THE BROOKINGS INSTITUTION

CHALLENGES TO FURTHER NUCLEAR ARMS REDUCTIONS

Washington, D.C.

Monday, April 14, 2014

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P R O C E E D I N G S

MR. PIFER: Well good afternoon. My name is Steven Pifer. I am a senior fellow here at Brookings, where I direct the Arms Control and Non-Proliferation Initiative. And it's my pleasure to welcome you all to this event, which is being co-sponsored by the Arms Control and Non-Proliferation Initiative and the Heinrich Böll Foundation. And we're very grateful for the Foundation's support for the event. We're also grateful for the support of Plowshares and the Carnegie Corporation for the Arms Control and Non-Proliferation Initiative here at Brookings.

What we want to do today, first of all, is release a paper, which I hope you received when you came in. It's on the future of arms control, that was prepared by the Heinrich Böll Foundation, and this paper comes out of a workshop that was held last September in Berlin, to look at a range of issues about arms control and proliferation, both the opportunities, but also some of the challenges -- some of the things that might hold up arms control. And you have on the panel here, four people, each of whom contributed a piece to this paper. And what we're going to look at today are what are the challenges to arms control. What sorts of issues out there might make it more difficult, for example, to move beyond the New START Treaty for further reductions of strategic nuclear weapons, or to get into a dialogue that might lead to constraints or even reductions of non-strategic or tactical nuclear weapons. And when you look at those challenges, they're both technical and political issues. Certainly the technical issues were there even a couple of years ago. It was fairly obvious that progress on further nuclear reductions was going to require at least some kind of meeting of the minds between Washington and the west and Russian, on issues such as missile defense. The Russians have expressed concern about Prompt Global Strike, and in other questions, the absence of a conventional armed forces arms control regime in Europe. So those are

the sorts of issues that have been linked in the past for the nuclear reductions. Then I think we all understood, we're going to be issues that had to be addressed if not before, then at least in parallel with the question of further nuclear cuts if you're going to make much progress on that. But over the last several months, we've seen a different issue arise. It's more of a political issue. And that's the challenge of how do you move forward on arms control when you have what looks to be a fairly significant downturn in U.S. Russian and European Russian relations, due to the events in Ukraine, and the Russian response to those events. And what you have I think, is a situation that has complicated the broader political atmosphere around arms control, which on the one hand, makes it much more difficult to do arms control. Some of the ideas that we talk about in this book may not get quite the hearing that they would in Washington, that they might have received, say, three or four months ago. But on the other hand, I think this crisis demonstrates the value of arms control. It's I think useful and reassuring in the west, and probably also in some quarters in Moscow, that as we headed to a more difficult period in relations between the west and Russia, there are the bounds in the New Start Treaty, on strategic nuclear weapons. There's the predictability -- there's the transparency that an agreement provides. But we've got a group here. We decided that we'll focus in on what are those challenges that might inhibit further nuclear reductions. And we've got a very good panel, with a Russian -- or somebody representing the Russian viewpoint, an American viewpoint, and a German viewpoint. So our first speaker is going to be Nikolai Sokov. He is now a Senior Fellow at the Vienna Center for Disarmament and Non-Proliferation, and he'll describe some of these issues as he sees the Russian perception. Our second speaker is Dennis Gormley, who's at the University of Pittsburgh, and he'll discuss some of the technical questions that might impede further nuclear reductions, and then finally our third speaker is Götz Neuneck, from the University of Hamburg, and

he'll talk about a European perspective on these questions. And then after that discussion, after some discussion among ourselves, we'll then be happy to open up the floor to questions from the audience. So Nikolai, why don't you get us started?

MR. SOKOV: You can hear me right? How does it work? Now you probably do. Good. Well, it's a pleasure and an honor to be here. Thank you Steve for inviting me to this panel. When Steve actually asked me to speak along these things and said what he wants me to discuss, I thought, oh my God, that's really not interesting. But I'm forced to, I'm sorry. Oh yes, and one kind of thing, that I should say from the very start -- you already probably guess yes -- I stutter. I've stuttered my whole life. When I became a student back 40 plus years ago -- 45 years ago -- I decided I should overcome that and forced myself to speak at every seminar and I have not been able to stop since. So please, Steve, please stop me when I'm out of time.

