



Virtual Event | China's Coercive Missile Strategy and the US Response

TRANSCRIPT

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- Dr. Mark Lewis, *Executive Director, Emerging Technologies Institute, National Defense Industrial Association*
- Dr. Christopher Yeaw, *Associate Executive Director, Strategic Deterrence and Nuclear Programs, National Strategic Research Institute at the University of Nebraska*
- Timothy A. Walton, *Fellow, Center for Defense Concepts and Technology, Hudson Institute*
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Rebecca Heinrichs:

Good afternoon to those of you who are joining us virtually. Thank you for tuning into this in-person, virtual event at Hudson Institute. My name is Rebecca Heinrichs and I am a senior fellow here at Hudson. Today we'll be discussing China's missile program. Of course China's entire military is in the midst of a rapid build up, including its growing long-range bomber force, its blue-water navy, and its space program. But today we will be primarily, but not exclusively, focusing on its missile force. And that's because of the special emphasis that China has placed on its missile force. Since the Cold War, the PLA Rocket Force has increasingly focused on the employment of precision-guided conventional ballistic and land-attack cruise missiles. And the force was elevated in December of 2015 to a status coequal to that of China's other military services. But not only that, it is in a midst, China is in the midst of what STRATCOM's Admiral Richard has described as a strategic breakout.

China is seeking to become a peer to the United States and Russia and estimates put Beijing at likely doubling if not tripling or quadrupling its nuclear arsenal by the end of the decade. The Financial Times reported earlier this month that China launched two hypersonic missiles last summer. One of the launches using what is called a Fractional Orbital Bombardment System, sent nuclear capable missiles into orbit before they landed mere miles away from their intended targets. We hope to discuss all of this today. We won't have enough time to cover it all, but I have a distinguished panelist here to help us think about these things. To look at some particularly high value areas where or China might be looking to act aggressively, and then thinking about what the United States might be doing now to prepare to deter aggression against what the United States and our allies deem key interests and vital interests. And then should deterrence fail, what the United States might do with our allies to defeat the adversary.

And so today I am joined by Dr. Mark Lewis, executive director, Emerging Technologies Institute, National Defense Industrial Association. My esteemed colleague here, Timothy A. Walton, a fellow here at Hudson who works with the Center for Defense Concepts and Technology. And then Dr. Christopher Yeaw, associate executive director, Strategic Deterrence in Nuclear Programs, National Strategic Research Institute at the University of Nebraska. Very thrilled to have all three of these gentlemen scholars here with me today to discuss these issues. What I'd like to do, is I'm going to turn it over to each of them to make a few initial remarks, and then we will have a nice conversation, and end at promptly at one o'clock your time for those who are watching it as we premier it. And so with that, Dr. Lewis, I will turn it over to you.

Dr. Mark Lewis:

Great. Well, thank you so much for having us and thanks for initiating this conversation. I'll say, when I look at China, from a technology standpoint, one of the things that I'm very concerned about, is the investments that the Chinese are making across the board in a range of technologies. Everything from artificial intelligence, to biotechnology, we know that they're trying to break out in areas such as microelectronics. And of course you mentioned hypersonics. And especially relevant to their missile program. The investments that we've seen the Chinese make in hypersonics are frankly startling. To a certain extent, I have to tip my hat to them. They have made incredible progress in many cases because they've built on work that we did. We took our foot off the gas. They saw an opportunity. They were able to build on our developments, build on our research, and they have run with it.

And it has given them a capability that, frankly, I believe right now is startling and is increasingly concerning. You mentioned the Fractional Orbital Bombardment Test that was widely reported in the press. That to me is notable for several reasons. One, it was a difficult thing to do technically. So it shows the Chinese have clearly developed a level of technical prowess that is notable. But it also shows intent.

I think it was John Hyten, the former vice chairman of the Joint Chiefs who said, "That clearly looks like a first strike capability. That's what that weapon looks like." And to me, it signals that the Chinese are looking at technologies that, not only allow them to control the space in their immediate domain. They're looking at global capabilities. And they're using technologies to enhance that.

So that to me, is the big story about China. Now I also will point out, and I hope we'll get a chance to discuss this. My other big concern about China is, we know that they will not apply the same ethical standards to these range of technologies that we will. Things like artificial intelligence, things like biotechnology. We have very rigid ethical standards in how we would use artificial intelligence, what we would allow autonomous systems to do in the battlefield. I think we can have no confidence that the Chinese would apply those at all. Same thing with biotechnology, we have very, very rigid standard about what we will do and what we will not do in the area of biotechnology. And I think we've seen that the Chinese do not share those values and apply those standards. And that to me is a very, very startling realization.

Rebecca Heinrichs:

Great. Thank you. Timothy.

