

THE BROOKINGS INSTITUTION

THE MEANING OF RUSSIA'S NUCLEAR THREATS

Washington, D.C.

Wednesday, July 8, 2015

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## P R O C E E D I N G S

MR. SHAPIRO: Let's get started. I think we have a lot to talk about. Thanks for coming to Brookings. And I know it's a very hot day, but you made it though. And we are so very proud to welcome you to the -- what we are reliably told -- is the second-most popular event at Brookings at this moment.

This event comes a little bit from some of the discussions that we've had on our blog, on the Order from Chaos blog, particularly from Pavel and from Steve, on what all of these Russian nuclear threats that we've been hearing the last several months really mean.

You know, it's a sort interesting feature of discussion in Washington right now that there's a tremendous amount of focus on nuclear negotiations with Iran, which are premised on the fact that it's really very important for the world to worry about the possibility that an irrational country might acquire nuclear weapons.

At the same time we are hearing threats from leaders in Moscow who already possess several thousand nuclear weapons, and may be paying a little bit less attention. So, we wanted to rectify that balance a little bit in our own tiny little way, and I think we have a really excellent Panel to do that here today.

First, on my right, is Pavel Baev, who is research director at PRIO, which is the Peace Research Institute of Oslo, and also a nonresident senior fellow here at Brookings, so he's part of our broader family. To my left is Steve Pifer, who has had every position I could name in the U.S. Government, and is also a senior fellow here in our Arms Control, and director of our Arms Control Initiative. And on my far left is Hans Kristensen, who is the director of the Nuclear Information Project at the Federation of American Scientists.

And so what we are going to do, we are going to start with Pavel, who is going to give us, I think, a little bit of sense about what the meaning of all these Russian nuclear threats that we've been hearing in recent months are. Pavel?

MR. BAEV: Thank you, Jeremy. Thank you for your kind words. It's a privilege to be here, and I'm very glad about this opportunity to share with you all. Not that much my analysis, but more probably my worries, because what we are observing in Russian behavior as far as nuclear matters are concerned is very worrisome.

And suddenly we are discovering then, that nuclear matters matter, because there is a lot of nuclear weapons, we know that. We know many things about nuclear capabilities. There are some things we don't know, particularly as far as non-strategic weapons are concerned, that's a big black hole, on the whole, problematic. But as far as knowing what constitutes the subject matter is concerned, we know quite a lot, and probably my colleagues on the Panel will be able to fill you better about the known variables.

And I will try to address the very difficult question of why? What's the point? Where Putin is going and what can we expect from that. And again, it is very speculative. I don't really have an access to his internal brain works. I don't have much of an insight in how the very tight circle of his aides and courtiers work; it is something I try to infer. And my answer though, on the question of why, comes in two parts, and I hope to be wrong on both, by the way, on both accounts.

The first part of the answer has a very simple name of Color Revolution. Putin is obsessed with the threat of Color Revolution, which comes in different kinds and shades. There were suddenly protests on the streets of Moscow when he was assuming Presidency, out of nothing, quite a shocking thing. He took very careful care of that, but again, this specter of revolution has not disappeared.

It's looming some -- here and there. It's suddenly coming up in Armenia, and Putin is saying what's happening in Armenia is certainly plotted, and in Washington manipulated down to every move from there. And that is very much how he perceives the threat of Color Revolutions, and that is why nuclear weapons are relevant in this context, because otherwise if you think revolutions happen because the elites are unable to contain the public protest, nuclear weapons are irrelevant.

But if your mindset is that the Color Revolutions are something plotted, organized, sponsored by Washington, then suddenly nuclear weapons come into play, and push again, and against the line, do you really want a regime change in Moscow? Do you really want to play with these catastrophic scenarios of huge nuclear superpower falling apart?

Yes, it has happened before, Soviet Union did fall apart. I'm no Gorbachev, says Putin. I will not be sitting idly and watching how it happens, I will fight for that. And the fight can turn very ugly, and nuclear weapons will be there. Do you want really to play with these sorts of scenarios?

So, the nuclear card becomes a deterrent in his head, against the threat of color revolutions, projected, created, manipulated from the West, from Washington in particular. And it's very difficult to dissuade him, but at least this part of the answer doesn't really contain, necessarily, immediately, risks of such intensity that we don't know how to deal with that.

Even if it's impossible to dissuade him against that, we don't really see signs, that situation in Russia suddenly goes out of control. It might. It's those situations are impossible to predict, they cannot predict them in Kremlin as well, but nevertheless, it's hardly anything anybody can do about that, because well, revolutions are revolutions, they happen. And if somebody thinks about deterring them this way, it's just another

blunder in the many annals of the failure to contain revolutions.

The second part of my answer, however, is somewhat more material, let's say, because it rests on the fact that in the Russian, very significant, very costly effort at modernizing the armed forces, which started a little bit before Putin's return to the position of power, in the Kremlin, in the year '11, essentially, from the very start of year '11, a huge program of rearmament, very costly, was presented and approved for the next 20 years.

It's a rolling program, so targets are shifting, but the main timescale was 10 years, and in that program the main priority is all modernizing strategic nuclear weapons, that sort of potential. Very costly programs were pushed forward in every component of these forces.

First of all, certainly, with nuclear submarines, and they are very costly items. Their missiles are costly, the submarines and such are costly, and that effort was sustained, and it's still sustained.

On the context of Ukraine, you would think this investment is essentially a mistake. That priority in all your military modernization is a blunder because that's not what you need in this situation. If you have too much strategic submarines or too less, what sort of difference it makes for this crisis; if you have 10 more battalions that will make a difference.

Nevertheless, they insist on that priority in their -- in the allocation of resources for nuclear modernization -- or military modernization, probably because the programs are halfway through, and you have this half-baked product, you still need to bring into some sort of fruition, and Putin is against saying, yes, we need to deploy this -- 40 new missiles which creates a lot of anxiety suddenly, while he's not saying anything.

In fact, last year he promised 50 missiles, not 40, and of those missiles

at least 30, 32 in my count, Bulava missiles, probably correct me, if I am wrong on that count. He's not saying anything, but he's saying we are insisting on that priority.

And having invested all these resources, having put all effort into this very costly system, what is the output? What is the political dividend? None.

Isn't this -- in this very tense situation with the West, these weapons are not really an asset if you cannot put them into play, and that creates, certainly, a lot of dissatisfaction. We have put all this resources, we invested all this money and we cannot gain any profit on that, how to put that into play. He's trying this, and he's trying that.

A last series of statements, certainly, that's -- some demonstrations, for instance, Russian strategic bombers approached United States airspace on the 4<sup>th</sup> of July, saying, "Happy Independence Day." But it's not -- that doesn't amount to much, the bombers are really extremely old, and they probably make good interception targets for U.S. -- for U.S. fighters, but hardly really much of a threat. The main threat they constitute is that they will crash, and that's certainly is a very unpleasant proposition.

What else? How else can you put this investment into play? And I will not really try to suggest an answer to that. I don't think a good answer exists. My main worry in this context is about resumption of nuclear testing. It's still something which can reasonably, easily be done, and there are signs that the nuclear test site in Novaya Zemlya is becoming reactivated.

There are more through deployments there, there are some construction going there, and you can do that without, really, massive investment, and you are certain to create colossal political resonance, even if a nuclear weapon could be a very small yield, you don't need to necessarily bomb all 50 megatons, you might do something very small with no environmental damage if you are very concerned about that.

Nevertheless, the resonance will be certainly huge. And at least, in that

you might hope to harvest some political dividends from the nuclear might you possess, and cannot really utilize. And as I said, I really hope I'm wrong on that account. And that's my 10 minutes.

MR. SHAPIRO: Thanks, Pavel. That was sufficiently scary. Steve, I'm wondering, following up on that, if you could give us some sense of what the Russian nuclear forces actually are, and what they might be useful for?

MR. PIFER: Well first, I would agree with Pavel. I think the thing that worries me most about the Russian nuclear stance, is you have Vladimir Putin out there talking so much about nuclear weapons in a way that I think is borderline irresponsible. But it's taking place in a context in which the Russians are doing a lot, as Pavel suggested, in terms of modernizing both their strategic and non-strategic nuclear forces.