So anyway, the dialog on nuclear arms reductions and control, whatever has been actually stalled for about ten years, maybe slightly more than ten years. So in this sense, nothing has -- well nothing very interesting has happened. The reset has of course helped. The resets changed the atmosphere. The reset made possible the New START, which is a very nice treaty, a very useful treaty, but nothing really too dramatic, to be honest. The New START did the most important job at this moment, back in 2010, to restore the (inaudible) verification transparency regime. Yes, and that was really needed, that was done, but that's fundamentally it. The bottom line's been about the same for about ten years I already said. The United States has really concentrated primarily on nuclear weapons -- trying to reduce nuclear weapons. Russia has developed, by about 2005, although the elements had been there before, this so-called integrative approach to arms control that includes almost everything -- first and foremost missile defense, conventional strike weapons and things like that. So that contradiction

has not really been resolved for a long time, and that's why we have a stand still.

We always have known that it takes two to tango. I would say that one of the biggest challenges that we face now -- well, you know sometimes -- well it doesn't make sense to tango if you don't have a partner, right? Doing that alone is strange. But it's next to impossible to tango if you got more than two partners. Yes, and what we actually see in the last ten years, maybe longer, was an attempt to tango with three partners. Yes, and the third was Congress. And of course, you're bound to step on someone's foot -- absolutely. Really what happened, the big change especially, like on the U.S. side compared to the cold war, has been very close involvement on Congress in arms control. Instead of oversight, Congress has really defined the few very important lines if you have elements in the U.S. position, including, or really no discussion of -- or at least no concessions on missile defense, on conventional weapons. Isn't that really kind of doomed, or the possibility of exploring quietly new kind of options and trade-offs. Since the line has been really cast and stalled on both sides, we don't go anywhere. Just a few words on the missile defense -- it's been a very familiar situation for 30 years actually. Since the SDI -- the missile defense system that might emerge in the future, was always kind of causing a stale mate on the reduction side. That was the case in the eighties, that was overcome by concession by the Soviet Union. To some extent that was the case in the nineties. It has been the case since roughly 2001. On tactical nuclear weapons, same thing, nothing's really going. Frankly, I do not see a lot of role for tactical nuclear weapons in the Russian nuclear strategy, at least not in Europe, but going ahead, and forging a new treaty doesn't really work because you really need a whole new concept of a treaty. You need to shift from delivery vehicles to war heads -- that's new facilities open for verification -- and Russia's very reluctant to do that. So that's done too. Russia just invented a really convenient pretext on the demand for the

United Stated to withdraw the remaining B-61 bombs from Europe, and that's just a pretext really. And to be honest, the NATO members that want to keep some of them in Europe really play into the Russian hands in my view. So everyone's happy, really. Nothing's happening means everyone's happy. So it's in this sense of the crisis over Ukraine, does not really change much. The crisis in Ukraine simply brings forward the same things that we've seen before. It certainly changes the atmosphere to the negative, but the atmosphere was actually quite bad before the crisis as well, if you talk about arms control. The administration has stopped all the processes of regular consultations but I think that process will resume maybe in the fall or something, but once again, it's the substance of the positions of the two parties that prevents progress.

Now let me turn to the stuff that everyone finds interesting, and that's of conventional weapons -- conventional strike and defense weapons. And my contributions, that volume is precisely about the conventional strike and defense weapons. I already mentioned that one of the things that the Russians want right now -- they want to include them into the dialog and of course, the United States is very, very limited on what could be done on that. So at the moment, that just contributes to the deadlock. I think that the deadlock that we see today, will not last forever. It never happened before, and at some point, the situation will change, and I think that the driver for this change will be the efforts of the Russian side to develop a modern conventional strike and defense capability similar to what the United States has. The effort's been underway for more than ten years, and most people just conveniently wave it away, saying that Russians will never be able to do that. Yes, I'm pointing out especially the 2008 war in Georgia, where the performance of Russian troops was, well, not very stellar -- let's put it like that. But it's important to keep in mind that after that war, after 2008, investment into conventional strike, especially, capability, has increased

