean, talk through the numbers on missile defense, right? So today the United States has 44 ground-based interceptors. These are the only system that we’ve built from the ground up to handle limited ICBM threats from North Korea and maybe one day Iran. That’s been our policy since the National Missile Defense Act of 1999, one year after North Korea tested the Taepodong-1, which really kicked off a lot of these efforts. So 44 interceptors. The Missile Defense Agency used to plan to shoot four of these at a single incoming reentry vehicle and is moving to a concept of operations that would rely on shooting three of these at an incoming reentry vehicle.

North Korea has shown us – you know, they had those Wanshan 51200 Chinese logging trucks that they converted to ICBM launchers. There were six of those, as far as we know – at least according to the Treasury Department, which has made that number public in at least one sanctions designation. And then we’ve seen four of these new 11-axle Hwasong-17 launchers.

So that’s 10 ICBM launchers, 44 ground-based interceptors. If you do the math, if you assume a worst-case scenario where we do end up using four interceptors per incoming reentry vehicle and you see single reentry vehicles, basically the North Koreans need to build one more launcher to
saturate the existing capability. And we are building out to 64 interceptors soon.

And so everything we’re seeing in North Korea – with the move towards MIRVing, with the ability to indigenously build launchers – actually leaves me feeling pretty – you know, if I’m in North Korea, I’m feeling pretty good about my ability to pace the United States on this. And with missile defense, it’s not about the absolute capability; it’s about the cost effectiveness at the margin of what it costs the United States to expand our missile defense – our national missile-defense architecture to keep up with this threat.

And then if we go back to sort of the fundamentals of nuclear deterrence – and this is just nuclear deterrence generally, not with North Korea; with China, with Russia. You know, with China and Russia we say we rely on nuclear deterrence, not missile defense, for the simple reason that we understand that if we ever tried to build a defense the Chinese and Russians would simply outpace us. It doesn’t matter that China and Russia don’t believe us when we say that, but that’s our policy. And so for the North Koreans, they want the – you know, they want that same outcome. They want the United States to treat them as a sovereign equal in a nuclear-deterrence relationship with them. And I don’t for a minute think that if we kept building interceptors to just keep up with this North Korean ICBM threat, you know, for decades and decades into the future, assuming that the North Koreans keep their nuclear arsenal, that at some point the North Koreans will just determine, you know, well, we just don’t have the resources to keep up anymore. I think the cost effectiveness argument really, you know, suggests to me that this isn’t necessarily a long-term winning strategy.

In the short term, I think there are important reasons for this. You know, one really good reason to have homeland missile defense is for the credibility of our extended deterrent, because our allies in Seoul and Tokyo already understand that the North Korean ICBM threat makes our ability to extend our deterrent to them a lot more problematic because why would any American president come to their assistance if it means Washington, New York, Los Angeles might suffer a North Korean nuclear attack? So for our allies, they might feel a little bit better about our assurances if we indicate that we are investing in these homeland defenses.

So there’s no easy answer here. It’s a – it’s a very difficult problem. You’re sort of weighing stable nuclear deterrence with North Korea against extended-deterrence assurances against cost considerations. There’s a number of push and pull factors here.

Theater missile defense, I think, is a completely different issue. I think this, I mean, contributes not only to the credibility of the alliance, but also to our
ability to conventionally deter North Korea. I think we want to retain credible conventional options to demonstrate to North Korea that it doesn’t matter if they develop a new array of shorter-range missiles and tactical nuclear weapons, which we haven’t even talked about yet; that, you know, we will have credible options, and that our ability to limit damage to U.S. Forces Korea, to the alliance, to our forces in Japan with theater-range missile defenses, I think, will serve to make that more credible.

Thanks.

Dr. Cha: All right.

I can’t see if you guys have your hands up, but if you want to chime in here, feel free.

Mr. Bermudez: I would like to make a few comments. I want to play the North Koreans for a couple of minutes.

Dr. Cha: OK.