Now some of these things are worrisome, and some are not, and let me just go through the programs, and describe what I think the United States needs to be concerned about. First of all there's a lot going on in terms of the Russian Strategic Modernization Program. They are deploying a new ballistic missile submarine, the Borey class, so I think three have gone to sea, now out of the prime program of eight.

They are equipping that with a new serving launch ballistic missile, the Bulava, and they are currently deploying two types of Intercontinental ballistic missiles. And they've to more waiting in the wings. They had the government programs ongoing for three additional interconnect ballistic missiles including a heavy ICBM to replace the SS-18, and they are talking about reviving the idea of real mobile ICBMs, which actually in the mid-1990s, that it really wasn't such a good idea.

And the Air Force in Russia is talking about building a new bomber. They had been talking about building the PAK-DA, which they said would be a stealthy-type bomber. But it's been interesting, in the last month or so, they've talked about

reviving the Blackjack production line. The Blackjack is the equivalent, or the Russian equivalent of the American B1. It was a bomber built 30 years ago, and the fact they are talking about reviving that production line, suggests to me that they are probably having some problem with the PAK-DA.

So it looks like they are doing a lot, and they are doing a lot, but I don't think this is cause for great concern, as long as two conditions apply. The first condition is that the United States and Russia continue to observe the new Strategic Arms Reduction's Treaty, which limits each side to no more than 700 deployed strategic ballistic missiles and heavy bombers. And limit each side to no more 15 headers, and 15 deployed strategic warheads.

And even though there's a lot of tension between Washington and Moscow over Ukraine, both sides continue to implement the treaty, and while the inspections happen, the daily exchanges, it's all going forward to develop very smoothly. And then the second condition is, is that the United States does what it needs to do to maintain its own strategic force, and I'll come back to that in a moment.

But there are two or three things that lead me to be perhaps more relaxed about what the Russians are doing. First of all, a lot of it is simply playing catch up. They are replacing aging systems, in many cases systems that they would have liked to replace 10 years ago. But there is a period, really, from about 1991 when the Soviet Union collapsed, until around 2005, 2006, when the defense budget in Moscow didn't have any money.

So they basically put their modernization programs on hold. And you saw it in over the course of 1991 to 2007, 2008, in a dramatic fall in a number of Russian strategic warheads that were deployed. And that continue, so if you look at the replacement programs, even today, about half of the deployed strategic warheads on



ballistic missiles are on SS-18, SS-19 and SS-25 Intercontinental ballistic missiles.

The 18s and 19s should have been retired 5 or 10 years ago, the SS-25 will be out of the force by 2020. And so when Mr. Putin makes the announcement three weeks ago, about building 40 ICBMs, the press really got that one wrong. I mean that wasn't -- he was basically announcing the 2015 installment on a 10-year program that was approved four years ago, when the Russians said, we are going to build 400 strategic ballistic missiles over the course in the next 10 years, and that roughly looked appropriate in terms of replacing what they had replaced in those strategic force.

A second reason why I would argue, we don't need to be so concerned, is there's a focus now on Russian strategic force modernization, and it doesn't look like the United States is doing much, and that's going to change, because we and the Russians are on very different modernization cycles.

Ten years from now, in 2025, the Russians will be done, except perhaps, a new bomber, and the United States will be deployed, and new ballistic missile submarine will replace the Ohios. Probably a new intercontinental ballistic missile, a new long-range strategic bomber, and probably a new nuclear air-launch cruise missile.

So, the momentum is going to be very different 10 years from now. A third point is when you look at the four structures, there's also, there's also some very different design philosophies between the United States and Russia. The United States today has a single intercontinental ballistic missile, and a single submarine-launched ballistic missile. And the Russians have a variety in both cases, and part of that I think is not necessarily the reflection of strategic considerations, probably it's simply bureaucratic.

It's farming out work to keep the different design bureaus in Russia occupied, so they end up building more missiles than they probably logically need. And there's also a difference in how they operate the force. The Russians will build a missile,

they'll keep it in the force for 15 to 20 years, it ages out, they replace it and build a new one.

The U.S. Military has a different approach. We basically take the missile, and we extend it, we put a new engine in it, maybe a new guidance system, and we'll keep the system in the force much longer. And I'll give you an example of the single American intercontinental ballistic missile now is the Minuteman III, originally designed to carry three warheads. They've all been now downgraded to carry a single warhead.

Minuteman III was first deployed in 1970. It will be retired in 2030. Now the missiles that -- when retired in 2030 you can have different engines, different guidance systems, and a lot of it will be modernized, but the missile frame basically was the same. The Russian equivalent to the Minuteman III is the SS-25, a single warhead intercontinental ballistic missile. It was first deployed in 1985, and it will be out of the force by 2020.

So, its fly time is going to be less than half of that of the Minuteman III. And that's again just the U.S. Military had a different way of approaching these issues. I'll also make the observation that newer is not always better, and compared in terms of submarine-launched ballistic missiles, the Bulava missile which is now being deployed was first tested in 2005, first deployed, I think, last year, I guess it went to sea.

SPEAKER: Yes.

MR. PIFER: Again, the American counterpart is the Trident D5, it was first tested in 1987, deployed in 1990s was all present, that's an old missile. Look at the test history, the Bulava has been tested about 25 times, 40 percent of those tests have been failures, one was rather spectacularly, with President Vladimir watching from a neighboring ship.

He also tried the D5; its record is not over 140 consecutive successful

test flights. So there are some differences here, and I, for all of the concerns somewhat, Hans, I read about Russian strategic forces, I've yet to hear a senior American Military Officer say, I would sure like to swap American Strategic Forces for Russian Strategy Forces.

And so, as long as the American response would be to go forward with the modernization program, I actually think budget considerations will lead us to, perhaps, to invest in what we would like to, or what the Pentagon now to do, but I think we will be able to maintain a strategic force that balances the Russians.

I'm more concerned on the non-strategic nuclear weapons side, because in part we have less visibility there, but it does look like that the Russians want to maintain a panoply of weapons, land-based, ground-based, sea-based, and it fits in with the doctrine which sometimes is not easy to understand. They talk about de-escalation theory, and the use of (inaudible) of nuclear weapons.

And so, you know, what is this suggesting? And I'm not sure we have a fully clear picture on that. And then there's a particular concern with regards to non-strategic nuclear weapons, which deals with the Russian violation of the INF Treaty, the 1987 Treaty banned all American and Soviet land-based missiles with ranges between 500 and 1,500 kilometers. And last year, the U.S. Government announced that the Russians have violated that treaty by testing a ground-launch cruise missile at an immediate range.

And this is in the context of Russians going back to, say, 2006, 2007, senior Russian officials saying, we are not sure about the efficacy of the INF Treaty because it bans just the Americans and the Russians, and we Russians worry because there are countries around us that are building intermediate-range missiles. And one of those senior officials to complain about that at one time was Vladimir Putin.

Now in terms of the U.S. response, I think one, what the administration is trying to do for now is the right response, which is to try to bring the Russians back into full compliance with the treaty, while preparing a set of response options if the Russians don't come back into terms. In terms of actual non-strategic nuclear weapons though, I do not see a need for the United States to match Russia, either in the number of non-strategic weapons or the range.

In part, because NATO looks at the idea of tactical nuclear war fighting, and it basically says, no. Where do tactical nuclear weapons or non-strategic nuclear weapons fit into NATO's strategy? It's basically to use it, because it's a critical signal, to warn the other side that this conflict has reached the point where it's about to spin out of control, and we don't know where it's going to go.

And I would argue that in terms of what the United States already has in Europe, which are dual-capable aircraft, and B61 gravity bombs, that suffices for that mission, and the F16s are there, are due to be replaced by F35s, and the B61 bomb, it looks like, will be modernized.

So, I don't see an urgent need to match the Russians in terms of numbers or range of non-strategic nuclear weapons, and I would actually argue that the best response for dealing with this problem in Europe, is for the United States and NATO to take smart steps to maintain the conventional advantages that NATO now has in Europe both on terms of quantity, but partly in terms of quality of weapons.

Because NATO wants to have the ability to indicate to an adversary that if necessary, you know, we are going to seek to deter you, if necessary we can defeat at the conventional level. And the nuclear question, let's put the issue of first to use nuclear weapons under the Kremlin, because that's going to be a really hard decision to make. We don't want to have that decision, and we are going to leave that in the Russian's lap.

MR. SHAPIRO: Thanks, Steve. That was somewhat less scary. Hans, given all the expense, why are the Russians undertaking this modernization program? Do you see it as a reaction to the United States?