dramatically. That late last year, in a series of meetings in late November and early December, Putin actually spoke openly about the Russian intention to develop the Prompt Global Strike capability. To me, frankly, as I've been actually following Russian developments for a long time of course, to me this actually means that he does -- well, that the government of the military defense industry actually see the effort succeeding in the future. They would not have gone public unless they are really sure they'll succeed. The question is when. If you follow capabilities, the technological gap between the United States and Russia used to be 10 to 15 years, around the year 2000. Now the technological gap I think is down to three to five years. On PGS, on Prompt Global Strike, actually the two sides start at the same time roughly, but since the Russians actually plan to emphasize the ICBM technology that they know extremely well, they've excelled in it for decades -- I think they have very good chance at getting PGS capability soon. So my hunch is that in five to seven years, we might actually see an operational conventional strike capability in Russia. The missile defense capability in Russia gets much better, actually, but I think we speak about roughly the same time horizon.

What that's going to change? That's going to change a lot. It seems to me that it will come as a surprise, as it always does -- the same dynamic that we saw with transition from SALT 1 to SALT 2, when the Soviets suddenly acquired the technology that apparently few in Washington thought that they could master. I think that Washington today is possessed with the same kind of idea, that monopoly on more unconventional capability will exist forever, just because no one else can do that. I think that's not exactly very wise -- old attitude. So what we're going to have is -- conventional capability -- the more conventional capability that was seen since Gulf 1 -- did a very important thing. It introduced military power back into foreign policy. Nuclear weapons cannot be used -- they're just so horrible. Traditional armies could not be used the last

time the United States used it was Vietnam. Last time the Russians used it was Afghanistan, right? You cannot use it. So for some time, in about seventies, eighties -- military power was almost absent from international relations. Starting with Gulf 1, that capability once again emerged, but only like on one side. Just try to imagine what happens when one more country and Russia specifically can actually be more active in foreign policy, and is capable of supporting its foreign policy with military force when necessary. When tanks don't have to roll, and you don't have to send the polite green men somewhere, like what happened in Crimea, you can actually do the strikes from your own territory. Because for Russia, the main theaters of cooperation are actually just across the border, even not in fact Europe -- I believe that they're looking at primarily, but to the south. Afghanistan, Middle East -- it's places like that. So that's what I think we're going to see, and we're just not prepared for that. So the consequences for arms control, yes -- I'm actually wrapping up -- two consequences for arms control is in these not one or another, it's actually both. The first is that the Russians will say, well, we will not negotiate now. We finally got that capability -- why should we actually negotiate it away. On the other hand, like in Washington -- people will probably see direction need to do arms control. So I think in five to seven years, it will be too late. And once again, I just refer you back to the MERV challenge back in the seventies, and the result of this conviction that we should not actually put MERV on the table, was a very convoluted arrangement and so that took years and years to develop.

The second consequence I think will be NATO. It is NATO's strategy right now -- based on a proper mix of nuclear, conventional ocean defense. I suspect that some members of the alliance might actually want to change that mix, because when they do not have to fear of Russian tanks rolling, but instead that Russian will be able to do actual strikes without immediate contact, physical contact, they might feel very

concerned. Because it might in fact want NATO to emphasize nuclear weapons more than is the case today. To conclude, I really think that the concept that underlies that book that we discussed today -- the concept of preventive arms control, is a very good concept. I'm a strong believer. I think we should actually try to preemptively deal with that issue. I'm just a bit skeptical on the political dimension of that. For some proposals that I have, I have to refer you to the book itself. I can hope that you'll actually read it. Thank you.

MR. PIFER: Dennis?

MR. GORMLEY: Yes, thank you. Good afternoon. It's a pleasure to be here. I'd like to talk about an issue that bears some relationship to the comments you've just heard. It has to do with some of the barriers to deeper reductions in nuclear weapons that stem from the emphasis that's been given in U.S. military developments, essentially beginning in the first gulf war and manifesting itself strongly in the 2010 nuclear posture review, where strategic stability was a featured commentary, mentioned 29 times in the document itself. And featured to emphasize the extent to which the willingness of the United States to achieve deep reductions in nuclear weapons was dependent on growth and its capacity to use precise conventional delivery systems to achieve very precise affects. So -- and that was cast in the 2010 nuclear posture review as the U.S. achieving an unrivaled growth in American conventional weapons superiority, which of course, thought of in the context of how that might resonate in places like Moscow and Beijing, raises a different set of issues and challenges for the United States to somehow square this dilemma, where you might be at once scaring the living daylights out of your -- out of those states that you wish to travel the same path to deeper reductions in nuclear weapons.

