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Session 1: Readiness and Modernization Panel

Moderator: Adam Hebert, Strategic Communications Manager, MITRE National Security Sector(MNS)
Panelist 1: Lt. Gen. Richard M. Clark, Deputy Chief of Staff for Strategic Deterrence and Nuclear Integration, US Air Force
Panelist 2: Vice Admiral Dave Kriete, Deputy Commander of US Strategic Command
Panelist 2: Vice Admiral Johnny R. Wolfe, Jr., Director, Strategic Systems Programs, US Navy

Adam Hebert: My name is Adam Hebert, I'm the Strategic Communications Manager for MITRE's National Security Sector. Thank you all for coming this morning.

[Admin announcements]

Mr. Hebert: As everybody should know, our entire forum today is going to be unclassified for obvious reasons. It is on the record. And we do have a number of [inaudible] with us here in the house which is an important part of what we're doing today. So again, thank you to everybody for coming out on 12/12, and thank you especially to our first group of panelists here. I'll introduce them individually.

Starting to my left, Vice Admiral Dave Kriete, the Deputy Commander of U.S. Strategic Command. He's joining us from Offutt Air Force Base in Nebraska. Thank you very much for [fact tracking] everyone with your time. Admiral Kriete is a Naval Academy graduate and he at one point commanded what would have to be my favorite submarine, the USS Flying Fish. Thank you, sir, for joining us today.

To his left, Lieutenant General Richard M. Clark, the Deputy Chief of Staff for Strategic Deterrence and Nuclear Integration on the Air Staff. A U.S. Air Force Academy graduate. He's a former 8th Air Force Commander and a B-1 pilot. Sir, thank you as well.

To General Clark's left we have Vice Admiral Johnny R. Wolfe, Jr. He is Director of Strategic Systems Programs at the Washington Navy Yard. So he's essentially responsible for all of the

equipment that provides the Navy's nuclear deterrent -- the missiles, the submarines and all the associated infrastructure with that. Sir, thank you as well for making the time to come join us today.

I wanted to start with Admiral Kriete, a big picture question here. Now that nuclear modernization is getting a lot more attention nationwide for good reason, we're seeing a variety of threats that the nation has to face going forward. It's the rogue actor front, you've got the North Koreas and Irans of the world. There is the great power competition which is moving again with China and Russia doing a much more active job in modernizing their [inaudible] than the United States is. How do you assess the current and future threat environment, and what is STRATCOM doing to address that?

VADM David Kriete: Adam, thanks very much, and thanks very much for letting me go first. It's great to be here, especially alongside my comrades here, General Clark and Admiral Wolfe. What a distinguished group we get to speak with today.

This is a little bit daunting because I saw on the agenda that we have two former STRATCOM Commanders that are going to speak today, and I didn't see them here, but if they're not here yet that's probably a good thing for me because they might be auditing my comments to make sure things haven't changed too much over the years at STRATCOM.

Your opening lead-in to your question I think really is great because it hits on what I would tell you are the two biggest challenges that we face at U.S. Strategic Command today. Those two challenges are first, understanding the threat so that we can stay ahead of it. And the second is modernizing our nuclear forces. I'll talk just a little bit more about each of those if that's okay.

You know, at the beginning of 2017 the administration with really the Department of Defense in the lead spent about a year working on a Nuclear Posture Review. Went through everything soup to nuts, but it started off really over the first many months with a very, very deep threat review so that we could make sure we understood firmly the threats that our country faces today, the threats that we might face in the near term, and then for just as far into the future as we can project, what threats might be coming down the line.

So when we developed the nuclear policy and then from that the strategy and then from that the plans that we do with STRATCOM, we would always maintain a threat-based approach. Because in the end, the primary purpose of our nuclear deterrent is to deter threats against the U.S. and our allies, and to assure our allies around the world. It's really that simple.

So what the NPR concluded was that a triad and modernizing the triad so that we continue to have a triad into the future has been and remains the best way to help defend the country against a range of threats that we might face.

And make no mistake, our nuclear forces can't deter everything. But what they do deter is the worst possible things that could threaten our country. Those few things in the world, from those few countries in the world that have the capabilities and potentially the will to do us harm in a way that could threaten the very existence of our countries or our allies. So we focus our threat-based work primarily on Russia, on China, on North Korea. We also focus greatly on Iran. And we watch what other countries around the world are doing.

At STRATCOM, looking at the threat is the first thing we do in the morning and it's the last thing we do before we go home at night. We watch everything from the most tactical movements to the long term strategic maneuvers and plans, doctrine changes, the things that we can observe to best understand what threats we have to face so that we can then tailor our deterrent activities starting with modernization all the way through how we posture and train our forces to make sure that we stay ahead of those threats. That's really the focus of our work at STRATCOM.

I think that one of the fundamental questions that was asked in the Nuclear Posture Review that is always worth re-asking is whether or not the United States wants to or should remain a nuclear nation way out to the future. I think the answer is clearly that we have to be. If we're going to defend the country from the worst possible things, then we must field a nuclear force that's capable, credible, not only for us but also in the eyes of our adversaries so they see that, so that the basic elements of deterrence which involve the ability to impose costs or deny benefits, and to communicate that credibly to the adversary are always clear to them.

Day to day? Yes. But especially if we ever have a road to crisis or, and we hope this never happens, but in a direct conflict or a war with another nuclear power nation, in that timeframe on any given day if they consider doing harm to the U.S. or our allies in a big way using nuclear weapons against us, we always want them to look at our forces underpinned by our nuclear deterrent and say you know what? Not today. Not today. That's the choice we always want them to make. That's why we focus so much of our time and our work on understanding that threat.