MR. KRISTENSEN: Well, it's partially a reaction to the general -- Well, let me start by saying thank you for the invitation to come here, and participate in this of course.

Having done that, it is definitely a response to -- partially a response to the strategic competition, if you will, between the United States and Russia. And I'm not talking about weapon systems; I'm talking about national prestige. The Russians, over the last 8, 9 years have been very, I think obsessed almost with this issue of parity.

Not necessarily in all the details of numbers and what have you, but what they secured, and this is one of the reasons they are so very interested in maintaining the New START Treaty, is that it actually lends them some level of parity in the strategic realm at least.

So, I think there's a general interest in maintaining Russian prestige, what that leads to remains to be seen, but I think it's harder if you have to take from what's been said in the Russian -- by commentators, government officials, and try to figure out if their military thinking about what their objectives are. The point being that my task here is to talk about, you know, U.S. forces that might drive Russian concerns.

And frankly speaking it's hard to say that there is one they are really, you know, worried about, if you will. It's more an overall strategic, you know, relationship I think. But of course, as soon as you start talking to individual Russians about this, what is the military capability that you are, you know, mostly concerned about.

I mean, there is not doubt, that they are mostly concerned about very capable forces such as specifically the Trident II D-5 ballistic missile. Very capable

system, as Steve mentioned; very successful, very reliable, because of the fact that it can sneak up on a coast and very quickly launch a large number of weapons. Not over here, that's not really something we entertain in our strategic thinking, but to a worst-case scenario Russian strategies, that is absolutely real.

Farmers, cruise missiles sneak in, launch under the radar, so to speak. Recently some remarks about dual-capable aircrafts in Europe, although I don't really think that is a military issue, that sounds more like an opportunistic political kind of debate they are having right now, and they've also been wrong about what they said about it, but that's another matter.

And so we look at the overall four structure, and what the Russians are doing with them, I think one of the most interesting developments right now is what they are doing on their ICBMs, especially mobile ICBMs. And what we are seeing is that they are beginning to deploy them out in the field in significantly periods of time than they used to do just, you know, a few years ago.

I don't know where it comes from or what the strategy is, but does it imply that they are feeling threatened, and therefore have to get better and deploy these systems into the open area? Or what is it? It's very hard to say, but that is an interesting, I think, development that is underway. Ironically, if you asked the U.S. Military people about that development and the fact that they are focusing so much on mobile systems, they are saying; good.

I mean, because it's a good thing that the Russians feel secure, if they feel secure, and if they can get their weapons out and hide them, and don't feel vulnerable to the surprise first strike. If you look at the submarines, it's the similar -- interesting development that go into eight, possibly more, but at least for now, we have now seen a plan to build eight ballistic missile submarines, but what's interesting about

them is that the warhead loading capacity on the Bulava ballistic missile is significantly bigger than that on the existing two missiles.

So that for the overall force, if you just have an 8-ballistic missile submarine force, of the new Borey class, versus the old Delta class. You are talking about a potential 60 percent increase in warheads that can be loaded on that force in the future.

So what does that mean? What does that indicate? Is that just because they can do it, or does it have a strategic meaning about, well, we now feel really vulnerable on land, so we have to put more strategic assets out to sea. You know, does it show that they are not very concerned about U.S. attack submarines' capabilities? They used to be very concerned in the past, in the 1980s, about the maritime strategy, going up and sinking U.S. -- Russian ballistic missile submarines first, if you will, or early in a crisis.

Does that indicate that they have sort of confidence that they can put these submarines into a bastion, or what have you. So, there are some interesting developments going on in the postures, no doubt about it, but it's hard to say that this is because the Russians are really worried about this American nuclear weapon system, or that one.

Ironically, I think it's more the case that, in terms of what the Russians are saying, that it's U.S. non-nuclear forces that concern them because -- and that spans widely. We've certainly heard a lot of that over the last 10 years from conventional prompt global strike capabilities, that they see could sort of, you know, balloon into a large capacity, but the U.S. Military is not interested in having a large conventional capacity.

Ballistic missile defense systems that could take out enough of their

strategic missiles, what have you, precision-guided conventional cruise missiles, for example, that can go in and very accurately take out, with much more capable conventional warheads than in the past, our strategic systems, for example, nuclear systems as well.

So, they are very obsessed with this imparity, if you will, in the strategic balance, or potential imparity in the strategic balance. And so for NATO, and for the United States, in terms of responding to Russia, that creates, in my view, a huge dilemma because right now in Europe what is it, or how is it that NATO has responded to Russia's aggression? Well, it is with conventional forces, of course.

Moving them further east, repositioning of equipment, larger exercises across the board, still, a very far cry from the kind of force structure of the deployments that were in the past. But it feeds into the Russian, I think, perception that NATO is going to increase its nuclear superiority, and they would be worse off in the future, in those types of scenarios, and therefore, perhaps, it's what we are seeing with them trying to maintain, non-strategic nuclear forces at the level that they are, and also, potentially developing a new ground-launch cruise missile.

And I remember Ashton Carter, he was asked about in Congress recently, you know, how does that ground-launch cruise missile fit into the Russian strategy or perception? And he says, it seems to fit in to their way of using non-strategic nuclear weapons to offset NATO conventional superiority. So, that's just to say, I think it's hard to find, sort of clear-cut cases where (a) U.S. nuclear weapon system is really spoofing the Russians these days, and making them do all sorts of things, at what's driving the nuclear modernization.

I think that is more a general overall parody, national prestige issue. I think the dynamic is much more in the effect of more advanced conventional weapons.



MR. SHAPIRO: Thanks, Hans. I'll term that medium scary. The Panel, what we just heard, I think, to a degree from both Steve and Hans is in the sort of logic of deterrence, the Russian nuclear modernization isn't terribly scary. In the sense that they can fit it into the deterrence models, and it could conceivably be enhancing of stability in that way.

You, at one point in your writings on this for us, mentioned that Putin and those people, actually really don't understand nuclear deterrence, and I'm wondering if you see elements of that in Putin's nuclear threats, and maybe even in a deeper way in some of the actual actions that he might be taking on the ground?

MR. BAEV: Certainly. There is a long tradition of nuclear deterrence, and a lot of lessons are learned through -- sometimes through very risky situations, and we know how to construct balances, and again, we have arms control, which still holds despite all the crises. And there were people in Russia who were really going through the school of nuclear deterrence stage after stage, but you cannot find these people in Putin's inner circle.

You know, whatever you think about this combination of individuals, that's one fact we know for sure, that they have no experience in the school of deterrence. And I would even say, even among the top brass, there used to be a very influential lobby which -- to be pushing forward the agenda, related to, first of all, land-based strategic forces.

And that lobby is practically gone through the process of military reform, one purge after another, and the new Defense Minister, Sergei Shoigu, really brought in many new people with combat experience. He prefers veterans and warriors, to military bureaucrats. But even for this, a kind of top-brass, the nuclear weapons are entirely foreign matter; they've never really given it a thought or trained in any way to use them.

That's where I think Putin's only moment, when suddenly, nuclear weapons were in consideration of a crisis, came back in the year '99, when he just arrived to the Moscow politics, made a Member of Security Council, and it was the Kosovo crisis. And Yeltsin was, kind of, at the beginning at least, stating it very aggressively, you should not forget Russia is nuclear power, we cannot be ignored.

And for all intents and purposes, Russia was ignored. And all the nuclear weapons proved to be completely irrelevant in that situation. So Russia had to swallow its objections and made itself a part of the solution for Kosovo, after all; which, probably, again, is part of the political baggage Putin is still carrying, that situations were suddenly, you don't know how to put them into play.

We need to invent something. We need to be creative in this regard, we need to find a way to not just to make loud statements about missiles and capabilities, but somehow to turn them into political assets. To deploy Iskanders into Kaliningrad, and to withdraw them to do something else, in this regard, but the sober calculations, very kind of specific calculations, of risks, of measures and countermeasures, of what nuclear weapon systems are capable of doing.

What, I think for him it is still an absolutely -- a matter in which he doesn't have a superficial knowledge and do not rely on aides and advisors who have the idea about that.

MR. SHAPIRO: Okay. Thanks. Steve, we've heard that -- from both you and Hans, that there is a pretty stark conventional superiority now on the U.S. side, and that in part this is what the Russians are responding to.