Timothy A. Walton:

Sure. If I could Rebecca, just talk a little bit about some precepts of Chinese strategy and then some projections perhaps about where the PLA Rocket Force may be going. Chinese strategy focuses on gaining information dominance. Modern Chinese military theorists view confrontations between armies as taking place between what they call operational systems. These are combinations of command and control, information and intelligence, networks, fires and support assets that all work together to make an army fight effectively. And their theory of victory as Jeff Engstrom of RAND and Mike [inaudible 00:05:53] have pointed out, really focuses on a system of systems confrontation in which the PLA wants to gain an advantage, to be able to paralyze an adversary's operational systems so that they lack the ability to resist, and then lose the will to resist and ultimately capitulate. To do this, the PLA has made a lot of investments and develop the strategy that focuses on offensive military operations. To gain a military advantage and to maintain it. They plan on conducting key strikes using kinetic and non-kinetic weapons against nodes in enemies operational systems, to have an outsized effect.

And they want to maintain this initiative and gain it through preventive attacks. They talk about conducting preventive attacks against other countries and preemptive attacks of various kinds. So essentially conducting lots of surprise attacks to gain the initiative, operationally, but also ideally, shock enemy leaders into capitulating before conflicts really even started. The PLA Rocket Force figures very prominently in the PLA's conception of how want to gain this initiative, and the PLA Rocket Force text articulates the leading role of these types of capabilities. Mark's talked a little bit, I think about the broad challenges that the PLA is presenting moving forward. I just wanted to highlight perhaps some free trends regarding where the PLA's strike capabilities might go this decade. The first is, I don't think the PLA Rocket Force is going to slow down. The PLA has signaled that they plan on increasing the type, number, and range of missiles in its arsenal. And I think this is because they recognize it's a very effective class of weapons.

It can deliver weapons with a very high probability of arrival, even against defended targets and accurately target key nodes that I was talking about, in the enemy's operational systems. It could also do it at a relatively low risk to the launch platforms themselves. And even though the individual cost of some of these long-range munitions may be high, when you look at the cost to generate the effect and compare it to some other delivery options, and when you count for attrition, I think it's quite reasonable. There's also, I think, as you pointed out Rebecca, now that it's its own service, there are

lots of bureaucratic organizational and industrial dynamics that push the PLA Rocket Force to continue to improve and not want to slow down. Now, our estimates suggest that, even if we use some very conservative assumptions regarding PLA Rocket Force launcher numbers and production rates of missiles, the PLA could reach about 3000 missiles by 2030 from around 2000 missiles in 2020 or 2021. Second major trend, is that there are other components of the PLA strike capabilities that are continuing to improve and are becoming increasingly integrated with the rocket force.

The PLA Rocket Force certainly gets a lot of attention in the press and rightfully so. But if you look at the bulk of the fires in a potential campaign, would likely come from PLA aircraft. Our analysis suggests that PLA aircraft would be able to deliver about three times as many munitions every day as the entire PLA Rocket Force inventory. And if they wouldn't suffer high levels of attrition, they could come back the next day and keep delivering those weapons day after day. So it's a major threat and the PLA is improving it. They're fielding modernized JH-7 fighter bombers, new classes of stealthy UAVs, the JH-XX theatre bomber, and the H-20 intercontinental bomber will likely come online this decade. And the H-20 likely has the potential to be able to strike targets in Alaska, Hawaii, and beyond. We're also seeing the PLA start to field Y-20 aerial refueling tankers. And those will extend the range of PLA strike aircraft, but also escort aircraft, like the J-20 that could clear a path for the bombers and get the bombers to more favorable launch positions.

So it's a multifaceted threat that the PLA is presenting and it's very complex. And then the third trend briefly offer that's perhaps a bit more speculative is that PLA missiles may go abroad. The PLA has articulated a desire to establish a global network of bases. They're working on this. They have the world's leading navy, largest navy today. And they're already incorporating onto different surface combatants, like the type 55 different long-range missiles that could strike targets at shore or at sea. We're also seeing though at different Chinese trade shows, for instance, interest in containerized launcher systems that could fire either missiles or UAVs, including lethal UAVs of various kinds. And these containerized launchers will run the risk of them being able to either overtly, covertly or clandestinely operate them from explicit Chinese bases, Chinese ports, or even merchant vessels that have been converted.

So it's a significant threat that I think underscores the fact that the air missile defense challenges posed by China are not just a regional Indo-Pacific challenge, but rather a global one. And as the PLA expands, our allies and partners, wherever they are, are going to need to deal with this threat.

Rebecca Heinrichs:

Great. Lot of great information from the first two, and we just have more bad news coming. So with that, Chris, I'm going to turn it over to you.

Dr. Christopher Yeaw:

Thanks Rebecca.

Rebecca Heinrichs:

To talk a little bit of what the Chinese is doing on the nuclear front.