So the challenge it seems to me is -- how do we not give away our hard

earned advantage in conventional capability, but at the same time, allay concerns in places like Moscow and Beijing, initially? I want to focus on conventional Prompt Global Strike, but I would also strongly point out the importance of recognizing that Russian in particular -- to some extent China -- are enormously concerned about the growth in precise delivery systems surrounding filling, for example, Ohio class submarines with large quantities of advanced Tomahawk cruise missiles, and getting very close to Russian territory and being in a position to improve those delivery systems so that they can penetrate even silo caps. So let me talk about conventional Prompt Global Strike, and very, very briefly.

For those of you not familiar with it, there are three current systems. The first -- the United States Air Force's conventional strike missile, which commenced in 2008, after the demise of an attempt to place conventional war heads on the Trident submarine, which created a fire storm of debate about being able to determine whether it was carrying a nuclear or conventional round. The conventional strike missile employs a whole host of glide technologies. It has huge cross range capability and maneuverability in space, together with great accuracy. Of course, this is on a set of slides. The conventional strike missile has not yet had a successful hypersonic flight, and its original intention to be in a position to deploy a very small number and niche capability by 2012 has obviously passed. So it remains to be seen whether it meets its desired objectives.

The second is an even more ambitious program called the hypersonic test vehicle 2, and it is funded by the Defense Advance Research Project Agency -- DARPA. And it is intended to travel at 13,000 miles per hour, right along the upper atmosphere of space, and it thus far has had very modest results. It has yet to sustain aerodynamic control over an extended period of time, no less for the full mission range of the system, and as a consequence, its budget has been cut severely, down to two million

dollars for the 2014 budget.

The third and most successful, but with limited capabilities by comparison of the theoretical capabilities of the other two systems, is the U.S. Army's advanced hypersonic weapon, which has achieved in one successful test, a range of 2400 miles. This would impose on the U.S. the requirement to consider forward basing for it, which is not the preference for truly prompt conventional strike systems from the continental United States. But it is as successfully, so far, but several other tests have to occur before any system is ever deployed. So together, these systems represent not much to write home about, but remain objective systems with an intent to deploy a niche capability for whatever system can be made to work successfully. I have a much longer piece for those of you interested in the German security journals -- Security and Peace -- that just came out. It's the Volume I of the 2014 edition of this journal. If anyone is interested in looking at it, it's a lengthy paper. It looks at the risks and benefits of conventional Prompt Global Strike. I have a few copies that I could send to folks, so talk to me later on if you're interested.

I'll come out squarely and say my conclusion in the piece, is that I believe the risks clearly are more prominent than the benefits of deploying conventional Prompt Global Strike for a variety of different reasons. And when people talk about a niche capability, they're talking about numbers in the area of 20 missiles. But if you look at the provenance of the conventional Prompt Global Strike System, you see that much more fulsome capabilities were in the minds of some of the original planners of this, dating back to the mid to late 1990's, where they saw a large scale transformation of heretofore nuclear intercontinental ballistic missiles to conventionally oriented systems. So there is always that danger in the mind of our companion countries that are achieving deep reductions, that these systems will be turned into a more full-some capability by some

future administration.

So what are the chief risks? I'll talk about those. The dangers are meager and frankly, I won't bother on articulating any of those. But the dangers, it seems to me, are first, the creation of a strong pre-emptive incentives, on the part of states, certainly in gun sights of these systems. And even those states wishing to emulate U.S. developments -- and it comes in strange packages. Japan, for example, has talked about the need for a long range Prompt Strike System that can deal with emerging problems like challenges to the islands in the region. And if you look at all of the huge outbreak of countries interested in pre-emptive strike systems in north east Asia, the addition of Japan is a toxic mix to that already explosive outbreak of the proliferation of missile technology in that region.