Mr. Bermudez: When we talk about theater missile defense, we almost invariably think about systems and numbers – you know, how many missiles the North Koreans can launch, you know, how many missiles we have, very much like Ankit just discussed for the U.S. But the North Koreans, you know, have strategies to mitigate our theater missile defense. We’re thinking that – in many of these discussions, people think that the North Koreans aren’t going to employ their special operations forces, which will be tasked with helping negate this. They don’t think of the ever-increasing range of North Korean MRLs/SRBMs, which can be fired at these facilities – and even if not fired at this – these specific missile-defense facilities, that can be fired at targets that we want to defend against, which would require a response. The North Koreans probably think somewhat in artillery terms of overwhelming the missile defense that we put in theater or that our allies might put in theater so that a follow-on wave of ballistic missiles – more capable missiles – can more successfully achieve their objectives and destroy the targets they’re laid on. This is – this is important. We can’t assume – we can’t look at missile defense in isolation when we talk about North Korea. This is – and many people, I believe, make that mistake.

I would also like to mention, you know, Ankit did some excellent math on the current threat, assuming, you know, 100 percent reliability –

Dr. Cha: There is that. (Laughter.)

Mr. Bermudez: – and their achievement of threatening the United States. And I have – I tend to be conservative when I evaluate North Korean ballistic-missile
capabilities. I would also point out that North Korea, other than the TELs – transporter erector launchers – that they have shown publicly, they have other TELs that have not been shown publicly. They also have transporter erector – mobile transporter erectors, MELs, which are basically tractor-trailer chassis that can carry a missile, raise it, and launch it while the tractor part moves somewhere else. So we might have to keep that in consideration when we evaluate the threat to the United States.

But still, I want to be conservative here. They have not demonstrated a full-range flight of an ICBM going – you know, having a very parabolic orbit that goes – a trajectory that goes, you know, 6,000 kilometers up and has a range of 500 kilometers is not the same as firing it from North Korea into the Central Pacific as a demonstration of capabilities. These things we need to consider.

I still think the North Korean threat is real, don’t get me wrong. It’s the level of threat that I just wanted to mention. Thank you.

Dr. Terry: But I mean, I guess I have a question, then, because you know, Ankit talked about these 44 – you know, we have these 44 anti-ICBM ground-based interceptors. But it’s my understanding that apparently intercepting even a single nuclear-armed ICBM in flight is very challenging. Isn’t that true? I mean, I thought –

Mr. : Yeah. Yeah.

Dr. Terry: So if – you know, if the missiles, you know, the North Koreans tested in February and March – or, you know, the Hwasong-17 in the future – if they could carry between three to four nuclear warheads, I mean, how would the U.S. missile-defense system – I mean, what is it like to shoot four warheads instead of one if one is challenging? I mean, it just makes, you know – (laughs) – you know, like, it’s less probability of hitting them with any kind of accuracy, right? So doesn’t that really frustrate our defense system if they really show this MIRV capability? So that’s my question to Joe and Ankit.

And then I think it’s just maybe a good time to talk about that a little bit – I think, Victor, I didn’t mention this when you asked me about this in the first question – about, you know, whether South Korea then needs to do this whole trilateral defense cooperation with Japan – U.S. and Japan. I don’t think we talked about that. South Korea and Japan are each working with the U.S. to build missile-defense systems that’s increasingly interoperable with the U.S. defenses, but you know, I think maybe we need to talk a little bit about sort of the trilateral missile-defense system and whether that could – if that could mitigate the North Korean missile threat or not.
Dr. Cha: Right. These are all great questions. And so let’s – on the first of these, right, obviously, if they MIRV – and then we’re not even talking about countermeasures, right, other sorts of countermeasures they can deploy which would make the – the math that you described is in a perfect situation, right? I mean – yeah.