Dr. Christopher Yeaw:

Great. Thanks Rebecca. And thanks to Hudson for convening this panel. It's an important subject. On the nuclear front, I think Admiral Richard says it best when he says, "The scope of the acceleration is breathtaking." What the public mostly sees are the silo bases. So you have three new bases, lots of silos, probably going to about 300. When all is said and done, those silos can all then be filled with ICBMs,

presumably the DF-41, potentially with multiple RVs, but that's just part of the program. That's just what we see mostly. The rest is kind of veiled in this opacity, this great wall of secrecy, some people have called it. It's very hard to penetrate what they're doing. We see other expansions though. For example, Pingtung is where they produce their nuclear weapons. Similar to the U.S. Rocky Flats and Pantex. Back when we had Rocky Flats, three plus years ago. That complex has undergone a large expansion. An expansion that looks to be larger than could be assumed away by saying, "Well, they just need some RVs for the DF-41."

Our kind of proprietary private estimates on the numbers are somewhere in the 700s, not the 200s or 300s for operational nuclear warheads, probably doubling by the end of the decade. And some of that would be the silo force. Some of that would be the theatre force. And so the theatre force is really the second most concerning thing. One of the things that Admiral Richard has said is that the Chinese have positioned themselves so that they can essentially execute any plausible nuclear strategy that they wish. What that means is that we have to think beyond the numbers, sort of Cold War thinking of, let's compare all the numbers of all the different types of nuclear systems. Of course, they've got a lot of nuclear systems. Of course the numbers are going up. Whether it's the ballistic missile force or the bomber force with cruise missiles or air-launch ballistic missiles, FOBs as you mentioned. All of this across the board, is attempting to deliver a strategy. These are capabilities that underwrite a strategy.

The question is, what is this nuclear strategy? A lot of people have said, "Hey, look, they're racing toward parity with the United States in terms of nuclear numbers." Again, the numbers are not so important. What they are actually achieving is a strategic force, what we call strategic, meaning what we would be covered under treaty. None of China's nuclear warheads are under treaty. A strategic force that essentially acts as apocalypse insurance, if you will. And then underneath that, there's a theatre nuclear force that allows them to do discretionary, selective, highly selective targeting in theatre with nuclear forces, should all of these other balances not actually swing in their favor in an actual conflict. So we're talking about whether it's hypersonics, or space, or cyber, run the entire AI. Run the entire gamut of non-nuclear capabilities. The United States is good at competing in those areas. And we may, well, counterbalance them in all of those areas. The one place, the one military capability that the United States has demonstrated a non-will to compete in, the sole military capability is theatre in nuclear forces.

Ever since divestment of those forces in the nineties, the United States has walked away. Despite the fact that Russia retrenched itself into theatre nuclear forces, and China continues to expand its theatre nuclear forces. Those forces are important because those are the forces that they will use if things start going badly for them in a conflict. They're of the forces that give them the confidence to go into that conflict in the first place. Because there's this escalatory hole in which we really can't play because we've seated that ground. They're filling that hole. That's the gravitational attraction for them. Is to go where the adversary is not willing to go. And that's really similar across any competitive space. I mean, athletics, you see it in athletics all the time. If a team is not willing to invest in a certain type of capability, other teams are going to exploit that. And so that's the big worry that I have. Is that this is a nuclear strategy designed to underwrite their aggressive actions.

Rebecca Heinrichs:

Okay. Thank you very much. Those are three great original presentations. I want to talk then about what the United States should be doing. Now there's been some chatter that because of everything that we just laid out here, it's so formidable because of the geographic asymmetry, it's right there close to China. Taiwan is the going to be the most likely flash point. Although not necessarily the only flash point where there could be conflict between the United States with our allies and China, but Taiwan is the one that's

talked about the most. But we are at such a disadvantage that there isn't much we can do. That is not the view of the panelists here. We don't have a defeatist attitude.

There actually is a lot that the United States can do and should do, and it is worth doing because of U.S. interest. So let's talk about that. I'll turn it over to you Mark. And the National Defense Strategy is supposed to come out sometime this month. So we can talk about some of the things that we would like to see. The kind of language we like to see in there. And based on these things, and then also just your view on the critical importance of Taiwan and what the United States should be doing in order to deter aggression against it.

Dr. Mark Lewis:

Sure. First, my starting point for the National Defense Strategy, I'm a big fan of the 2018 National Defense Strategy. There were a few elements in that that I think especially jump out as providing goodness. One, it identifies China and Russia, but primarily China as a peer competitor that we need to be focused on. And as they say, the first steps for an alcoholic to recover, is to admit that they're an alcoholic. Well, the first step is to admit we've got a problem. And that's what the 2018 strategy did. So that's one thing that I want to see that continue. The next is that, that at strategy, I think correctly identified a list of technologies that are critical to our future capabilities. If you distill it out, it comes out to about 10 or 11 individual technologies. Everything from cyber, to communications, hypersonic space, biotechnology comes out in the mix. That to me is also absolutely critical. We need to acknowledge that we have allowed some investments to fall by the wayside, and we need to reinvigorate that.