But it seems to me the true Achilles heel of conventional Prompt Global Strike is the notion of planning an attack within a 60 minute time frame, that greatly depends on an unprecedented capacity by the intelligence community to provide highly accurate intelligence, and correct intelligence, about what the target is truly up to and whether it merits the kind of attack that may engender unwanted consequences. And I think that is really the long pole in the tent, when it comes to this concept.

So moving on, let's assume that conventional Prompt Global Strike systems, in a niche capability, are deployed. What implications does that have for future counting rules? I argue in my paper, that we must be willing to accept counting rules, not just for existing missile types, ballistic missiles that might be armed in the future with conventional warheads, but for those of the so-called new types, which under New START are not counted as potential delivery systems. And these have to be added. This would include boost glide and even in my view, hypersonic systems -- ought to be included in future counting rules if we reach that point.

Now let me end on a couple of points that I guess I would characterize as part of a concern that I have for the unintended consequences, without looking closely at all of the ramifications of a deployment of this kind of capability, without serious attention to these unintended consequences. And it seems to me that the first one is really oriented around the necessity for both the U.S. and Russia, in particular, initially. To achieve deeper reductions, is going to require the kind of dialog and transparency that is absolutely unprecedented in the history of arms control, in my view. And to achieve progress, the parties -- it is essential for the parties to abstain from the kind of exaggeration that tends to occur and appreciate the distinction between what is hypothetically possible in these scenarios and what is realistically achievable when evaluating these threats.

The second thing is, the unintended consequences with respect to arming heretofore, exclusively nuclear missiles and then adding new classes of capability -- boost glide and hypersonic, with conventional warheads, in an era when we have -- I would argue, made enormous headway in constraining the proliferation of nuclear armed ballistic missiles, in the treatment that the missile technology control regime has given to nuclear oriented ballistic missiles, has achieved considerable success, I would argue. Now you add conventional warheads to these systems and furnish them with this perceived utility, and you start seeing activities along the lines of MTCR states -- other MTCR states embracing, if not boost glide systems, but conventional long range conventional missiles in a roll, not unlike conventional Prompt Global Strike. So you could open Pandora's Box by going down this path without careful consideration for the ramifications for taking these actions that might redound to our disadvantage in terms of incentifying states to pursue conventionally armed long range missiles of a variety of different sorts. I mentioned Japan's example before, but there are

many others that I could add to that.

And the last comment I'll make is really a concern about the penchant for the United States, and this is a penchant that is on display throughout its history. You know, our history is an illustration of the engineering prowess of the United States as a society -- to build great highways across the American continent. We do not have a corresponding history of elegant consideration of strategy. And I would say that the notion of conventional Prompt Global Strike suggests this tendency to dabble in this very appealing technological example of what can be done with missile technology, rather than concentrating on all of the unintended consequences of going down that path. So I would urge us to be very careful, particularly the U.S. government in examining this system in a truly holistic way before we proceed down that path. Thank you.

MR. PIFER: Thank you.

MR. NEUNECK: Can you hear me? Can you hear me -- no, yes? Okay, so I have of course -- at the outset let me thank first, Mr. Pifer -- Steven Pifer and also Filona Beck and the Heinrich Böll Foundation for inviting us for this event. It's of course a privilege to be here and to discuss the topic of this brochure, which is the "Future of Arms Control" in critical times. As a European or as a German, I should sit between the Americans and the Russians, but I'm a little bit outside here, which is no problem for me, because the first part of my presentation would be highly political. I'm a physicist, and I'm happy to challenge Nikolai on technical subjects and I fully agree with the cautious words of Dennis Gormley about solving deeply political problems by technological means. This never worked quite well, and cause a lot of trouble and turmoil. So the book, I think, is a good opportunity to deepen the Euro Atlantic Transatlantic dialog on arms control and non-proliferation, and I think you should have a look in it. It have four chapters -- one of how to deal with new approaches of arms