Things are documented about what other countries are doing in the nuclear realm. They're fairly well documented. Russia, while it has abided by the limits under the New START Treaty with the United States has continued to develop a whole range of nuclear weapons capabilities on systems that fall outside the boundaries of the New START Treaty. So sometimes folks will think that since we have this bilateral treaty we've kind of maintained parity in the nuclear realm with Russia. While Russia has continued to develop other nuclear weapons capabilities, the United States has not.

So our goal is not to keep up with Russia. It is not to engage in an arms race. But it's really just to field the right deterrent in terms of capabilities and numbers to adequately deter. So the threat continues to change over the years as the other capabilities are developed that we don't currently have a way to address. And to the modernization of our triad, to ensure and sustain it for years into the future and the addition of just a few, a small number of additional capabilities that were called for in the Nuclear Posture Review are what was determined would best deter that threat as we move into the future.

Now China, although not on the same level as the United States or Russia in terms of nuclear weapons capability or numbers, continues to move very aggressively on fielding a full triad. In fact China has in many ways moved much faster than either the United States or Russia has in this area in recent years. We watch what they're doing very closely, and part of our [tell return] strategy is to use our nuclear force and communicate about it in a way that adequately deters all adversaries. Again, both day to day during peace time and if it should ever come to it, during crisis.

North Korea, all you have to do is watch what's in the news every

day and you hear something new about North Korea and their nuclear weapons capabilities, including their signaling, their messaging, what they say about it.

At U.S. Strategic Command 2017 was a very busy year. So if you remember through 2017 there was a steady drumbeat of long-range, short-range, medium-range ballistic missile tests by North Korea. At STRATCOM where I work, that require the entire battle staff to fold into the Global Operation Center, make sure that we understand what's happened, characterize it, communicate with senior leadership, and our first and foremost responsibility at that moment in time is to ensure that the safety of the United States, our allies overseas, are not threatened by the launch. That was a very busy time for STRATCOM.

The last year or so, not quite so much. That's actually a good thing. Because as we've kind of turned the tables on our relationship with North Korea with an overarching goal of denuclearization, our diplomats really have been in the lead. And USSTRATCOM still underpins all the work that they do in support of that denuclearization objective, but we're not running into the battle deck every day to characterize the next missile launch. I'd actually like to keep it that way.

But North Korea continues to develop a range of capabilities that could threaten us and our allies.

Iran, we watch Iran very closely. It does not currently have a nuclear weapon capability, but we are aware of the indicators that we would expect to see should they choose to go down that path again. USSTRATCOM will be ready for that if that day ever comes.

So our goal is to stay ahead of those capabilities that are developed by other countries around the world.

In terms of readiness, I'd like folks to know that the nuclear deterrent that we field today, this is both the forces in the field, the forces in reserve, the nuclear force that the U.S. fields as part of our commitment to NATO, that deterrent is safe, secure and effective today and this is a very important part of the work at STRATCOM as well as the work of many partners across the government.

This is kind of our threshold. Safe, secure and effective.

We're going to maintain them safe for the safety of our forces and the general public. We're going to make them secure so that we can test them, no one else can threaten them or get at them. And we're going to maintain them effective. What does that mean? We go to great lengths to ensure that every one of those weapon systems, regardless of how old they may be or how long they've been in service will always, always get the job done if ever called upon to do so. Safe, secure and effective. That's our standard.

But we can't maintain those standards with the current weapon systems forever. Hence the second biggest challenge that we have at STRATCO is getting on with the nuclear modernization program.

The Nuclear Posture Review affirmed that we need to modernize the triad and laid out the path that we're going to use to do that. How and when we're going to replace the bombers, the intercontinental ballistic missiles, and our sea-based strategic deterrent on our SSBN force.

There's great strength in that triad. The unique attributes or each of the three legs complement one another in ways that provide an impenetrable, undefeatable force for any adversary to see. Adversaries today or adversaries that we can even envision as far into the future as we might look. Hence the need for the triad.

Now that presents a problem or a presents a challenge in that the timeframe for completing the modernization of all three legs of the triad is such that we have to stagger them. Because of previous decisions that's all history, where we are now is a period of time where all of the three replacement programs have begun and I think they're doing okay so far. My service colleagues will talk in a little bit more detail about that, but we're going to want to replace them all at the same time. And in military parlance or maybe even in business parlance, that means we have an accumulated level of risk, and we acknowledge that. But what I would like to ask is for us to focus on a strategy for ensuring our success in completing that modernization program. It's easy to point out the risks. It's easy to point to previous weapon systems that have been late or over cost or over schedule, and those are all important things to know. But we need to have a plan for success. We can't extend the submarine anymore. We can't continue to apply the ICBMs with that effective part of our threshold without replacement. So we've got to have a plan for

success and I think that should be our focus going forward.

There's one other part of the triad that I'd like to mention and it's called NC3 -- Nuclear Command, Control and Communications. Maybe we need to call it quatrad if we're going to include NC3.

Coming out of that Nuclear Posture Review, Secretary Mattis in his great wisdom recognized that if we don't apply a similar level of effort towards recapitalizing our Nuclear Command and Control and Communications Systems in the future. They will age out. They will become vulnerable. They will become ineffective at connecting our senior leadership with our operational forces, rendering our triad less effective than we need it to be.