It would follow from that, and you alluded to this a little bit, that because any conflicts are likely to, at least in the early stages, be conventional, that the Russians might seek to compensate for that by integrating the very large, tactical arsenal, the

tactical nuclear arsenal into their conventional war-fighting doctrine, plans. Do we see any signs of that? Is that something that you think about or worry about?

MR. PIFER: It's a hard question to know the answer to. If you look at Russian military doctrine, the unclassified version, unfortunately I haven't yet had a chance to read the classified version, but basically the 2015 version, and the 2010 version, had identical language on when Russia would resort to nuclear weapons. And it was in two cases, one, if there were an attack with weapons of mass destruction against Russia or Russian ally, Russia reserves the right to use nuclear weapons.

Or, if there was an attack on Russia, not an ally, but on Russia itself, with conventional forces in which the existence of the State was at stake, then there was this reservation. Now that's basically NATO policy from the 1970s, '80s and '90s -- or 1970s and '80s when NATO dealt with a period of conventional inferiority toward the Russians.

So it's hard to get too excited about that. There's this other question though, and it's hard to peg down, and this Russian idea, it's called the de-escalation theory. And it's not clear to me how official -- or formally this is a part of Russian policy. I was actually at a Track II conversation about a month ago, where five Russians who were pretty notable said, de-escalation in no way is connected to former Russian doctrine.

But the idea there is, that if there were a conventional conflict and Russia would begin to lose, using a small number of low-yield nuclear weapons; and the question here is, is the literature is not clear, what the intent of that would be. The benign interpretation is that you use a couple of nuclear weapons, basically it's on the other side, this thing is about ready to get out of control, and we need to stop.

And getting very similar to NATO policy and the political intent that it would be, I think, behind any consideration by NATO, of using nuclear weapons. But,

you know, also other explanations seem to suggest that maybe the Russians would see some military advantage, and so that it might be integrated in the military.

Now, it's hard to get a good read on that, because, you know, you go back and you look at some of the things that came out after the collapse of the Soviet Union, and Soviet thinking, Warsaw Pact thinking, seem to basically say, once you cross that line, and use a nuclear weapon, then all bets are off, and the expectation is probably a very fast escalation to very large numbers of weapons, which suggest, you know, keeping a few weapons and using them in a controlled manner may not be all that easy. But these are one of these things that I don't think we have a good fix on the unclassified war bomb, on where the Russians are.

MR. SHAPIRO: Well, just to make that maybe a little bit more concrete, because I think we've heard in some of our sessions that we've had here over the past several months, some concerns from U.S. officials about the possibility of a Baltic scenario, where -- and there's a few different variances of this; but one variant that I know you've heard is that there is a sort lightning Russian strike to take whatever they want from the Baltic, and then a threat to respond with nuclear weapons if there's a counterstrike, they would use Western conventional superiority. How does that scenario fit into what you just said?

MR. PIFER: No. I've been to a couple sessions where people worry about that. And, again, it's one of those things that if there were ever a NATO-American conventional invasion into Russia, which I don't see happening, I can in that circumstance envisage that the Russians might consider use of tactical nuclear weapons if they were to lose. But it's a very scenario if you say, the Russians take an offensive and, say, seize half of Estonia, and then tell NATO, if you attack or counterattack with conventional forces, we'll escalate to the nuclear level.

That's a pretty big bet, because while you might think it would be very implausible, and it's hard for me to conceive of circumstances in which an American President would use nuclear weapons if there had not been use of nuclear weapons against the United States or against an American ally.

If you had the use of Russian nuclear weapons to defend ill-gotten gains in a NATO territory, I think an American nuclear response would be actually quite plausible. So, that is something that I think people ought to think about, but I'm not sure it's a plausible scenario -- it's a really risky bet for the Russians to be making.

And that's why I would argue that the correct response to dealing with what the Russians are doing in terms of their modernization effort, both at the tactical nuclear level, and at the conventional level, and in the (inaudible) area is not try to match them non-strategic nuclear weapons, it's maintain NATO conventional advantages. Because, again, if somebody is going to have to make that decision to first use nuclear weapons, let's have the Russians make that decision, because it's going to be a really hard one.

MR. SHAPIRO: Okay. I'm not sure how great I feel about them making the decision either, but I see your point. Hans, Steve just sort of emphasized the importance of U.S. Western convention of forces in the balance, and you very much emphasized that that seems to be what the Russians are responding to.

Do the Russians have a point here? I mean, are U.S. conventional forces actually reaching a level of sophistication where they threaten the Russian deterrent? And I'm referring not to the cruise missiles, but also the case that the Russians make so often; that the ballistic missile defenses threaten their deterrence?

MR. KRISTENSEN: Well, I certainly don't think on the strategic level, if you well, as sort of a non-nuclear decapitating capability against the Russian nuclear

forces, absolutely not. But I think it's what -- when the Russians get into this conversation, it seems to me that has more to do with sort of smaller scenarios where something could happen, and suddenly over here, we cannot hold the line, or whatever the situation might be.

I mean, there's obviously no doubt that a ballistic missile defense system deployed in Europe cannot threaten the Russian ballistic missile force. It's just way beyond its capacity. But Russian strategists might think that; well, gee, if we had a very limited scenario, in which we had to use something, maybe not against the United States, but somewhere else, that there might be an effect.

I mean, here as well as there, you can very quickly design scenarios, worst-case scenario that pretty much put you in any conclusion you want to reach. And I think what's been frightening to see in this East-West crisis here, is that how quickly people on both sides, pundits and former officials and what have you, how quickly they have sort of caught on to it, and come up with these scary scenarios, and been willing to escalate.

That phenomenon, frankly, is one of the most worrisome aspects of this. That it is possible to go so far so fast. So that should remind us something about crisis stability issues as well, but on the convention, I don't -- you know, when people ask -- I mean, there was a case here just a few weeks ago, or months ago, where in response to the Russian INF violation claim by the U.S. State Department Report, that the Pentagon came out with a response, I think, to Congress saying; yeah, gee, we are now looking at options, you know, and they range from, you know, counter-force options to sort of countervailing options to, you know, in-kind options.

You know, there's a very long list of potential options that you could look at. And so very quickly that turned into, in the news media, that United States is

considering deploying ground-launch cruise missiles in Europe again. And I remember, you know, getting a barrage of calls from Eastern European news media, and Russian news media. Is this really true? Is this really true? And of course, it's not true.

I mean, you knock on the door on every U.S. Military Planner, and that's the last thing they want to do. They see no need for that type of a response, even if Russia deploys a nuclear ground-launch cruise missile in Europe. And it's very simple, why not? Because, first of all, you didn't want to get into this political battle in Europe again, about where is this thing going to go?

You know, and public opposition to deployment to nuclear weapons, we'll remember it. But it's a hot potato politically. But also militarily, I don't think they need it, and so the United States already have plenty of air-launch nuclear cruise missile and conventional capabilities that can be brought to bear in such situation, and you can very quickly move your bombers in. You don't have to have an army you need deployed over that, it costs a lot of money.

We still have Tomahawks on the submarines with a very long range, the Air Force is developing several thousands JASSM cruise missiles, conventional cruise missiles of which a good portion will be an extended range, with over 1,100 kilometer range. Those are the kinds of things I think Russians worry about when they think limited scenarios around the border and where they can get pushed back, or pushed in, depending on who they are.

MR. SHAPIRO: So, do you think that on the Western side, that we need, or that we have a mechanism for understanding and for integrating the strategic stability aspects of conventional systems into our planning.

MR. KRISTENSEN: I'm not sure how far we've gone on it. The latest nuclear guidance from the Obama Administration, released in 2013, is on several levels,

specific about a requirement that U.S. planners, planning strategic and regional plans, should rely more on advanced conventional weapons, and that nuclear weapons, sort of, can be moved more into the background. Not in the overall mission, so to speak, or the core mission, but that in scenarios, contingencies, they need to rely more on conventional weapons, if they can.

And so I think that -- that's not a new development, but it's interesting to see it so clearly in the guidance. I mean, basically, that has been a trend ever since the end the Cold War, and we gradually see more advanced conventional weapons moving closer up into the strategic effects, package, of U.S. Military capabilities.