Mr. Panda: Well, so, you know, I fully agree with Joe that we should be conservative when we think about the North Korean side. But, you know, I like to – I like to concede liberal assumptions about missile defense to sort of make the case that even under ideal scenarios – because, to me, Joe is absolutely right. The observed reliability of our homeland missile defenses, if we extrapolate from what we’ve seen over the last tests, works out to a little bit better than even odds, right? So those four interceptors that were being launched are sort of, I think, baking that math into – you know, if they were better, we would launch one interceptor per incoming RV, but we don’t. So I think there is that sort of assumption baked in.

But, look, I mean, all of this – nuclear deterrence fundamentally, I think the North Koreans have read Schelling. They sort of understand that, you know, deterrence can fundamentally operate on the basis of probabilities of manipulating ambiguity and manipulating risk. They understand that if you’re an American president who’s being asked to make the very tough decision about whether or not we should go in and begin striking every North Korean ICBM launcher we can find, that you might miss one or two.

And the probability, let’s say, of that ICBM launching successfully, releasing its reentry vehicle, that reentry vehicle then coming down, bypassing all of our homeland missile defense interceptors. Even if that’s, let’s say, a 5 percent probability – that that sequence events plays out, where we fail to intercept one North Korean ICBM launcher – the expected damage that that one reentry vehicle would cause on American soil, that’s enough to cause an American president to think twice, three times, four times before taking that decision. And I think this is really the basis of how the North Koreans think about nuclear deterrence.

You know, so when we have these discussions, I think it’s very American, you know, I mean, we look at our ICBMs and our SLBM and, you know, the Trident D-5 is the best missile on Earth when it comes to reliability and testing. And so, you know, if we extrapolate those same standards for reliability onto what the North Koreans need to do in order to credibly deter us, well, the North Koreans are never going to get there. But of course, for nuclear deterrence to obtain for the North Koreans, and for them to get what they’re really looking for for their own security and strategic objectives, they can do a lot more with a lot less.

Dr. Cha: Yeah, so –
Mr. Bermudez: I’d like to chime in, if I could. I think Ankit –

Dr. Cha: Yeah, can I just say – Joe, let me just say, so, the bad news is that they’re reading Schelling, but it’s probably also good that they’re reading Schelling at the same time. It’s better that they be reading Schelling than not be reading Schelling, right?

Mr. Panda: Yeah, I would recommend that to everyone in general in the national security space, not just North Koreans. (Laughter.)

Dr. Cha: Go ahead, Joe.

Mr. Bermudez: I think Ankit hit upon a critical point in understanding North Korean missile development. He didn’t say it this bluntly, but North Korea seeks to develop appropriate technology as opposed to cutting edge technology. For North Korea to hit mainland U.S. with anything is a tremendous victory. You know, we want to hit something within three meters. That isn’t North Korea’s objective. You know, yes, it’s aspirational, certainly. But if they can just hit the United States, in their minds that is success.

Dr. Cha: Yeah, so the bar is lower. So you’re basically saying the bar is lower for them in terms of what they’re trying to achieve. They’re not trying to achieve, obviously, what the United States can do. They’re just trying to be able to reach out and touch us, basically. So could you say something about the South Korean – what the South Koreans are thinking of doing now? Or at least what they’re talking about, you know, Iron Dome and then a THAAD battery over Seoul?

Mr. Garlauskas: Yeah, no, and to be fair, I went off into try to put this in the larger context, but I think all of those systems that are being talked about are really appropriate. And I do think indigenous South Korean capabilities, whether domestically developed and capabilities purchased from the United States or elsewhere, I think those are really important elements of this countering the North Korean missile threat, in part because it seems like there’s a lot less international objections, specifically from China, when South Korea has the capability as opposed to the U.S. deploying it. So I think THAAD would add to the fear level over on missile defense. Iron Dome I think would contribute to the ability to defend against these smaller missiles and projectiles that North Korea regularly, you know, has threatened to rain down on Seoul overtime.

So I think those things that are being talked about all make sense. What concerns me, actually, is the language about preemption, that you haven’t mentioned. That, I think, is – has a lot of risks and a lot of dangers and is a very high order. But focusing on missile defenses I think is very appropriate,
and I think it’s necessary. And it’s good to see that South Korea is willing to invest those capabilities.