Now I will say, in the past couple years, the Pentagon has actually taken the right steps. There's actually been significant effort made to invest in key technology areas. Frankly, some of those efforts have been more successful than others. But at least it's the beginning of the acknowledgement that we have a problem, and we need to step up to the plate. What are those areas? Well, obviously, I have strong emphasis on hypersonics. I think that's one of the key technology areas. The good news is that coming out of the last administration, there were significant resources put into hypersonics. And with this new administration, those resources have continued. So when the most recent Pentagon budget dropped, there were relatively insignificant changes to the large plus up in hypersonic had been written into place. So that's good. From several standpoints, not the least of which is it's showing us that both sides of the aisle, recognize the importance of this technology and the threat, and that needs to continue.

I think we see a continued emphasis on the importance of areas such as artificial intelligence, biotechnology in most recent NDAA, biotechnology gets called out explicitly in the same way that artificial intelligence was called out in previous years. So that's all good. But having said that, we need to be looking across the board to those technologies and asking the question, frankly, what is going to scare China? If our idea of hypersonics is producing five missiles, doing a demonstration, declaring success and going home, that's not going to scare anyone. We need to be producing these technologies at scale. We can't stop at 10 hypersonic weapons or 100. We need to be in the thousands to actually have an impact. Same thing with artificial intelligence. What's going to scare China. Just developing capabilities, doing a demonstration, having DARPA fly an artificial intelligence system against the pilot. Those demonstrations are great. We need to follow through. We need to deliver those capabilities into the battlefield. And that's the path that I want to see us on, as our new strategies are evolving.

Rebecca Heinrichs:

Just real quick then too. And so you think, not just developing them at scale, but then also testing. Can you say something about the necessity of increasing the tempo of testing?

Dr. Mark Lewis:

Absolutely. That's a great question. So last week I actually read an op-ed where someone was claiming that we're going too fast in hypersonics. And I wanted to scream and rip that op-ed in pieces. Because in fact, it's the opposite. We're going too slowly in hypersonics. And one of the reasons we're going too slowly is because of our testing limitations. We spent decades decommissioning tunnels, making it more difficult for us to do flight tests. And the NDAA actually addresses that as well. So the Pentagon has now been given a go to do an assessment of testing. We need to rebuild our testing infrastructure. That means ground test capability, but more importantly, flight test capability. We need to be testing more often. We need to be in the air when things fail, we need to get back into the air more quickly.

One of the horrible stories, I think that comes out when we compare what China has been doing with what the U.S. has been doing. Their testing rate has been absolutely phenomenal. And their success at testing has been phenomenal, because when you do something often enough, you get good at it. And if you look at our testing, it's been an embarrassment. We've had failure after failure. And I think it's pretty straightforward why. Because we've lost the bubble on how to do this. We haven't trained people on how to do this sort of testing. And we make it so difficult that every failure, leads to a major production, and months and months of delay. That's definitely something that needs to be fixed.

Rebecca Heinrichs:

And then I know something else that John Hyten has talked about too is that, sometimes whenever you fail, you still learn a lot from those failures. And so it's a cultural problem that rather than taking so much time after each failed test, we have to just more quickly learn from that and go on.

Dr. Mark Lewis:

I do caution them. I try to divide failures into two bins. There are smart failures and dumb failures. Smart failures are when you thought you understood something, you fly it, you do whatever, and it doesn't work, and you learn from it. Dumb failures are the fin falls off, the battery voltage is low, it's bad systems engineering. And we can never use the first category as an excuse for the second.

Unfortunately, we've been seeing a lot in the second category recently. And that gets back to our lack of testing tempo, the lack of experience of our teams, and our lack of infrastructure.

Rebecca Heinrichs:

Great. Timothy, National Defense Strategy, supposed to come out this month. We have now mentioned this phrase, competition, great power competition, which is better than not acknowledging that China is not just merely just a friendly country that we trade with, but are we really competing or is it more confrontation possibly. And would it be more useful? What would you like to see out of the National Defense Strategy in terms of language and thinking that gets us planning for deterring and then defeating the adversaries to deterrence fail?

Timothy A. Walton:

It's a great question. Thanks Rebecca. In terms of the National Defense Strategy, I'd say that the most important priority is a commitment by the secretary of defense, Austin, to closely work with Congress to actually implement it. If anything like the sort of stark outlook presented by Admiral Davidson, who was the former Indo-Pacific commander is possible this decade. DOD really should be making some major changes in terms of reevaluating its priorities and directing resources towards those most important concepts and capabilities that can dissuade or deter aggression moving forward. Unfortunately, I think DOD right now has a bit of a credibility issue with Congress. After DOD essentially ignored Congress in

last year's budget proposal, when they pretty much didn't put any funds towards the original intent of the section 1242 Indo-Pacific deterrence initiative language. And after lots of study, this Global Posture Review came out, and at least the public reporting suggests that the conclusion was U.S. posture is okay. It was surprising. And I think that this really hasn't been helpful in terms of building a good relationship with Congress.