So, I think that's a development that's in full swing, and it's not going to stop, it's at the core of what the United States Military wants to do on a global scale, not just with Russia, but everywhere. So, I think that will continue to drive and be an irritant in the eyes of those -- in the Russian Military planning community that want to be irritated by it.

MR. SHAPIRO: I would say are plenty, I'm sure. Okay. Well, why don't we go to the audience and we'll take, I think, a couple of questions at a time. And so, please catch my eye, and when -- there should be a microphone going around, and when the microphone gets to you, please identify yourself, and be sure to actually ask a question. So, this gentleman, right here?

MR. ODY: Thank you. Anthony Ody, formerly with The World Bank. As an outsider to this field I was meant to be, you know, in the other meeting over there.

SPEAKER: We get that a lot;.

MR. ODY: What most surprised me, was the statement about the West enjoying the advantage on the conventional side. Anyhow, my ears prick up because I'm hearing about European countries including, I'm afraid, my own, having trouble meeting



the 2 percent defense-spending target. If I understand you correctly, you are not talking about in chaps in tanks, you are talking about clever ways of offsetting chaps in tanks, including missiles and so on, that can offset them. Am I getting that right?

MR. SHAPIRO: Who wants to address that?

MR. PIFER: I think I'll address that. I think, in large part, because not only on the nuclear side, but on the conventional side, there is this 15-year period from '91 to 2005, where the Russian Army didn't get much of anything. And so, NATO and the United States have very significant qualitative advantages, but also still had it in the European area, conventional, numeric advantages.

Now, the Russians have a very active conventional modernization program ongoing, and if NATO doesn't think about things in three or four years, it may see some of its advantages erode. So it has to pay a little bit more attention to this question, I think, now given the sort of behavior you've seen in the Russia over the last 18 months with regard to Ukraine and a readiness, at least there, to use force.

So it's an advantage, it's one that the Russians would like to erode. My guess is the Russians will have more luck in terms of coming to something that parody in terms of numbers, but I think it's going to be a difficult, or more difficult issue for the Russians to come up and catch up with United States and with NATO in terms of the quality of some of the precision-guided weapons that Hans was referring to.

MR. SHAPIRO: I think there's two other aspects to his chaps and tanks question. The first is the chaps, by which he means, I think, Europeans. And we've been a little bit -- or a certain kind of European -- we've been a little bit vague when we say this, when we probably continue to say Western. Are we saying that this is really in the context of all the defense cuts we've seen in Europe recently, really an American capability, and the Europeans are just sort of along for the ride?

And the second aspect is the tanks, which is that this is -- we are not really talking about the sort of traditional armored formations, we are talking about advanced conventional weapons that tend to be sort of be controlled from trailers in Nevada, and fly at -- and fly at remote distances. Is that correct?

MR. PIFER: Well, it's a mixed approach, but my guess is that behind closed doors when he was in Brussels, for the Defense Ministers Meeting, that Secretary Carter made a big pitch to say to the Europeans, you know, you have to have your defense spending too, on the conventional side. That if we are going to preserve the advantages that NATO has in the conventional area, it can't just be the United States.

And certainly there will be, responsibly, a mix of some very advanced systems, but also that you saw, when Secretary Carter was in Brussels, it's going to be some of the old system tanks, I mean. The big news that came out of the meeting was that the United States had sent to Europe an armored brigade. This was the first time, in a-year-and-a-half that you actually had American tanks in Europe, with the exception of a small number for training purposes, at a training ground in Germany.

And those tanks, that brigade did exercise in the Baltic region in Poland for about three months, and when they wrapped up, the troops came home, but the tanks, the (inaudible), the heavy artillery, and the thousand other associated vehicles that are staying behind, they are going to be prepositioned in Poland, Romania, Bulgaria and the Baltic States.

So, there is a certain aspect of beginning to deploy some of the traditional aspects of conventional military power, but also putting them in the Eastern part of NATO, both to send the signal to Moscow, but also to be reassuring to those governments.

MR. SHAPIRO: Pavel, do you want to comment?

MR. BAEV: Yes. I think it's a good question about chaps in tanks. And I think it also reflects on the larger question; is it the New Cold War? Are we facing the same sort of situation? And one significant difference is that I do remember that Old Cold War, when in Eastern Germany alone, was half-a-million Soviet troops deployed. That was a lot of chaps in tanks. And now you hear on the borders of Ukraine, Russia is amassing 50,000 troops, it's an order of magnitude lower, even in Russia you see, kind of, a lot less of possibility to deploy chaps in tanks. And there is no second echelon for that matter.

But besides chaps in tanks, and what Russia is very worried about, are now drones. And that's a weapon system against which Russia has no countermeasure, no ability to balance, and is very worried about. Because they are cheap, they can be produced in large numbers, and Russia doesn't know how to counter that.

Long-range strike drones. In principle technology is not that complicated, but Russia is arguing, in essence, it's the same weapon system as the land-based cruise missile. And there is a point into that argument, it's impossible to make the point stick on legal ground, but that's suddenly another dimension of the whole war, where Russia feels exposed, vulnerable, unable to balance, and to deploy anything which would resemble that capability.

MR. KRISTENSEN: Well, just in addition to that. I mean, there's no doubt that for the foreseeable future, the United States is going to enjoy an overwhelming conventional capability and capacity. Not just in military force, but also in R&D, and further development. I think even if all the NATO countries paid 2 percent, it's not going to change that fact. I mean, I think that issue is more about what is prudent to do. You know, everybody should pay their share, whatever the decision is, at any given time.

But I think one of things that characterized NATO's defense spending

over last decade, is that it has actually spent a lot of its money that was intended for R&D improvements and maintenance, on the war in Afghanistan. You know, sustaining the forces that were sent over there flying it, whatever, or whatever. So suddenly you have a problem, that you have sort of hollowed-out that chest, so to speak, by not doing that while you were over there.

And so I think that's another issue. What we are seeing with Russia is that what really seems to make NATO planners nervous right now, is the sort of trend that Russia is building the capacity -- seems to be building a capacity to move large number of troops in a relatively, quickly, back and forth along the border.

You know, one month they'll be down off, you know, Ukraine, the next minute they will go up North for an exercise, et cetera. You know, tens of thousands of troops, you know, to amass them quickly. And so -- but that's not modern warfare, that's just like moving a lot of troops. It doesn't really say anything about what can they do in a modern battlefield.

And so one of the things that the U.S., for example, is working on, and you mentioned drones, is that instead of drones flying in and taking out that Toyota with the terrorist, or something like that, we are now beginning to plan for mass drone attacks, where drones work together in a large formation going in.

It's not gotten very far, but we are talking about development of software and capabilities in the range of 20 to 50 drones going in at same time, that type of stuff. So that's on the way now, and I can tell you, the Russians will be worried about that, absolutely. But even though the Russians have a modernization program on the way, think about the different components.

Ballistic missile submarines, ICBMs, bombers, tactical fighter aircraft the SU-34, the Iskandar missile, the preliminary integration into their systems. New attack

submarines, the Caliber sea-launch cruise missile, conventional force developments, including replacing, it seems, over the next decade, the entire armored tank inventory -- armored vehicle inventory, command and control systems with a new focus on border security, et cetera, et cetera.

This is an enormous project that I frankly do not believe they can lift. Okay? And there's something about, I think, the Russian way of talking about these things, that if you listen to what they are saying, it's always about; well, next year it will be 100 percent bigger, we will have double the number of missiles. It's always this kind of, chest-thumping type of way of talking about it.

You know, the proof is in the pudding, and we'll see what comes out later on. But I think if you hear the U.S. intelligence community, they are still saying that even with the current modernization program, in a decade the Russian Military Forces will still be overwhelmingly dominated by Soviet air equipment.

MR. PIFER: I'll just add that's one of the pieces that is, you know, who is manning the equipment? And I think we've seen in the last 18 months that, certainly in Crimea, the Special Forces airborne are very good. They put a lot of attention in those forces, and traditionally those were the forces that got the best equipment and the most training money.

But if you then go to the regular Russian army, as I've said, probably half of the missile personnel are still conscripts, and the conscription turn now in Russia is one year. So, you really have to -- you know, in terms of the quality of the people to sort of operate in what would be a -- hopefully an environment that they never have to face, and we never have to face, but not with a lot of training and experience.

MR. SHAPIRO: Okay. Up here, in the second row?