Dr. Cha: Anybody else want to –

Mr. Panda: On the Iron Dome thing, it’s interesting because – I mean, so first of all, the South Koreans are developing their own indigenous competitor to Iron Dome that’s going to have the same kind of ability to engage threats. And you know, it goes without saying that the missile threat from North Korea is very different from the missile threat that Israel faces from Hamas. And so my understanding of the concept of operations that the South Korean joint chiefs ended up studying with this Iron Dome concept is not to shield the South Korean civilian population from any and all missile attacks from North Korea. That’s just not feasible. It’s about really hardening and protecting critical civilian infrastructure – so power stations, hospitals, on the military side command and control nodes, possibly even airfields, from short-range missile barrages.

And the big concern is as North Korea might be lowering the nuclear threshold and becoming much more confident in its strategic capabilities, I think the nightmare scenario is that we watch something like 2010 play out again on the Korean Peninsula, when the North Koreans sank the Cheonan and shelled Yeonpyeong Island. But they have a much more robust capability to escalate. And so the ability to then limit damage and to have credible conventional retaliatory options I think is becoming much more important to the South Koreans.

Dr. Cha: And so, last question on missile defense, so there’s – I don’t know if you – there’s a new article in International Security. I don’t know if you saw, I can’t remember the authors now, but they were advocating the boost phase intercept. Do you want to say something about that, anybody?

Mr. Garlauskas: Well, I mean, and I’ll go first, and I want to hear your thoughts as well, Ankit. So one of the things that’s really important here is – Ankit is right. There is a terrible cost disparity in the sense of a limited amount of resources that North Korea can develop, you know, a capability which is very expensive for us to counter. And I think it’s important to keep in mind, though, that North Korea is one of the poorest countries in the world and the U.S. is the richest country in the world. And so marginally as a proportion of GDP, a relatively small investment, I think, can still let us completely, you know, outspend the North Koreans, if we need to.

But things like boost phase actually, even though they’re – right now it’s still very much in a nascent stage – provide that sort of exponential increase in capability and options, as opposed to just building more interceptors of the existing types – kind of a legacy-type approach. So I think, whether it’s boost
phase or something else, we would have to move to new models of missile
defense technology to really – to long-term keep ahead of the curve, if that’s
the goal. And I think it should be.

Mr. Panda: So the big attraction of boost phase intercept, which is something we’ve been
thinking about for 20 years, is it would let us do missile defense against
North Korea without spooking Russia and China. Because right now the
problem is, we have a missile defense system that we say is exclusively for
North Korea. We tell the Russians and the Chinese it’s not for them. But
that’s not good enough. They don’t believe us. And so Russia’s building, you
know, autonomous underwater nuclear torpedoes and nuclear propulsion
cruise missiles, and China’s launching orbital hypersonic gliders, and all of
these, you know, crazy things, because they feel that our missile defenses
might actually be directed against them.

And so boost phase intercept, look, I wish we lived in a world where boost
phase intercept could work. I have read the article you’re referring to. You
know, I think it’s a very well-argued piece. I think boost phase presents a lot
of operational difficulties, because if you’re using an aerial platform, like an
F-35, that would launch an interceptor outside North Korea’s airspace to
strike an ICBM launching from Sunan, I mean, operationally, first, you have
to have that platform airborne. And you can’t do that 24/7, obviously, for
just practical reasons. And if you did try to do that, you know, refuel F-35s
and just have permanent air presence around North Korea, a lot of room for
things to go wrong, very expensive.

The North Koreans have ways of coping with this too. I mean, one of the
things is also as the North Koreans move towards solid-propellant ICBMs,
the time in boost phase that we actually have available to intercept those
missiles actually goes down. There’s a national academy study that sort of
looked at this. And, you know, this is a major concern as they move towards
solid propellants. I think there are other ways to sort of square this issue,
right? An idea that I’ve been playing around with is the notion of sealing our
interceptor silos in peacetime to demonstrate to Russia and China that these
aren’t intended against them.