So we've been given this assignment at U.S. Strategic Command where the Commander is now the lead for what we call the NC3 enterprise. We've formed an NC3 Enterprise Center. We have a tremendous number of some of the hardest working and smartest civil employees that we can find. We've reached out to other places outside of the government to bring the best talent and the best minds together to start to envision what NC3 should look like in the future. This is a tremendous effort, and actually for us I consider it a historic opportunity that we have for the first time ever to actually design, first envision and then design and ultimately field a system that will get the NC3 part of our nuclear mission done as one cohesive capability, vice what we have today which is essentially a patchwork of really over 150 different individual systems that have been fielded individually and put together over time to get the job done.

Let me be clear. Those systems, the NC3 that we have today, they are still also safe, secure and effective and they are getting the job done. We understand the status of those systems. We work hard on understanding and then maintaining and improving the readiness where we can, but just like the three legs of the triad, we can't do that forever. Hence we've got to recapitalize NC3. That's an important part of our work today.

The last part about our nuclear mission that I would like to mention in these opening comments is really maybe the most important part of our nuclear force and that's the people that get the mission done. Under STRATCOM we have about 150,000 men and women, active duty, reserve, national guard, a large number of civilians as part of that team that really work on this nuclear mission and our deterrence mission every day. They're

some of the best folks that you'd ever want to meet.

I sometimes get this question from folks about whether or not the younger generation kind of has what it takes to do what I guess the older generations have done in the past or what we continue to do today. The answer is pretty simple. Just come on a trip with me to visit the submarine base in King's Bay, to visit the bomber base in Whiteman, talk to the bomber crews, go to F.E. Warren and see the launch control centers, the really young Americans that are getting the hard work done every single day, that are actually out there on the front lines putting themselves at risk, doing a mission that demands the highest standards of performance, compliance, personal reliability that we have anywhere across the Department of Defense. That amount of talent that we have really is eye-watering in a lot of ways.

I'll wrap up there with the opening comments, and just say, you know, if asked do we want to remain a nuclear nation in the future? I would say we have to be. If we're going to defend the country we must remain a nuclear nation into the future, and if we're going to do that, that demands that we get on with our modernization program right now.

Mr. Hebert: General Clark, the Air Force is responsible for two of the three triad legs but it's actually more complicated than that because you've got ICBMs, you've got bombers, you've got gravity weapons, you've got cruise missiles. Admiral Kriete spoke about safe, secure, reliable. What is the plan right now to keep your existing equipment in that status and addressing the future [status] as well?

Lt. Gen. Richard Clark: A great question. It's a big question, so allow me a few moments.

Thank you, Adam, for having us, first of all. I also want to thank Admiral Kriete and Admiral Wolfe for being here with me. It's nice to have them up here on the stage taking at least two-thirds of the heat and maybe a little bit more.

But in answer to your question what I'd like to do is really piggyback off of Admiral Kriete's great remarks. When we in the look at a problem set, like he mentioned it has to be threat-based, and we take our cues from our combatant commanders, especially STRATCOM, in this area.

We also view the threat every day. We start with it and we end with it and we see it in very much the same way. And as it's laid out in our National Defense Strategy and our Nuclear Posture Review.

But when we look at it from the threat, we next take it to the strategy. What's the strategy that is in place to defeat that threat? Then you have to look at what's the concept of operations to execute the strategy to defeat the threat? Then what are the requirements for that concept of operations? Then what's the acquisition strategy to meet those requirements?

So there's a framework that we look at every problem with, starting with the threat, to the strategy, the concept of operations, the requirements and the acquisition. So I kind of want to piggyback. He's already talked about the threat, and we do see it the same way. And he's talked about the strategy, that strategy of deterrence that we as a nation have decided is how we will deter from that worst day ever happening. It is a combination of cost imposition as well as denying the enemy the success that they might think they can achieve so that when they make that calculus the answer is no. Today's not the day to do it.

So the threat and the deterrent strategy are key. But for us in the Air Force, our main role comes when we look at the concept of operations, and as Admiral Kriete mentioned, the triad is the concept that we have determined is the best way to execute that deterrence strategy that's been laid out for us. And Adam mentioned we have two-thirds of the triad. We have two legs. We also have three-fourth of NC3, Nuclear Command, Control, Communications, as the force provider to STRATCOM. They're very important to us.

We look at the triad, the thing that I want to mention, there has been discussion about whether we actually need a triad or not, but when you come down to it, we've had about ten administrations over over 60 years that have come back to the same conclusion that the triad is the best way for us to complicate the adversary's strategy, to be able to impose costs, and to be able to deny the enemy from achieving the strategy that they might set forth.

In fact as recently as Secretary Mattis when he first came into office or into his position, he wanted to explore our nuclear

enterprise, and he did look at what are the possibilities of a diad or a triad? Should we do this? Should we not? And as only Secretary Mattis, General Mattis does, he went deep into it, to look into it to educate himself on it and to come to his own conclusions. In the end there's a great quote from him that says America can afford survival, and his conclusion was that the triad is the best way for us to deter.

So it is validated, it has been validated for decades, and we in the Air Force look at it as our two legs are the part of it that we're responsible for, but all three legs have to be there for the synergy of this concept to work. And when you look at the survival and the stealthiness of the SLBM, of our subway, you look at the flexibility and the visibility of the bomber leg and you look at the readiness and the responsiveness of the ICBM leg. There's a synergy there that if you take one of those legs away the other two become significantly less effective and we have to have them all three together. There is no success really for the way that we've laid these legs out in the concept of operations that we have that we could succeed without one of them.