What could be some good steps moving forward now that hopefully the defense strategy will be released? I would say is first, we should see sort of some significant construction of infrastructure and logistics projects being launched throughout the Indo-Pacific this year. Perhaps the authors of the Global Posture Review thought it would be better to talk less and do more. And I think that's very wise. Maybe a decent number of these projects probably should be classified or at least shouldn't be publicly released. But regardless, if we are acting with the haste and urgency we need, we should be seeing a lot more being done in terms of posture and new projects being launched or existing ones being modified this year. Another area that I think is relevant to focusing on the most important priorities and that could be a bellwether for change, is in the department of the Army Budget. So for the past several years, the Army has done, I think a very good job through their night court process of focusing on their top six modernization priorities.

So they've optimized to steer funding to conduct research and development of their modernization priorities. And that's been going very well. But as some of these technologies now reach some growing levels of maturation and as budgets are either flat or inflation eats them up, there's going to probably need to be greater prioritization within that R&D portfolio, picking some winner losers, or at least sequencing the programs a bit more. And then I think there's also going need to be a more critical look at army force structure itself. Army secretary Christine Wormuth has, I think, effectively articulated the Army's role in the Indo-Pacific. Providing protection, long-range fires, communication, logistics, and all these capabilities. But if the army is actually going to focus on that mission, it needs to scale that up a lot more than what we're seeing right now in the Indo-Pacific.

And that's going to require, I think, rebalancing from some other capabilities that aren't as relevant to either the Pacific or European contingency, to be honest, and bringing those forward. So for example, if the army were to cut a single active component stryker brigade combat team, it could save over the course of five years, more than \$9 billion that you could then reinvest into air and missile defenses, for instance, to counter all these Chinese strike threats that we've been talking about. Those that require some big choices and big trades moving forward that I think apply some different metrics regarding what success for the army, where maybe it's not just the size of the force, but the effectiveness of the force in a Taiwan scenario, a Japan scenario, or some other scenario moving forward.

Rebecca Heinrichs:

Great. Well, I'm going to keep you here for just a minute more then, since you talked about those strike threats. We've talked a lot about missile defense, air and missile defense and the importance of hardening some of these critical assets that the U.S. has there now in the region, and should have more of. Can you talk about that? The importance of both active and passive defenses in terms of prioritizing what we should be doing in any area.

Timothy A. Walton:

Certainly. I'd say, sort of on the whole, the current U.S. air and missile defense capabilities are relatively brittle. And so it's an architecture that I think could be relatively easily neutralized or paralyzed by an adversary like China. There have been a number of studies, I think over the past decade by organizations like RAND that have conducted sort of examination of the trade space and identified a set of solutions. But now I think we need to stop from just admiring the problem of defensive Guam, defensive Okinawa,

defense of any other location, and actually move to resourcing the most promising capabilities and concepts to address the challenges moving forward. Some of the areas that I think have lots of value, I'd start off by saying, first, in terms of the area of passive defenses. Passive defenses include investments like conditional infrastructure. So you could disperse more redundancy, reconstitution equipment, hardening of some sites, camouflage, concealment, and deception.

All of these capabilities, analysis after analysis have proven that they're very effective in terms of forcing adversaries to increase the salvo size they would need to launch. Which at the very least imposes an opportunity cost at the tactical and operational level. And then also in terms of allowing friendly forces to continue to conduct operations. Because as we've discussed, China has an enormous strike capacity, and it's only growing greater each year. So the goal really shouldn't be to establish a perfect defense everywhere, but rather appropriate levels of defenses and then reconstitution capabilities so that, that port airfield communication site, whatever it is, can continue operations, even though an attack takes place. And passive defenses, right now the bulk of air and missile defense investments really go towards active investments and active capabilities. But I think some additional investment towards passive systems could have lots of value. And then briefly, the other area is in terms of making air and missile defense forces themselves more survivable.

Currently, air and missile defense architecture, special ground-based air defenses, are really optimized to provide defense against small salvos from less advanced foes like North Korea or Iran. When going up against China, it's likely that these forces would be targeted and then promptly destroyed, which would then open up the door to continued following attacks by aircraft and other assets moving forward. So to make those air and missile defense forces more survivable, I think we need to make some basic and straightforward investments like more personnel in air defense artillery units, so they can have more tactical mobility, can follow some best practices in terms of tactics, techniques, and procedures. Some camouflage, concealment, exception technologies. Additional passive and multistatic sensors. Some investments so that their systems are actually more tactically mobile.

And then some new kinetic and non-kinetic effectors. A lot of these technologies are relatively mature, but do require some more integration moving forward. And I think the good news is that, we can reorient our funding to focus on these most important capabilities and make it so that we're fielding the necessary forces within the coming two, three, five years to address some of these challenges.