And that if we’re in a crisis with Russia and China, the silos remain sealed.
And if and when we enter into a crisis with North Korea, we remove those
seals to make those interceptors immediately accessible if they are needed.
Again, Russia and China would be able to observe and verify that this is being
done with their optical satellites, for instance. But, you know, I do think that
boost phase concepts are still a little bit far from reality in all practice.

Dr. Cha: And it’s not really something that we’re seeing emphasized in our missile
defense strategy. I mean, so it’s an academic discussion right now, for the
most part.
Sue, can I go to you and can we talk a little bit about policy? Like, so, you know, very clearly this missile threat is – you know, it’s clear and present in front of us. The administration still has the same talking point, which is: We’ll meet you anyplace, anywhere, anytime, without preconditions. The North Koreans don’t really seem interested in that right now. Do you have any ideas about what we should do?

Dr. Terry: I literally wrote a piece last week that talked about I don’t have – I’m fresh out of ideas. (Laughter.) That in terms of creative new ideas. And, you know, I got criticized, but I said people are saying there have got to be different, more creative ideas. I mean, do you have any ideas? I really don’t, in the sense that I – in terms of stopping the track that they’re on right now, I think they’re bent on it. There are reasons why they are doing it. There is going to be no consequences for Kim Jong-un, right? So if I’m Kim Jong-un, I can’t think of a single reason not to do this, particularly right now while everybody’s distracted and you can’t even get United Nations to condemn an ICBM test.

So, that said, this is why I get criticized for it, but I don’t think that we have a whole lot of options. You know, OK, fine, we say we’re going to meet them anytime, anyplace. But they’re not going to. So we have to – what can we do but to enforce sanctions and – you know, South Koreans, when Yoon said, OK, I have to now think about – President-Elect Yoon, that is – you know, redeploying – or, deploying more THAAD. And, you know, maybe for us, the point I mentioned earlier about, you know, trying to – encouraging South Korea and Japan maybe to integrate trilateral missile defense.

South Korea long held a position that they're not going to integrate trilateral missile defense. You know, they reiterated the position, as you know, in 2017 in response to China’s retaliation for THAAD. But, you know, now maybe it’s time for us to kind of move South Korea in that direction, to – you know, because in missile defense the whole is greater than the sum of the parts, right? Which means it requires interoperability among various missile defense capabilities. So, I mean, I know – like, you know, this is not exciting and new. But, you know, those people who are critical, I want to say, what is a realistic proposal this year? And what will stop North Korea from going on this track, on this path, when there is no consequence that they can foresee? It’s a challenge for you. (Laughs.)

Dr. Cha: Yeah. (Laughs.) Anybody else want to weigh in on policy? Yeah.

Mr. Panda: Yeah, I mean, look, in the 10 years that Kim Jong-un has been in power I think he’s facing the most difficult set of internal circumstances – famine or famine-like conditions, economic difficulties, the COVID-19 pandemic – and he’s probably got the best external environment that he’s enjoyed in the last
10 years, right? I think for pretty obvious reasons, I think the big one being just great-power consensus on ICBM tests being a bad thing having completely disintegrated – which is a very good thing for Kim Jong-un.

And so the other reason I bring this up is I do agree with Sue that, you know, it’s hard for me to fault the administration for not making something happen, although I do think, you know, that we might be able to give the North Koreans a few concrete ideas, which seems to be something that they were, at least, seeking. I’m not sure that they would reciprocate at this point. But part of the reason is that the only that’s going well in North Korea right now, and we sort of see this in the fact that they felt the need to deceive us about a Hwasong-17 test, right, from the perspective of nuclear deterrence that’s a very bad idea for a country in North Korea’s position. You don’t want to lie about your strategic deterrence capabilities.