So let me talk just a little bit about what are the requirements of the two legs? And I know Admiral Wolfe is going to talk about the SLBM leg, but let me talk about the requirements that SDTRATCOM has given us for our two legs that we're responsible for.

First the ICBM leg. It is, as I mentioned, the most prompt and responsive. We have a number of ICBMs. There's around 400 ICBMs that an adversary would have to take into account if they were to execute a strike against the United States, and that number complicates the strategy. It puts that question in an adversary's mind, could I actually achieve objectives? And when you take into account 400 targets that have to be taken into account, because otherwise there is a prompt response that is ready to go within minutes if that attack ever occurred, that goes into that calculus.

So we know that those targets or those ICBMs have to be ready at a moment's notice. That's the requirement that STRATCOM has for us, and that's what we're driving towards.

Sometimes when people talk about what number do you need, there's a whole discussion that we could have on that. But I'll give you one quick anecdote on this. If you didn't have those 400 ICBMs

that are ready to go at a moment's notice you would actually cripple our nuclear enterprise with about ten targets. Ten strikes could cripple our nuclear enterprise. So you can take out our two sub bases, our three bomber bases, STRATCOM, the Pentagon, and our three labs. If you hit those targets -- at Los Alamos, at Sandia and at Livermore. If you took out those targets alone, if an adversary were able to actually do that, our nuclear enterprise would be devastated. But an adversary has to also now with the ICBMs take into account 400 other targets. If they don't, there will be a response immediately.

So there is a calculus that gets complicated by our ICBM leg and it's ready at a moment's notice, at a minute's notice I will say, and it is very responsive. So that's a requirement that we have and that we are committed to.

The other requirement is that flexible and visible leg and that's our bomber leg and the weapons that are associated with it. What that does is, the way I look at it, it's sort of like the rheostat. Every day our adversary, they don't know where our subs are, they have no idea. They know where our ICBMs are, but given those two legs, the world looks the same every day with those two legs. But with the bomber leg, our senior leaders have the opportunity to change the look of our nuclear deterrent. They can generate bombers if necessary. And that gives a different look to our adversary to go okay, things are increasing. The readiness level has changed. Or we can load weapons on those generated bombers. Or we can taxi those bombers to the [hold] line, or we can launch those bombers. And conversely, we can recall that and reverse those decisions as necessary. It gives our senior leaders, our decisionmakers sort of a dial that they can change the look and give that visibility to our adversaries to understand and to message to them what our intentions are. But it's also the flexibility to pull lit back as necessary. So that's another requirement that STRATCOM has for us to be able to execute the ConOp that we have.

So the flexibility and visibility of the bomber leg, the prompt and responsiveness of the ICBM legs are key and critical to us so if we talk about those as a requirement, let's talk a little bit about the acquisition strategy that we have to meet those requirements.

For the ICBM leg it's really first sustaining the Minuteman II system until we bring the ground-based strategic deterrent on-

line. And Minuteman III is, as you know, an old system. It's 39 years past its service life. However, on the backs of our airmen we've been able to sustain it and we're going to be able to sustain it until we bring GBSD, the Ground-Based Strategic Deterrent on-line, but the margin is very slim. It's very slim. We work with our partners at NNSA to bring the delivery system and the weapon on-line, and it has to work. We have to make this transition work for us because we can't afford to have a gap in order to sustain that requirement that STRATCOM has called us to bring on.

So when we start putting weapons into holes in the late '20s and 2029-ish, 2030, all the way out to 2036, we're going to have to have a very smart transition plan so that not only do we sustain the new system into the recapitalization or sustain the old system to the recapitalization of the new system, we have to maintain that deterrent all the while, the whole time that we're doing that. We can't have a lapse in deterrence throughout that.

So that acquisition is going very well right now between the Air Force and NNSA, and we're very happy with the modernization program, but we have a long ways to go and we have to stay consistent, we have to continue to be committed to this and given the current budgetary situation that we're in, there's always going to be risks to it but we have to make sure that we stay committed and stay in the fight on it.

As far as the bomber leg goes, we're working with a bomber system, the B-52, that's older than eve Johnny. [Laughter]. I mean he is old, but he's not that old. [Laughter].

But the B-52, and this will sound kind of odd to some folks, but the B-52 has a lot of legs left in it. We plan to modernize that system with new engines, with new radar and several other systems that will bring it into this century and for some decades to come and allow it to still be a critical and key part of our nuclear deterrent mission. And allow it to be that standoff weapons delivery system that we need. You couple that with the Long-Range StandOff, the LRSO, that's going to take the place of the ALCM, we still have a formidable deterrent weapon system.

The modernization of the program is going well so far, but again, just like ICBM, we have to stay the course and we have to stay committed to that.

AS far as the ALCM, the Air-Launched Cruise Missile that the Long-Range StandOff munition will take the place of, again, ALCM is 25 years past its service life. We have issues with that from an availability, because our stockpile drives down as we test the system. So we have to get new numbers, but we're not building new ALCMs. We have to build a new system. From a reliability standpoint it's very old and that reliability continues to go down. And from a survivability standpoint, the ALCM is losing some of that because our adversaries have developed air defenses that challenge the ALCMs, so we need a new system to be able to answer the challenges of availability, survivability and reliability. And that's LRSO, Long-Range StandOff munition, that will take us into the future and be coupled with the B-52 as well as the B-21 which will take the place of the B-2 bomber.