Rebecca Heinrichs:

And that was a great last point to end on for this round too, because that the timing matters. Just that the window is actually now. And the sense of urgency.

Timothy A. Walton:

Correct. Because there are some capabilities that are going to take a lot more time to develop. In terms of some advanced interceptors or some advanced non-kinetic systems to counter perhaps. The more stressing hypersonic threats, for instance. That's going to take some more time. There are lots of though, low hanging fruit opportunities that just require more personnel, require more software writing to be able to link different systems, or will require buying some off the shelf capabilities that we have, but we just haven't prioritized for different reasons. The latest National Defense Authorization Act actually had some, I think, promising language for what they called a Mission Manager program. It's going to be a pilot program in which the Office of the Secretary of Defense's Strategic Capabilities Office is supposed to work with combatant commanders to solve challenging operational problems. They identified defensive Guam and its surrounding areas as one of them. And hopefully, this could be a funding vehicle and a mechanism to improve, I think, this interaction between combatant commanders and the OSD and steer funding towards those high payoff capabilities.

Rebecca Heinrichs:

Great. Now, Chris, there's was recently a really nice P5 statement where these nuclear powers came and said that they're essentially all committed to this idea that nuclear war cannot be won. What do you have to say about that? About China's participation in that statement, and looking at their force about how they're thinking about it. And then I'd love to hear you give us some ideas about what you'd like to see in the Nuclear Posture Review, because the Nuclear Posture Review is going to come out after the National Defense Strategy. And so what would you like to see in there that demonstrates to us that this administration understands the threat and that we need to be responding in a way to have a credible deterrence based on what the Chinese are investing in.

Dr. Christopher Yeaw:

Right. Thanks Rebecca. Interesting statements, yes, coming out of the P5. Both of those statements, Article 6, we're all committed to Article 6, and we all believe that a nuclear war cannot be one and therefore should not be fought. It is probably counterproductive, but I would argue it's counterproductive for the United States to join in, in that kind of hypocritical declaration of the P5. Because clearly, two of those five, don't believe either of those things. It is inconsistent, all of China's breathtaking expansion of their nuclear program is inconsistent with a commitment to the Article 6 of the NPT. Obviously, they are in an arms race. Additionally, both Russia and China are pursuing theatre-range nuclear systems at the ultra low, very low, low yield level that are designed to be employed in warfare.

That is inconsistent with a statement that nuclear war should not be fought because it cannot be won. So both of those statements, in fact, are not believable when you look at the posture of either Russia or China. And we should not join in that hypocrisy I think. As far as the NPR, I think first rule, do no harm. I think there are a lot of harmful potential discussions going on, whether that's sole purpose or no first use, or eliminating a leg of the triad, or, well, instead of investing in GBSD which is a modernization of the ICBM leg, let's just try to hobble along the Minuteman-III. None of those are good ideas. And they should all be rejected. And hopefully, they will be. I think the second thing that we have to kind of, it's kind of a reset as we look at the threat posed by Russia and China.

And this is a threat again, not just based on numbers, but based on their strategy, based on their planning, based on how they think they're going to execute a war, should war come with the United States. Based on all of those things, we need to make sure that our mindset is the modernization of the triad, is the floor and not the ceiling for nuclear modernization. Unfortunately, that's a little bit of bad news because it's expensive, just like all the other capabilities that we've talked about here. These are all expensive. Nevertheless, they're needed. And in particular, as you look at escalation space and you see this gap in theatre nuclear escalation, the gap that I would argue Russia and China are both building forces and plans to exploit. We need to close that gap. We need to do something to countervail against those capabilities. Now, in the last NPR, which I was a good fan of, since I was at DOE, when, when we worked on it, we put forward two very modest amendments to the nuclear posture.

And that was, the low-yield 76 and the sub-launched or sea-launch cruise missile, nuclear. Both of those should be retained. We should recommit on the [inaudible 00:36:24]. That is the capability that will message to both Russia and China, that they cannot see a gap in theatre nuclear escalation, and exploit it without cost. It will come at great cost. Now, do we need to have the same numbers of systems? No. We just need to have a reasonable, a plausible countervailing capability that will convince the adversary that they cannot go there without incurring great cost. Right now, they both believe that that's an area where they can escalate to, and essentially, we don't have an answer because we won't go to the strategic nuclear level, and we don't really have theatre nuclear forces. So I would say that's another thing we would want to look at.

And then finally, as we look kind of deeper into the 21st century, it's clear that that Russia and China, both long term competitors, are looking to build forces suitable for their strategies. We talked about strategies earlier. They have a nuclear strategy that they would like to employ these nuclear forces within, and we need to be able to adapt. We have to have some resiliency in our system and adaptability in our system, so that if we need a dual capable system fairly rapidly, and at reasonably low expense, that the NNSA infrastructure can deliver that. And I think if we set NNSA up to, on that kind of an adaptive footing, that would go a long way to assuring allies and to deterring would be aggressors. Namely, you can't get by and think that there's going to be zero cost to you if you escalate across the nuclear threshold.