But for the purposes of internal propaganda, I mean, the missile program is the only thing that’s going really well in the country. I mean, you know, they’re testing maneuverable reentry vehicles, long-range cruise missiles, new ICBMs. And in a way, I mean, as awful as it sounds, I mean, this deception and sort of running this frontpage story in their state and their party newspaper about this new ICBM that sort of showcases the chops of their national defense industry, it almost feels like a way to justify to the people that all of their pain and suffering is worth it. You know, Kim Jong-un has been using the phrase, you know, belt tightening, and alluding to the arduous March, of course, the famine in the late ’90s. And he’s been doing this openly.

And it seems like this is all being couched very much in internal terms as, look, we are still powerful. Our self-reliant national defense industry continues to thrive, and we’re continuing to deter the imperialists. And, you know, we are working on agriculture because, for instance, the day they launched the Hwasong-12, that was a page two story in their state newspaper. The page one story was a new greenhouse being set up for food production. And so these internal dynamics, I think, really point to a rather pessimistic conclusion, which is that, you know, North Korea’s going to keep its head down for a few years and continue pursuing what it said it would do under the Eight Party Congress. And when they’re ready to talk, you know, we’ll be back at the table with them. But it’s going to be a while. And I think we’ll be looking at a much-expanded North Korean threat by the time that comes around.

Dr. Cha: Great. Markus, what do you think is coming next?

Mr. Garlauskas: Yeah, so I’m very concerned about additional testing, particular of MIRV capability – multiple independent reentry vehicles – or just multiple reentry vehicles in general, because of the challenges that we talked about. I am
concerned about the potential for a test of a smaller, lighter nuclear warhead, a tactical or a nonstrategic weapon that could be put on a smaller missile or put more of them on an ICBM, so there’d be more RVs with nuclear warheads. I’m very concerned about that possibility sort of in the near term.

Longer term, I’m concerned about what it means if North Korea can really establish a truly credible nuclear threat to the United States and to the region to be able to have this overwhelming capability against missile defenses. What it’s going to mean for Kim’s risk calculus, his willingness to push the envelope? And so I hear what Sue Mi is saying about those constraints on the options that we have, but I think it’s all because we have a mistaken risk calculus. We’re looking at what is the near-term risk of some of the more extreme things we can do. We’re not looking at the longer-term risk of what it means to have Kim Jong-un armed to the teeth with more advanced nuclear and conventional weapons. And that’s what I’m worried about in the coming years.

Dr. Terry: Can I have a two-finger on that?

Dr. Cha: Yeah, and then you can also tell us what you think is coming next, because this is our last round. So tell us also what you think is coming next.

Dr. Terry: I mean, agree with both of what Ankit and Markus said. I mean, Ankit brought up domestic reasons, which only reinforces this point that Kim Jong-un is on this trajectory, this path, and I don’t think we can stop it. And Markus’ point is very valid. But again, I’d note that neither of you guys brought up any point about how do we – how do we stop it? (Laughter.) You know? So I just – that’s my projection. In the coming weeks, the coming months, this year, we’re not going to be able to stop. You know exactly what’s coming. Markus pointed it out. And it’s very concerning. But, again, you know, I’d note that no one seems to be able to come up with something that’s going to stop them on this track, besides everything that we talked about – sanctions, missile defense, deterrence, and so on.

Dr. Cha: Great. Joe.

Dr. Terry: You’re on mute.

Dr. Cha: Yeah.

Mr. Bermudez: Yeah. Thank you. I really have nothing to add to the policy discussion at all. I think it was very well-articulated by my three partners here. What do I expect with North Korea? I expect to see a submarine-launched ballistic missile test. I expect to see continued testing. What I’d be concerned about is some air-launch capability of a cruise missile capable of carrying a nuclear
warhead. I see no indication of it, but it’s something that would be very disconcerting, from my perspective.

Dr. Cha: Right. To complete the triad, right, yeah.

Mr. Bermudez: Exactly.

Dr. Cha: Well, this has really been – I know there’s much more we could discuss but, unfortunately, we’re out of time. Thank you all for joining us today. Thank you to our audience for tuning in. And hopefully next time we get together we’ll have better news, but I’m not really hopeful for that at this point. OK, thank you, everybody. Have a good day.