So the B-2 is, we're going to sustain that into the B-21. The B-21, our stealth bomber, will be that delivery platform that not only will give us some standoff capability but will also give us the ability to penetrate and take the place of the B-2. And again, when you couple the standoff, the penetration capability that we have right now with the B-52, the ALCM and the B-2, we're transitioning now to the new B-52, the LRSO and the B-21 to sustain and be able to continue to offer us that deterrent from that our current bomber systems give us.

That's where our ICBM leg is from a requirement and acquisition standpoint, and our bomber leg. And then I want to talk about just real briefly NC3 that we have to provide for STRATCOM and really for our country to be able to detect our adversary actions, to give our senior leaders the opportunity to decide and then to direct our forces as to where they're going to go. As Admiral Kriete said, NC3 has been kind of sporadic. Lots of different pieces out there, but we're working with STRATCOM to bring those pieces together so that between the parts that the Navy owns and that we own, we bring them in together as one weapon system and modernize them for the future to detect direct and add the decision capabilities for our senior leaders.

So from a strategy, a threat strategy ConOp requirement acquisition, this is the way the Air Force sees our nuclear deterrent and where we're going in the future, and I'll look forward to your questions.

Now I'll turn it over to Admiral Wolfe unless you had another question for me.

Mr. Hebert: It seems that the Navy sometimes gets a pass when these nuclear modernization discussions come up because it's always presented as the submarine leg of the triad. It's the most survivable, it's the most reliable, it's the most stealthy. So if you could address what is actually needed to keep it safe, secure and reliable that would be good.

VADM Johnny Wolfe: Thanks for the question and Adam thanks for having us here. It's always great to be with Admiral Kriete and General Clark.

General Clark and I tend to do these a lot together, which is why he calls me old, but I'm going to help you with the B-52 because I'll put this in perspective. If you think I'm old, my grandmother, which you don't even know this, my grandmother worked on the B-52 when she was a government employee way, way, way back when. So that puts into perspective what you guys are dealing with. So I certainly appreciate what you guys are going through.

But based on that question, let me finish out the three legs of the triad and let me start with, of course, and Adam just said it. Our requirement through STRATCOM is we have to be survivable and we have to make sure that we have assured second strike. That's what the Navy brings to this game and why the triad, and we go through the Navy's complementing what the Air Force is doing with the other two legs.

So when you take all that in its totality, I think you've just gotten out of the three of us why the triad is the right answer. It's not by chance, it's not by happenstance, it's methodical, it's thought through, and it is the right solution.

So with that, let me address, I don't think the Navy gets a pass, Adam, but let me just explain to you where we're at. I really want to start, and I'm going to put this in four categories because I think it's important as I look at as the materiel provider what are we doing for the Navy's support to the triad. I put it in four categories. Those categories are the platform, which is the submarine which I'll talk about. It is the infrastructure. It's all of the physical buildings, all the things that we do both with the government and our contractors. It is the weapon system which is my primary responsibility. And as Admiral Kriete said, it's the people. So let me talk about

the readiness today of those four.

So today if you look at what we do on the Ohio Class submarine, and Adam, I appreciate you saying that, but we continue to test the system. We continue to prove for STRATCOM the reliability and the accuracy of that system. So we do periodic launches to prove that. I mean we can do a lot through analysis. We can do a lot through ground testing. But ultimately, for all of us, the real proof is actually taking this from the platform to target to prove that the system works.

So we do that. We do that at a minimum with at least four a year. So let me just talk about the last year going into the holidays.

We launched five missiles this year for tests to prove that end to end capability. All five of those flew exactly like we wanted them to fly which says from a reliability, from a surety perspective the system is good. But we flew at least two of those missiles were the oldest that this program has ever flown. It's the oldest the Navy has ever flown. We had rocket motors that were almost 27 years old which again, for us says as these systems go to sea, we've got to start modernizing them because we all know just from a material perspective things will eventually age out. It's like your car. You can replace the oil in your car a lot. You can replace the tires. But eventually the mechanical things start to wear out. So that's where we're at.

We watch that. Today we've got no indications that we're seeing any of that degradation, but we can never let ourself get there. As Admiral Clark said on his side, much like on our side, we can never get to the point where either one of us don't provide STRATCOM what they need for those day to day operations that Admiral Kriete talked to you about just a few minutes ago. But today, the health of the fleet, the health of the submarine, the health of the weapon system, our people that we've got doing this are doing well. But we've got to look to the future.

So with that, and the facilities we've got today, although they're aging, we are just barely keeping up with making sure that they'll support what we need to do.

So let's fast forward now. That system's good, but we've got to start recapitalizing everything we do in this business. Let me start with the submarine. Most of you probably know the

department made a decision that we were going to replace the Ohio. We had to replace the Ohio. The original design life on that submarine was 30 years. We've extended it to 42 years which says we have no more runway on those submarines. So we've got to start replacing those, which is why if you read the paper yesterday, Admiral Gilday talked about this is the Navy's number one priority, nuclear deterrence, and the number one acquisition priority is making sure we get the Columbia submarine out by 2031 to replace the aging Ohios as they start to come off-line when every one of them hit 42 years. Those programs are funded, they're going well, and we will continue to march that up. But that program is line on line. Every Ohio that we have to pull off, we will get a Columbia just in time. So we've pushed that modernization program as far as we can push it.