Rebecca Heinrichs:

And so just to be clear too, so everything that you just said, I mean, the point here is that the United States is still seeking to deter and we still have time to deter.

Dr. Christopher Yeaw:

Yes.

Rebecca Heinrichs:

And that it's the Chinese that might be, something that analysts talked a lot more about publicly in previous years, about what the Russians were doing, that the Chinese might be thinking of possibly employing a low-yield nuclear weapon in a purely conventional conflict.

Dr. Christopher Yeaw:

Yes.

Rebecca Heinrichs:

And so the aim for the United States at this point is to convince them that that would not be worth the cost in order to successfully increase the credibility of our deterrent.

Dr. Christopher Yeaw:

Absolutely.

Rebecca Heinrichs:

Because we're not the ones that are threatening, of course, the nuclear war it's the Chinese. And so my question then is, you'll have some people say, listen, the Chinese are investing in all of these particular systems because they are feeling intimidated. But this is sort of a natural outgrowth of all of the U.S. nuclear modernization program, that this is something that any country, self-respecting country would do that if it just wants to compete with the United States, that we shouldn't view this as threatening, because we are really the cause, the first cause. What would be your response to that? I know you got written in this great piece about how it's been the absence of U.S. investment.

Dr. Christopher Yeaw:

Absolutely.

Rebecca Heinrichs:

But if you can talk more about that in particular and just flash that out, this is something new and it's an outgrowth of China aims, political aims about what they might be considering.

Dr. Christopher Yeaw:

Absolutely. Yeah. That's 100% correct, Rebecca. The United States in the nineties divested essentially of all of our theatre nuclear forces. Under the Presidential Nuclear Initiatives, the first round and the second round, the United States withdrew all the way to just a small number of B61s located in Europe. And that's it for theatre nuclear forces. That is, in stark contrast to Russia who began to adhere to the PNIs because they were reciprocal and rather could then backslide. Back to a posture, that is heavily theatre nuclear forces. Meanwhile, China continued to accelerate its theatre nuclear forces through a variety of delivery systems, ballistic missiles, predominantly everything from the DF-15, all the way to the DF-31 could be considered a theatre force as well. Not that maybe not the 31A, of course, but the 31. All of those, together with the potential yield testing.

So something that the United States went forward with in the nineties was a zero yield test policy. Meaning, under the comprehensive test ban treaty, which we signed, was not ratified by the Senate. Nevertheless, we adhere to a moratorium. And under that moratorium, U.S. policy is zero yield, means, zero nuclear yield, period. That is clearly not the policy concoction for Russia and China. Zero yield for them means, as long as the other side can't detect it, that's that's zero enough. So they've been testing all along and really with the intent of supporting these low-yield nuclear warheads that they've been building. In fact, there's a new test area in the nuclear test site in China, which it doesn't get a lot of media play, but it's there and it's being actively used. So that's, again, in stark contrast, to the United States. It's not the United States that's expanding nuclear testing, it's China and also Russia.

When you look at the introduction of the low number of 76 low-yields from the last administrations NPR, that's a very small number. It's a very, very modest increase compared to, take again, for example, the Pingtung complex, a vast expansion of that complex. They're clearly turning out large numbers of nuclear warheads and they've positioned themselves to do so over the long term. That is not where we are in. In fact, NNSA has the goal by 2030, to be able to produce 80. I would say, China has already positioned itself to produce 80 right now, and they're producing those. So again, there it gives the lie to this concept that it was the United States aggressive modernization in nuclear that's fueling this. It's not

Rebecca Heinrichs:

Great. And I'm actually going to jump to Timothy and then back over to Mark. I want to talk about the doability of all this. Because I think that this is really important. We can start talking about everything that China's doing because part of the problem as Mark mentioned is, first of all, we have to admit what the problem is, and we have to be able to be much more comfortable talking about the different things that China's investing in, in particular and why they're doing it, which is to push the United States out of the region, or to have the ability to coerce the United States. In other words, these are not purely for defensive purposes. So there is a tendency then perhaps to maybe not outright have a defeatist attitude, it's too hard, but take a much more modest approach to what can be done.

And you and I have talked sort of, here at work, that that's not the right approach. That we should have a more realistic and optimistic attitude about what can be done and where we are in the timeline in order to really successfully get some of these things. You talked about some great progress with Congress. But can you talk to me a little bit more about just the doability of deterring Chinese action and what you're looking in particular and what you're most concerned about that China might do in terms of acting aggressively against Taiwan and why these particular things that you have mentioned are in fact doable and in an appropriate timeline, if the United States has a political will, and can in a bipartisan fashion focus on them?