SPEAKER: Hi. Hello. My name Matthew Lanka, I'm currently a

Georgetown University graduate student, and I'm with NTI, Nuclear Threat Initiative. And my question is more about the disarmament process. Well, we've experienced, you know, the most recent review conference which wasn't really satisfying. And in that respect, how do you see this Russian rhetoric impacting further disarmament process and, you know, towards the next review conference, because people are very much afraid that we are going to fail again, the international community will fail again, at another F-CON, and how can you -- how do you see that playing out?

MR. SHAPIRO: Why don't we take one more question across the aisle there?

SPEAKER: Mohammed O'Mara, I'm also a grad student, currently at FAS. My question is, and you kind of touched on this, that Russia is spending a lot of money, is that sustainable? And how are they getting the resources? Thank you.

MR. SHAPIRO: I think we know the answer to that second question. Who wants to take that?

MR. PIFER: Well, we'd love to talk about the first aspect of it. So, there are two issues to it, I think. There is one about, sort of, the prospect of, or the impact on force numbers, if you will. And there is another element of it that has to do with the impact of the current crisis on the future development of nuclear forces.

If you look at the first part of it, the prospect for further reductions, then I think there is no indication that the United States or Russia will start to increase the number of nuclear Russians. Even with the current modernization programs, the trend is south, and so that will continue. Even though Congress here doesn't like the word unilateral reductions, unilateral reductions of the stockpile are embedded in it is implicit in the modernization program, the U.S. is now embarking on.

So it will happen. Russia, even with this modernization program, and

ballistic missiles and submarines, you know, they will have fewer of them in the future, in terms of overall force level. They are not going to go over the New START Treaty. The one area where I can see there could be potential, but in a way that's a good thing, is in the number of how many warheads could you put on ballistic missiles?

In the future you could, potentially, get in a situation, I'm not saying it's going to happen, but you could get into a situation where, suddenly, because you build systems that more heavily MIRVed, the overall force, or like the submarines that can carry more warheads. That you could get into -- that you would have to take some of them off, and not have full load, in order to stay in compliance with the treaty.

But, you know, the U.S. is always deep in that kind of a posture, Russia not so much, but who knows, in the future it might want to move in that direction, where they have fewer weapons deployed and more in research, if you will.

On the aspect, I think the issue of impact on forced developments is another challenge for the non-proliferation regime. And the reason I say this is because we are now seeing Russia finishing or getting into the final round of its strategic modernization, and we see the United States moving into its round of strategic modernization.

And one issue that the NPT community, as a regime, has to struggle with is, well, if all the nuclear weapons states continue to modernization in perpetuity, and talk about having nuclear weapons for, you know, the major part of this century, does that or to what extent does that challenge the obligations under Article 6 of the treaty, of moving through negotiations toward eventual elimination.

I think that issue is challenged on many levels, but it could -- the East-West crisis, and certainly also what's happening in the South China Sea, could make it easier for people to argue, that you cannot reduce too much, or fundamentally change

nuclear force structures. But again, I think the overall numbers are going south, but I think it's a more enforced structure, that there is a continuing drift.

MR. SHAPIRO: Do you worry about that having an impact on third country nuclear forces? Either the ones that exist, or countries that don't currently have nuclear forces?

MR. KRISTENSEN: Well, so I see that all the nuclear weapons states are looking at what each other and seeing what they are doing. I mean it's not just a parody issue, it's also getting ideas. I mean, we are seeing a new interest developing -- happening with China that has just, apparently finally decided to put some MIRV warheads on its silo-based ballistic missiles. Not that the warheads are there in peacetime, I'm just saying -- but the capability.

And we are seeing moves in India that is shifting its strategic force planning more towards China, than Pakistan, as it has been in the past, and their defense planning community also beginning to entertain the thoughts of developing MIRV capabilities. The Indian Government has not made such a decision, a least to my knowledge, but I'm just saying I think all nuclear weapons states look to each other, you know, for what it is that you need to have to be safe and secure.

But it's still very striking, I think, that you look at all the nuclear weapons states, there is no other nuclear weapons states on the planet than Russia and United States that believe you need more than a maximum, a couple of hundred nuclear weapons for security. So I think it speaks to how overwhelmingly United States and Russian nuclear strategic thinking is still embedded in the Cold War.

MR. SHAPIRO: Pavel, so do they have the money for this? Where are they going to get it?

MR. BAEV: The very short answer is no, it's not sustainable, and it's



very seriously unsustainable. And the proof positive of that is that the rearmament program approved, was supposed to last 10 years, 10 to 20, but in fact, there should be another one, from the year '15 to '25. And they cannot design that, so there is no current plan how to cut, what -- where to economize, and the political leadership, in essence, remains in denial of the fact of the economic crisis, which doesn't help at all.

They cannot put together a meaningful state budget for a year, so they don't really know how to deal with all this, grandiose plan designed. The fact of the matter is that they will have, very soon, to make decisions about what to cut, where to economize, and my feeling is that the priority on strategic modernization will continue at the expense of some of other programs, maybe in the Navy, maybe in the Air Force.

And if that priority is sustained, the more there is political pressure of finding a way to put that into play, where, instead of cutting everything else we are investing in that. What is the use of it?

MR. SHAPIRO: Okay. A couple of questions here in the front row? Either one of you first -- Yeah, both of you.

MS. ARSCOTT: I'm Virginia Arscott, and I spent several years working on theater, and strategic nuclear weapons and the Soviet Union, and --

MR. SHAPIRO: Be careful to speak into the microphone so we can hear you.

MS. ARSCOTT: Well the big problem as far as I can see, or what everybody believes is the strategic -- or the theater balance in Europe. Something similar happened in the -- early 1980s, and that's when Alexey Arbatov, who is an outstanding arms controller, first of course, Soviet, now he is with Carnegie Endowment for International Peace, and he has written an extraordinary article, which I recommend to everybody, about the deterioration and the death, basically the end of arms control. He

used the current --

MR. SHAPIRO: Can we get to the question in this though, quickly?

MS. ARSCOTT: The danger in the -- this is the most dangerous part of the 21<sup>st</sup> Century so far, because there's no longer the bipolarity of the Cold War --

MR. SHAPIRO: But you are not getting to the question.

MS. ARSCOTT: -- but there is a very, very --

MR. SHAPIRO: Is it leading to a question?

MS. ARSCOTT: -- a very dangerous situation where --

MR. SHAPIRO: Okay. Maybe we can take the next person --

MS. ARSCOTT: The remarks that are being made by all the Soviet Government representatives, including President Putin, show that they simply don't know enough about what a nuclear war in Europe could do, and that is the great danger.

MR. SHAPIRO: Okay. Thank you.

MR OSGOOD: Charles Osgood, retired Federal employee. One thing was never discussed in the nuclear part is the weapons themselves, it's all been delivery. Apparently we are engaged, or will be engaged, from what I read in the newspapers and checking over and making sure the darn things work, and since the test entry units, it's been done with computers, and along the way, apparently discovered ways to make them better. And it actually worked, maybe. Well, that's one thing about the test entry.

So the question I guess, are the Russians doing the same thing, and to what effect are they possibly worried about our weapons actually working more, at a higher percentage than they might have before?

MR. SHAPIRO: Why don't we take one more question in the second row here before we come back?

SPEAKER: Thank you. I'm Diane Proman, George Mason School for

Conflict Analysis and Resolution. Anyway as long as I'm following on Charles Osgood, there was another Charles Osgood who had a strategy of GRIT, Graduated Reciprocated Initiatives and Tension Reduction, and everything that you are talking about is very provocative and escalatory. And you talk a lot about sending signals to one side, and it very often happens that the other side receives a different message than the one that you think that you are sending.

And it provokes escalation, and so my question is -- and also deterrence, Ralph K. White said, deterrence works if it's accompanied by drastic tension reduction. So what about other, like second-order change strategies like mediation, tension reduction? Nothing deals -- it's all dealing with symptom and not the underlying conflict. You know, so what about mediation, conflict transformation -- creative strategies of conflict transformation, because there is no end game to any of this. Thank you.

MR. SHAPIRO: Who wants to tackle first? Pavel?

MR. BAEV: It is a difficult subject matter. On the weapons, certainly no testing and the weapons are not getting any younger. And computer simulation can tell you only that much, and in principle in Russia, they are not very good at computer simulation. You know, the best hope they have is that many weapons system in the Soviet Union tradition were built to last. And, you know, it goes for every weapon system, including the nuclear warheads.