Let me talk about the strategic weapon system that goes on there, and I'm going to put that in a couple of different flavors for you as well. When we start to talk about the missile, the thing that flies, as I told you, those rocket motors are aging. The flight systems are aging. But we in the Navy just came through what we called a life extension where we took the oldest things we were worried about, aside from the motors which was all the electronics, and we've just come through a modernization program. So we are refurbishing our fleet with all new electronics so that we can match where the Ohio's going to get when she starts to get deployed longer and we make sure this system will meet that.

So that's going well. The flight tests we did this year were all of the life extended variant to provide that the system that we just did looks just like the system we originally put out there so that is good. But again, that's only going to last for a certain amount of time as well, so we've got to start thinking about how do we do this differently.

The motors. We periodically, we build new motors every single year. The one part of our system that we can never give up is building rocket motors because the way we build them is quite unique. We use a different propeller formulation, we're the only ones that do it, and it sometimes is like it really is a recipe and it's how you make it. So if we ever lose that, the possibility of reconstituting that will be very, very difficult. So we continue with an acquisition strategy to do that. That's the flight part. Let's talk about what goes on the submarine from what prepares the missile, what tells, when STRATCOM tells us they want us to get everything ready to go.

We incrementally refresh those electronics and that hardware on board the submarine. So from that perspective we've gotten on a plan where instead of wholesale we have to change everything out all at the same time. We try to keep up with technology and we try to build as much flexibility into the system that's inside the submarine that we can to continue to meet STRATCOM's ever-evolving needs as our world continues to change.

So we continue to do that. But again, we're only going to be able to do that so much, and as Admiral Kriete talked about, on NC3 where we've kind of patched over time, we've added systems, we've tried to conglomerate them. We're approaching the opportunity which we call [B5] Life Extension 2, which much like NC3, that is going to be our one opportunity in the next 50 years to fundamentally look at an architecture that is different, that we can take advantage of even more technology that we've got out there. So that's what our focus is going into the future, because if the one thing we've learned, it's all about being flexible to be able to meet STRATCOM requirements not just today but 20, 30, 40 years into the future. And we don't build these weapon systems every five to ten years. We build them with the thought they've got to last a long time, but we've got to make them more flexible to what STRATCOM needs.

The last thing is the warhead portion of this which, and Charlie Verdon, I saw him. He's going to be up here in a little while and the labs will be here. We just came through our life extension for our W76 Mark 4 reentry vehicle. That program went very well. We got those out the door when we needed it, so we bought ourself life on that particular warhead. For our W88 Mark 5 warhead, we are in the throes of doing that. It's called the ALT 370 in concert with NNSA and my counterpart here in the Air Force. As we work through that program we will start to get those out the door eventually as well, which will help that. But again, that's not going to get us everything that we need for the next 40 or 50 years, so we've got to start having the discussion about what do we start to think about next as all of our warheads start to get a lot of life on them as well. So that's from that perspective.

From an infrastructure perspective, if you look at what we do at SWFLANT and SWFPAC and many of our contractors, we built the D5 starting in the '80s and we've ended production on the D5 ostensibly. That infrastructure that was there was made for that

and now we're coming up on 30-plus years of that infrastructure. As we start to look at modernizing our systems, we've also got to make sure we've got the infrastructure there that will allow us to do those new designs. In many cases it's going to require us to build new buildings because we've got to continue to support what we've got today, but we've also got to be able to produce whatever comes next so that we can overlap them.

So we spend a lot of time talking about infrastructure at our facilities as well as our contractors.

Lastly, it's the people part. And I agree with Admiral Kriete and General Clark, that is the most important thing that we've got in this entire business is our people because if you look at what our people do, and if you really think about what they provide for the nation and for the world when it comes to deterrence, we are not talking about a large number of people that understand this business, that work in this business, but what they do is absolutely critical.

So the people we have today who have sustained these systems we talk about [the need] to make them ready that we've got every day, they're doing very, very well. But we've got to get the next generation in, we've got to get them to learn the business, and as we start to look at the new technologies, we've got to give them the opportunity to be able to do the things that we've done in our careers for so long to include military, civilians, contractors. We've got to grow. Which I think this is great that we start this education process and everybody understands how important this is to what fundamentally is our national security.

With that I'll stop and we'll get on to questions.

Mr. Hebert: Thank you to each of you. For the remaining minutes we'll do a Q&A speed round essentially. I'll ask the first question and then we'll open things up to the audience as well.

Admiral Kriete, we're going to hear from some speakers later today who will undoubtedly question the need for some of the strategic modernization programs. Frequently [inaudible] the affordability of various things, the need for specific numbers of weapons, the possible destabilizing effects of some of the programs, whether we need a triad at all.

We've already covered a little bit about the need for the triad and the affordability issue, but let me ask you, Admiral, the destabilizing aspect of say low yield nukes or air-launched nuclear weapons, how do you respond to those who say we'd be better off without them?

VADM Kriete: Our nuclear deterrent is stabilizing. It's that simple. There's nothing destabilizing about it. In the opening remarks we laid out kind of the case for the United States remaining a nuclear nation into the future, and it's really based on the threat. If we want to reduce from a triad, reduce the numbers, I'd actually be all for that, but we've got to start with the threat. The threat's got to change. And we want the threat to change. And when the threat changes, then we have the opportunity in the trade space to change in response. But I believe that the triad in fact is stabilizing in many ways.