Timothy A. Walton:

I think that's right, Rebecca. Thank you. I think over the past decade, we've seen this swing from, I'd say, lots of arrogance, perhaps that the U.S. was technologically superior or had more military experience or that Chinese technology was too immature. To now, I think, a growing sense of fatalism perhaps. That the U.S. wouldn't be capable of aiding its allies or partners in the Philippines, Taiwan, Japan, Korea, in their hour of need. I think the truth is probably somewhere in between. But we will need to, I think, focus on those promising concepts and capabilities to be able to counter the Chinese. And specifically how I think we want to create the conditions where we could deny other aims of aggression. Where at the very least, impose sufficiently high costs that Chinese leaders will reconsider the use of force. To do that though, I think we need to have a much better understanding of Chinese command and control and Chinese decision making, and where do we target our efforts moving forward and actually have capabilities and concepts that target that and exploit it moving forward.

Sometimes I think there's a view that Chinese decisions are irrevocable. And that the CCP, once they've made a decision to attack Taiwan or any other location, would never go back. Our research suggests that's really not the case. They can change their decisions. The CCP is likely more stable than many people give them credit for. But there are, I think, some high value areas where, if we have some new concepts and capabilities and we could feel them at scale, we can shape Chinese decision making. It is though going to require much better understanding of Chinese and Chinese Communist Party decision making, akin to what we had of the Soviet Union during the Cold War. And that's going to require, I'd say, lots of effort on the part of the intelligence community gained that intel assessment and then conduct operations to shape their decision making during the competition phase, so we won't get to a conflict.

Rebecca Heinrichs:

And then of course, it always gets back to a political matter, small P. And in terms of what our government needs to be able to face the reality that this isn't merely just a friendly competition with another country that abides by the same rules and procedures and that we have, we have competition with the Brits and the French. It's not like that. And so it really is more like a Cold War scenario. It's more confrontational. And so we should be thinking about it that way. And then thinking about our defense strategy, that way too. Mark, you can comment on anything that either of those two said too, before I get to my question.

Dr. Mark Lewis:

Let me first comment. This is an existential threat, and we need to view it in that way. I've had people say, "Oh, but we're going to get into an arms race." Guess what? We're already in the race. The Chinese are running the race, whether or not we choose to participate or not. And that needs to be our mindset. I think the comment that was made earlier that we haven't provoked this from the Chinese, except by creating a period when we took our foot off the gas. We created our own vulnerabilities. We stopped investing in areas. We stopped pursuing technologies as rapidly and as aggressively as we should have. And we did even worse. And apologies for coming back to the hypersonics analogy, but we did even worse. We demonstrated the technology in the 2010s, it all worked, it was proven out. And then we stopped doing it. And then even worse, we released position papers. We said, this is really key technology. This is an area we need to invest.

We basically handed it off to them and showed them an opportunity that they could jump into. And frankly, we made it easy for them. So I want to come back to your point of, is it doable? I would venture to say, none of us would do what we did. None of us would be in the fields that we're in if we thought it wasn't doable. We'd probably all head the cabins in the woods somewhere and hold up with cans of

food. Obviously it's doable. The United States is still the science and technology leader. For me, the most telling point is, bright Chinese students still want to come and study in our universities, not vice versa. Now that ever changes, we really have a problem. But for now, that's the case. We have friends, partners, allies in science and technology in a way that the Chinese will not, for quite some time. I suspect never will. And that is our advantage. We also have incredibly bright innovative minds. The way we tackle this though, is we unleash those minds.

We allow them to innovate. We remove some of the shackles. We all talk about how antiquated our acquisition processes are. Heidi Shyu, the Under Secretary of Defense for Research and Engineering very recently talked about how the palm process, means you've got a two year window. So if you've got an innovative idea, well, if you one incorporate it, you better have anticipate data that innovative idea two years ago, or else you're not going to get into the hands of your war fighter. We need to make those changes. And those are being acknowledged. And again, at the same time, we're seeing people stepping up to the plate, investing across the board in everything from artificial intelligence, biotechnology, cyber, all those technologies that we know that are important. We just need to pursue it. Now, we need to stop. We need to end the start-stop cycles that have crippled our capabilities.

Rebecca Heinrichs:

Yeah. And then this panel today has been focused on what the United States should be doing. And we haven't even talked about all the things that our allies can be doing, are doing, need to do more, need to do better, especially Taiwan when it comes to their own defense and what they need to be doing so that they can hold the line and time for everybody else to get there. When and if that does happen, of course, we're working. The purpose of this panel is to thinking about how can we be investing in the right kinds of capabilities and deployments to get on the front end of that, to deter those acts of aggression from happening in the first place. Thank you all so much for your research and analysis and for being here today to discuss this important topic. And thank you all for joining us for this virtual event here at Hudson Institute.