But in this particular aspect, very pragmatically, testing makes sense. You want to be sure, that your old weapons are still functional, that they can perform. So whatever are the consideration from that particular angle, yes, you, in principle, if you are maintaining nuclear arsenal, you need to test.

And that certainly goes very much against the NPT -- the NPT regime and certainly it would be very difficult to have another conference even with that level of

success if you are returning to testing, and (inaudible), at least in this respect, Russia is so far trying to play responsibly.

But as for the question about possibility of finding a way around this very linear, the confrontational situation we are facing, typically it's not about the channels as such, it's about the political will, about ability to listen. About ability to attempt to comprehend what is going on, and not just to be obsessed with your own fears, and with the very limited circle of trusted aids, after that you trust nobody. That situation is not really very conducive to opening second channels. To experiment with attempts to build trust, and so on.

MR. SHAPIRO: So, Steve, I wonder if you would take up those questions, too, but also following on, on what Pavel said, given that there are both political and actually stockpile incentives for Russians to think about testing, should the U.S. be thinking about sharing some of their testing technology with the Russians?

MR. PIFER: Actually this would be the point where I think I disagree with Pavel.

MR. SHAPIRO: That's so hard to do.

MR. PIFER: First of all, I mean, I think the technologies, in the United States has what's called the Stockpile Stewardship Program, which thus far, the Directors of the National Laboratories and the Head of Strategic Command of the Military say, the President, sir, with this program, we are confident in the reliability of the weapons without having to resort to nuclear testing.

My guess is that actually, sharing those kinds of techniques and computer programs with the Russians would be hard, not just because they are very sophisticated, but also it might reveal lots of things about how we put our nuclear weapons together that we probably wouldn't want to share with the Russians, and vice

versa.

I guess where I would disagree with Pavel, I actually think if you don't have testing and then you have maybe less than 100 percent confidence in your nuclear weapons working, that may not be a bad thing, because in looking back into the bizarre Cold War Era, you know, if you are contemplating a first strike against the other guy, you need to be sure all of your nuclear weapons are going to work, and if you have a question mark, that maybe some of them don't work, that's a disincentive for a first strike.

On the other hand, if you are talking about retaliation, I don't have to have all my weapons work, just some of the weapons work. So I'll actually say that having a little bit of an uncertainty there, is not a bad thing, for purposes of strategic stability.

The question about the end of arms control, I personally wish that we could have moved beyond the New START Treaty, I think there was actually proposals from the Obama Administration (inaudible) have gone -- to go beyond New START, both in terms of reducing deployed strategic weapons, but also getting into the questions of reserved strategic weapons, and non-strategic weapons.

In fact, there was a proposal out there, that had the Russian said, yes, for the first time ever, you have had U.S. and Russian negotiators talking about all of the nuclear weapons in the arsenal. Because what the New START Treaty covers, is it covers deployed strategic weapons, it covers perhaps 35, 40 percent of the total U.S. arsenal, and probably a similar proportion on the Russian side.

In the current environment -- well first of all, the last several years, the Russians have not been prepared to move beyond the New START Treaty, in the current environment in the next couple years, it's hard to see that changing. But the optimist in me, always try to always find an optimistic note, in me, says, it may change around 2018,

2019, because at that point you are two years out from the expiration of the New START Treaty, which has a 10-year term.

And it does seem to me that the Russians, as do the Soviets, always like to have some kind of a strategic arms control agreement in place, because that was valuable in two ways, in terms of capping American strategic capabilities, and that's going to be more important in the year 2020, when we are beginning to crank up our modernization program, but also in terms of providing a degree of transparency and information and such.

So, my guess is, the arms control process between Washington and Moscow may not make much progress in the next couple of years, but I think around 2018, 2019, the sides may come back to, and then hopefully they can do more than just extend the New START Treaty, but actually begin to grapple with some of these other questions, and bring the weapons numbers down.

MR. SHAPIRO: So that's our plea for the long-term funding for the Arms Control Initiative. Hans, did you want to comment on that?

MR. KRISTENSEN: On the issue of warhead, just building on what Steve said here, and also Pavel to some extent. So, you know, my understanding that the fundamental difference with the U.S. approach with nuclear warhead maintenance after the end of the Cold War, and ending alliance on nuclear testing, has been the Stockpile Stewardship Program, and just relying on re-fabricating, refurbishing, but also modernizing, but working with the same warhead types basically and extending them.

The Russian approach is different because they don't have a Stockpile Stewardship Program the way we know it, so they tend to reproduce warheads when they've -- you know, when they age out, instead. The United States just has a program now that is more than halfway through production of something in the order of 1,200

warheads. The W76 Warhead for the Navy, the ballistic missile submarine, to extend the life of that weapon system for another 30 plus years.

Right after that comes the B-61 where we are building a new guided version of the B61 gravity bomb, and after that come other warheads for the ballistic missile, but none of that innovation, resorting to nuclear testing, but it does resort to, sort of other forms of testing, not nuclear explosion, but there's plenty of testing. It is hydrodynamic testing, it is simulated testing, you name it, so it's a very expansive program, and the Russians just don't have that, so their approach is very different.

On the death of arms control, absolutely, I don't think there's a death of arms control. I think arms control comes up when, you know, there is an urgent need for the countries to do it, and I think there is always is, to some extent, between United States and Russia, that's been our tradition. ...

Putin has already said that once we get to the end of the New START Treaty, he will be willing to think about this. God knows what the situation is at that time, but even if things go worse, I think there is a real incentive for even national strategic security interest to try to cap what another country can do. So, that is a real powerful motivator, I think, in continuing nuclear arms control.

MR. SHAPIRO: Okay. Why don't we come up here to Jonas in the third row, and then we'll go to the back; right there. Good.

SPEAKER: Thank you. It's been a really interesting discussion so far. I was going to ask, mostly directed to Steve, on sort of the distinction, you just touched upon, between strategic and non-strategic weapons. First of all, it's the distinction still makes sense. It's very much a sort of Cold War relic and combined a little bit with some of the scenarios that you talked about as well, where we could see in Russia, in a sort of escalation type of scenario where tactical nuclear weapons could play a component.

So my first would be, where it would sort of make sense in that all users of nuclear weapons they are strategic and you will trigger a nuclear war; or whether you could see scenarios, and combined the way you talked about their -- the military doctrine?

MR. SHAPIRO: Hold on for a second, Steve. I think -- were there some questions in the back of the room? Why don't we take two questions way back there? I can't really see those people.

MR. PRICE: Hello. I'm Jeff Price, with Johns Hopkins, SAIS Foreign Policy Institute. Could you say a little more about submarine-launched cruise missiles?

MR. SHAPIRO: Always a fun topic. U.S. or Russian?

MR. PRICE: Russian, if the Ukraine attacks us.

MR. SHAPIRO: Okay. I think there's one more question toward the back there?

SPEAKER: Anne Sesk, U.S. Air Force. In the past couple of years, though, a couple of news items that there was a lot of changes that were made in our nuclear force, especially with our ICBM crews. I'm wondering if you could speak on, sort of, the Russian perception of that, or reaction to it?

MR. SHAPIRO: Okay. Steve, do you want to start with the question to you?

MR. PIFER: I'll start with the strategic, non-strategic. I mean, it's one of these things that, when used in the arms control world, that's probably becoming a bit outdated. My own personal views, if a nuclear weapon goes off anywhere near the (inaudible) -- but I would argue it's time to move past it, because you are beginning to see some of these lines blur.

So, Hans mentioned the modernization of the B61 bomb. You know,



right now there are four variants of the B61, one of which is considered strategic three, which are considered tactical. At the end of this modernization program, there will be one variant of the B61. If that is deployed with the U.S. Air Force in Europe, it will be tactical, and if it's deployed at Whiteman Air Force Base in Missouri for the B2, it will be strategic, and it's the same weapon.

So I would actually argue, arms control now ought to move to a place where you treat nuclear weapon is a nuclear weapon, is a nuclear weapon, and so in my ideal arms control world, the next approach would have a U.S.-Russia negotiation where you would limit X -- my number would be somewhere around 2,500 nuclear weapons on both sides, and that counts everything that's a nuclear weapon.