When it comes to, I think you mentioned low yield warheads in there. One of the things that the Nuclear Posture Review called for was fielding a small number of what's called low yield warheads by modifying existing warheads. So do we change our numbers under the New START Treaty limits? Absolutely not. Do we modify again a small number of warheads? Yes. Why did the NPR call for that and why are we working on that? It's pretty clear. It's to disabuse any potential adversary in the future from developing a perception that there's a deterrent [inaudible] that they might be able to exploit in our U.S. nuclear forces or our willingness to respond. The deterrence gap that they might perceive and take advantage of to execute a strategic attack in time of conflict, that would kind of set things off in the wrong direction.

So what we believe is that the low yield warhead as called for in the NPR is not destabilizing but in fact it is stabilizing and actually helps lower the threshold for nuclear use.

Mr. Hebert: Thank you.

Question: Thank you, sir. I'm a reporter from Voice of America [Korea] Service.

You mentioned about the signaling of deterrence, and as North Korea has [inaudible] tested, we see a lot of U.S. recon assets and B-52s flying around the peninsula right now by [centering] on the GPS tracking. However the military [inaudible] has not

received diminution, it actually increased. Do you think that there is kind of a limit on the U.S. deterrence [inaudible] towards North Korea since North Korea is not backing down at this moment?

VADM Kriete: Here's my thoughts on North Korea. As we talked about it earlier, we watch what goes on in North Korea very, very closely. We do that in conjunction with the Commander in U.S. Indo-Pacific Command and the Commander of U.S. Forces in Korea. We also do that in conjunction with our allies in the region. There's a tremendous amount of information sharing. We have very, very good situation awareness about what happens, and if a missile launch or a nuclear test or something like that were to occur again I'm very confident that we would be able to detect it and then respond the way that our leadership wants to respond.

So part of our job at STRATCOM is to provide that range of options to our senior military and political leaders so that they have many tools in their tool kit, if you will, to support the whole of government or the diplomatic-led efforts to address the North Korean threat.

I'll just leave it there.

Question: John Tirpak, Air Force Magazine. I've got about 30 questions, but I'll try and narrow it down. One is kind of historical and a requirements question for Admiral Kriete

Back in the '80s some of us remember Midgetman and Rail Mobile and various other schemes to make the land-based leg mobile because the Russian missiles were so accurate they were going to potentially knock out that leg. In GBSD I didn't see anything about mobility, we're just going to replace missile for missile and hold. So what changed in the strategic calculus that we don't need to make those systems mobile?

And the other question I have regards China. There's been some noise that China would declare it is the nuclear umbrella for North Kora. How did that change our nuclear posture relative to North Korea?

General Clark: Thanks, Mr. Tirpak. As far as the road mobile I think version of the ICBM, we did do an analysis of alternatives when we looked at GBSD to see really what is the system that's going to provide and meet the requirements that STRATCOM has for

us, and ultimately when you look at the cost and the effectiveness and really the security and safety of that system, GBSD came out as the system that would answer the requirements the best for us. Both from an affordability and also I think from an acceptability standpoint as well. There was some congressional language regarding road mobile ICBMs that was in, I can't remember which year the NDAAS language came out, but given some direction from Congress as well as our analysis of alternatives, it came out that really the construct of the missile siloes that we have now was the best answer for deterrence for us and to meet the STRATCOM requirements.

I think perhaps if the threat drove us to a different answer in the future that could be something that's addressed. I don't know. But right now the threat is driving us to the answer that we've come to.

VADM Kriete: I'll just add on that. There have been many different types of capabilities for our nuclear forces that have been examined very closely over the years, for many years as you suggest. And where we are today is a plan that's going to build a future force that really is the minimum that we need to adequately deter the threats that we can envision in the future and no more. We're not engaging in an arms race with anyone. We're not building exquisite capability. In fact this is just one example where as we've looked at the potential for types of capabilities we might field, we've decided to go with what is the minimum necessary to get the job done. And the ICBM force of the future as the [inaudible] for GBSD is what's going to get the job done.

Briefly to your second question about China and North Korea, I don't have any unique insights into the relationship between China and North Korea. What I do know is that our deterrent strategy is designed to deter all adversaries that have the ability to conduct strategic attacks against the U.S. and our allies and to do so effectively. China and North Korea are among them, so we're watching very closely and our strategy addresses that.

Question: [Inaudible] News Agency of [Inaudible]. Thank you for doing this.

I have a question to Admiral Kriete. Last week President Putin offered to extend New START Treaty with no preconditions. Also

earlier this week Secretary Pompeo said the United States believed [inaudible] China had to be brought into a wider arms control discussion. And third, he would consider a Russian proposal to include nuclear power [inaudible].

What are the [perspectives] of this [inaudible] in the arms control treaty? Thank you.

VADM Kriete: When it comes to treaties, a couple of things to come to mind. From a United States standpoint, the State Department is in the lead for treaty negotiations for arms control, for all those types of activities. The Department of Defense and STRATCOM as part of the DoD has a really important role in that, in advising our political and administration leaders about military effects, about consequences, about how we view the threat, how we counter the threat, all those types of things. And then those diplomats who are tasked with leading arms control or treaty negotiations take all that into consideration. So we stay very tight in our lines of communication and in the end we follow their lead.

What I will say about the New START Treaty is that the United States continues to comply with all the facets of the New START Treaty. The State Department is also in charge of making an assessment of Russia's compliance with the New START Treaty. They're public about those assessments. The most recent assessment is that Russia is in compliance. What the future holds, I can't tell you.

But I will say that Admiral Richard, the Commander of STRATCOM, has made it very clear that he and our command will support any arms control treaty that enhances the security of our country and it's important in any country for all parties to remain fully in compliance.

Question: [Inaudible] with Inside Defense with a question for each of you.

Since the schedule to transition from Minuteman III to GBSD is so tight, as you said, have you considered accelerating the development of GBSD to account for that? And especially since now there's only one contractor that's [inaudible] and expected to submit a proposal?

General Clark: That's a great question. Right now we are, I

think we're pushing this about as fast as we can go on GBSD, so trying to accelerate it at least right now is not something that we're considering. We are looking at every way that we can though to keep Minuteman III viable, reliable, survivable into the future so that we can bridge that gap the best way that we can. We're looking at every programmatic option, we're looking at every operational option that we have to ensure that that's how we bridge the gap. So rather than bringing GBSD further to the left, we're looking at what can we do to maybe extend Minuteman III some years to the right in case there is a gap there.

I think that's going to be the approach that we're going to take as far as ensuring that that margin is where it needs to be so that we don't have a gap in deterrence. And I think we have some good ways ahead to really look at this. Everywhere from PDM which is Program Depot Maintenance for the Minuteman III to make sure that we're staying ahead and addressing every maintenance issue that we can, to switching out the oldest of the weapon system first and making those first in order as we transition to GBSD. But there's a lot of things that we can do to try to push that as far to the right as we can. The problem is that you can only get so much out of the operational and programmatic pieces for Minuteman III. It's just such an old system.

So we'll do all that we can to do that, but our main goal is to keep GBSD on schedule, on track, so that that doesn't move any further to the right.

Question: Otto Kreisher with Sea Power Magazine for Admiral Wolfe.

The margin for replacing Ohio has been narrow all along. It narrowed a little bit when we had the [inaudible] problems. What's your status now? How close is your margin to meeting that first operational date for the first Columbia?

VADM Wolfe: I'm not going to give you margin in number of days or months or years, but I will tell you PEO Columbia, they do have margin to get to that first delivery. On the welding tube issue, and again I think this is a good example of why we cannot in any part of the triad delay any longer, because as we came through the learning on that, you know, again, not having built an SSBN for 30-plus years, there's learning that we had. I think, I'm confident we've come through that. We've got tubes

now as we're repairing them they're going to start coming out. But much like General Clark just said on GBSD, we cannot take our eye off the ball and we cannot let anything push to the right.

Admiral Pappano and the folks at PEO Columbia watch that almost on a daily basis to look for areas where not are they losing, but can they pull and get even margins so that as we continue to get the learning and get that first SSBN out, we make sure we're not going to push to the right any further.

Mr. Hebert: We're just about out of time, but before we wrap up I'd turn to each of you just real quickly. Final thoughts.

VADM Kriete: Final thoughts. Adam, thanks very much.

Here's the thing, it's really cool. The citizens of the United States don't go to sleep at night worrying that their country's going to be attacked or that a missile is going to rain down on their hometown, whether you live in McClean, in DC, or in Bellevue, Nebraska where I live. That's not what folks worry about when they go to sleep at night.

But it's not the same for many other countries that are allies of the United States around the world. Folks in Estonia worry every night about when the Russian Army's going to cross the border. Our friends in Israel actually experience rocket attacks into their country on a near-daily basis. Our allies in South Korea, and we have a South Korean liaison officer on our staff at STRATCOM, the citizens of Seoul have a real worry about all that artillery on the Kaesong Heights and when it's going to come raining down on their city. We don't worry about that.

If you recall the panic that occurred when there was a false alarm of a missile attack against Hawaii about a year and a half ago, we really don't want that.

I believe that our nuclear deterrent today and into the future is a large, large part of what allows us to have that freedom from attack and allows our population to live free of fear from attack. And we'd like to keep it that way.

Lt. Gen. Clark: Thank you, Adam, for the opportunity. And again, thanks to Admiral Kriete and my good friend Admiral Wolfe for being here.

I would say that we've pushed these decisions as far as we can absolutely push them. Our airmen, soldiers, sailors, marines have done a great job in ensuring that this deterrent has been viable and credible as long as it has, but it's time for us now to do our parts in modernization and making sure that we move to the next generation.

But what I'll say is that it's not just, this nuclear deterrent isn't just a military operation. This isn't a military concern. This is a national concern. These are America's weapons. And everything that we do is underpinned by this deterrent. Whether it's military actions of our men and women overseas, or our diplomats sitting across the table doing the work that they do in every country around the world, this is the backbone of our national security and everything we do and we can't delay it anymore. We have to make sure that those margins don't grow anymore because we cannot have a gap in our deterrent. We have to make sure that these systems come on-line, on time, and in General Mattis' words, I'll say them one more time. America can afford survival.

VADM Wolfe: Thanks. Let me just finish up and put it in a different way.

I think today we have the best triad, the best deterrent in the world, but partly because of that we've ignored it for many, many years, and because we've ignored it, that's why we're sitting here today talking about how we can no longer push to the right. We can no longer ignore it. We have to get after every part of this triad now. We have to look for every opportunity to not just get it there in time, but get margin, and we need the support of the American public, of Congress, of everybody to help us do that. Because as you've heard, this does underpin everything that we do in our national security, in our national military strategy. We are all committed to that.

I would leave you with one last thought. We get to get up here and talk to you, but never, ever forget, and General Clark said it, our airmen, our marines, our sailors, our soldiers that are out there every single day operating this system, keeping this country safe, keeping our allies safe, that are doing the heroic things to make sure as we figure out how to get them something better, they have the best they've got today.

Mr. Hebert: Thank you. Thank you to the panelists.

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