And then you might have a sublimit in that, that would limit deployed strategic weapons, because deployed weapons that run missiles on submarines with -- on any kind of ballistic missiles, those are the most readily usable, so you might want to constrain those in a special way, but it would make sense for the next round of negotiations, to typically address all weapons.

It's something the Russians resist, but the Russians, actually, they contradict themselves on this one, because at the same time that they say, well, we want to hold off and not address non-strategic weapons, they also say it's now time to bring everybody else in. If you look at what everybody else has, Britain is the only country in the world that has weapons that would be categorized only as strategic under the New START Treaty.

Everybody else has stuff that would be categorized as non-strategic. So, if the Russians really want to get to a point where they are being in third countries, you are not going to get there unless you begin to talk about American and Russian non-strategic weapons. And the simplest way to do that would be a limit that covers all

nuclear weapons regardless of deployed, non-deployed, strategic, non-strategic, with maybe a supplement on deployed strategic systems.

MR. SHAPIRO: Hans, do you want to take some of those?

MR. KRISTENSEN: Yeah. There's an interesting -- in the debate about tactical nuclear weapons, you'll quite often hear this comparison, that the Russians have a 10 to 1 advantage. And it's very interesting, because you know, to some people that is a significant thing, but I think to the U.S. Military it's like, so what. I mean, I don't really think there's an issue for them, because they don't see a military need for that categorization anymore.

And in fact, I think the U.S. Military very early on moved out of that kind of thinking, even back in the late 1980s starting to unilaterally withdraw tactical weapons from the Navy. Throughout the '90s, you know, wiped out the army weapons very quickly, Clinton denuclearized the surface fleet. The Obama Administration, even though he was beaten up by Congress over threatening to reduce nuclear forces, so unilaterally, one of his first acts was to unilaterally withdraw and retire the sea-launch Tomahawk cruise missile, with nuclear capability.

So I think the U.S. has just fundamentally moved out of that way of thinking, and now they are thinking more about to the extent it is about nuclear, that, like Steve says, all nuclear is strategic, but you can use the strategic nuclear in lesser or greater scenarios in different ways.

And so they think more about turning up and down the heat so to speak, in different ways, than it's about a particular group of weapons that has to serve a certain, you know, tactical battlefield function. But it's interesting also if you look at the Russian tactical nuclear weapons inventory. I frankly think that a lot of what's there is there because it was left over.

That you have air delivered, you air defense, you have anti-ballistic missile defense, you have army -- some army ballistic missiles, and a lot of Navy weapons still left. And so they see a need for this across the field of scenarios, apparently, or maybe it's just the military services that don't want to give them up. I mean, it's very hard to read, exactly why they live on. But I think there's a trend in the Russian Military, that even what is left of the non-strategic nuclear forces, are reducing even without an arms control treaty, simply because a lot of its old crap, I mean, excuse my French, but I think that is a lot of old systems that need to go.

We are seeing signs that some of their attack submarines are losing capability in the future; some of their surface ships are losing capability in the future, simply because they are shifting to modern conventional systems that can be used for what nuclear cruise missiles were used for in the past. But I think that's an important development that's happening.

On the Russian submarine cruise missiles, sea-launch cruise missiles, there was a question, about that. Well, they have a whole host of them, if you will, a handful of them that were designed to shoot aircraft carriers, surface battle groups, or be used as land-attack missiles. And some of those are being phased out, some are living on for a little while longer, until they will be phased out.

Others see a continuing mission, for example, land-attack cruise missile, I think will have more of a future mission, still. There are rumors that they are developing a new nuclear cruise missile called the Caliber, which also exists in the conventional format, or several different conventional formats, by the way, and they still have a leftover from the Cold War, the SSN-21.

The new attack submarine in the in the Yasen, and the new attack submarine has been equipped with a nuclear capability, and so that force, type of force

structure will continue in the future.

Air defense systems are becoming more advanced. Frankly speaking possible in the future that they would not need a nuclear capability for defense systems anymore; ballistic missile defense systems, well, I mean, they have one of the two systems that are still operational, apparently still with the nuclear warhead. That system is being upgraded, but it's a local system around Moscow, so they are going to get it if they use it.

And so it's kind of, you know -- it's kind of an odd way of planning, if you will. So, the only way we really compare tactical nuclear weapons, I think, between our kind of posture, and the Russian posture, is in the air-delivered weapons, because that's the only where -- that's the only place we both have some kind of nuclear, you know, non-strategic capability, if you will.

What was the other issue? Glitches, there was the question about ICBM, glitches, how the Russians view that. I really don't know, you can probably speak better to that.

MR. BAEV: I haven't heard anything about that, I'm very sorry of not being able to provide a specific answer. On the submarines I probably may add that it is, for some reasons, exactly in that class of submarines that Russia -- the Soviet Union and Russia had very bad luck with the subs both Komsomolets lost at sea, and Kursk crew lost at sea were the submarines of that class.

And the new generation, yes, in class, is supposed to be going on much faster than it does. It's only one submarine which now is undergoing trial, and it's undergoing them for a while. Already something isn't quite right with that submarine with (inaudible), and they are not really saying much about that, unlike with Bulava, where more of information, you cannot hide there. You can at least keep it quiet, but something

isn't obviously working well with that program.

And on non-strategic weapons; I think it's still striking that have so many of them in the Russian Military, not training to use them, there is very little of that, think many years about what to do with them. A lot is being said and demonstrated, and trained and exercised with strategic. With non-strategic with technical weapons, there is a lot of them, and nothing is really happening with them. You don't see in any way. You know, many things you cannot hide, except for (inaudible) soldiers, but troops are really not training for this environment at all.

MR. SHAPIRO: So, we are just about out of time, so I want to ask the Panelists, in one least question, maybe they can each take about 30 seconds on, it's a simple question really. Given where we started with Putin's nuclear threats, and the sort tenor of the conversation has been that that isn't, as Pavel just said, reflected in the reality in the ground, that there is a certain amount of strategic stability in the Russian and U.S. arsenals, which isn't being dramatically eroded.

What should we do in response to Putin's nuclear threats? And I suppose the answer can be nothing, but I'd be interested if there's another answer. Why don't we start at the end, with Hans?

MR. KRISTENSEN: Well, I wouldn't say nothing, but I should certainly say, you know, please don't overreact. I think we've over the last year or two, a fair amount of overreaction to this. And it's been said by others, but I do think that beyond everything else, I think the Russian -- the issue with the Russian menace, if you will, this days, is not a nuclear one; it's a -- you know, it's all that sort of little green men, border activity sort of stuff, and very low-tier types of conflict challenges, that's where the challenge is.

So, we have to be careful, not because we hear some official statements

that said, well, we would consider using nuclear weapons, and therefore say, ha, you know, gee, that means that they are lowering the threshold. So I think it's very important not to overreact, but it's also important to react to some extent, but I think it's more about challenging the wisdom of using nuclear language so loosely. That is the problem.

And especially if that style reflects that the current generation of Russian plan, the military planners, and policy strategist, just don't know very much about from the past, or haven't spent a whole lot time on it, or what the situation is. So I think, you know, trying to have conversations with the Russians about what the implication is for potential use of nuclear weapons is might go, you know, a pretty long way.

MR. SHAPIRO: Steve, conversations?

MR. PIFER: I would second both those points. We ought not to be overacting to what we see, because the actual programs are far less threatening than the rhetoric would suggest, but it would be appropriate to call Putin out on this kind of irresponsible talking. Look at what a Barack Obama, say, over the last eight years.

Every time he talks about nuclear weapons, it's about reductions, it's about reducing their role in American Security Policy. You know, at one point it was about even their elimination, and there ought to be a certain amount of pushback, rhetorically, against the Russian President when he uses language that suggests he has a very loose understanding of these weapons and their potential effects.

MR. SHAPIRO: Pavel?

MR. BAEV: I agree. And I think it's also possible to find allies with that in the other unexpected camp. There are very strong anti-nuclear sentiments in Europe, in Germany in particular, and it is one thing when Putin is called from the official quarters, but I think to mobilize that sentiment is also a very important resource for foreign policy.

That nobody is going to respond in kind, but there is a lot of opposition,

to the rhetoric to the activities, to potential nuclear testing in the sense. And it's really a broad coalition. It's not only strategic planners, it's also grassroots.

MR. SHAPIRO: Okay. Well, I don't think it would be possible for you to overact in thanking the Panel for an excellent presentation. So, please join me in thanking them (Applause).

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