control. Do we need approaches -- we live in the twenty-first century? It's no longer the parity based, symmetry based arms control which works quite well. There are new instruments and institutions available and the second is what we talked about more -- much more technological developments. Technology developments always pushed arms control in some kind of corners. So technology sometimes was developed and then later on, the people started thinking what to do with that -- strategically and also politically. And then there is also a chapter on drone warfare. I think this is a subject, which I think, is much more relevant than Prompt Global Strike, which is clearly a niche capability, and of course, I'm a little bit surprised to learn that our Russian friend here, which I know for a long time, is a brave pundit of Donald Rumsfeld, by observing that the Putin also goes -- wants to go in that direction. I only can say good luck with that. I think the first chapter, Alyson Bailes from the U.K. explains that the classical treaty method of defining arms restraint are unsuited to reach non-state actors and set actions to block supplies to maverick states and violent non-state actors, ranging from embargoes, sanctions, and regulations at the end, are certainly necessary -- nevertheless, the treaty method has not been, I think, extinguished, as the Armstadt Treaty shows. Alyson Bailes also writes that we should also have in mind, that new export moves by hard pressed defense per users and an increased temptation to rely on relatively cheap nuclear weapons as well as conventional weapons, are shifting balances in some regions. So I agree with Dennis that we should have first defined the strategic goal and then we should discuss about the weapons -- not the other way around, excepting some kind of technological fix here, and after deployment, thinking what that means. And I think there are not only examples in the Euro Atlantic context, but there are also examples in the Middle East and south and north and Asia here. Des Browne, former Secretary of State and Defense, in his contributions, points out that the business of the cold war, and the legacy of mistrust is

unfinished. Business is simply unfinished and he proposes to rematerialize the START talks within the P5. Others arguing for a renewed multilateral, multilevel system of arms control disarmament based on equal rights and equal binding rules of old and new powers. So I think it is always useful on a very conceptual basis to talk about new approaches. Nikolai mentioned preemptive arms control. We called that ten years ago, preventive arms control because preemptive already means the systems are deployed and that we need for crisis management purpose some kind of red telephones. I think that's not the right approach. The right approach is to prohibit specific destabilizing technologies. And obviously, from the Russian side, this is unheard. The topic of the session here, is first, nuclear disarmament, and I think we didn't speak much about that. So let me allude a little bit on that. You of course know that President Obama has proposed a one third cut on the new START limit on deployed strategic warheads, which was never answered constructively by Mr. Putin. Too many unsolved areas such as ballistic missile events and prompt global strikes, now to nuclear policy, especially technical nuclear weapons, and the military superiority of conventional forces -- these are major obstacles for these cuts. There's no doubt that the whole package causes a lot of problems and unfortunately, the American side never understood that these sometimes hyped technical developments are a major excuse and a major factor in the Russian perception. Unfortunately the Europeans also were never capable to balance Russian imperial ambitions and never found ways to transform the European security architecture based on their own European interest in a functioning European security system. I think this is the major problem and the major sin of European security policy. Despite the current crisis, most of the Europeans think that existing nuclear arsenals of the Russian Federation and the U.S. are simply too high. The U.S. and Russia possess a nuclear arsenal -- deployed and non-deployed -- strategic as well as non-strategic -- that by far

exceeds reasonable deterrent requirements. Both countries need to organize a more energetic dialog to find new ways for predictable and verifiable strategic stability setting at low numbers. And currently in our discussion we will see whether low numbers are possible any longer or not, depending on the cries over the Ukraine.

If we look to numbers, then I think the U.S. is still planning with 700 deployed strategic nuclear delivery systems, 500 ICBMS, 240 C launch ballistic missiles, 60 bombers. Russia is already well below the 700 deployed delivery systems limit, with 473 nuclear delivery systems -- the U.S. has around 809. So we have actually a different symmetry here. In principle, it is not so complicated to accelerate the New START reductions even beyond 1550 warhead level, to convince the Russians not to invest in nuclear force modernization. I think this is also unheard by the Russians. Unfortunately, the crisis over the Ukraine delays another formal bilateral nuclear agreement. Most of the European countries are very much interested in such an agreement. We of course have also to speak about technical nuclear weapons and I think an exchange of data on the numbers, locations, status, is overdue, as well as dialog on nuclear doctrines and stability. Cooperation about ballistic missile defense seems actually far away, but given the limited performance of the current BMD systems and data exchange, and the creation of BMD Corporations, there is still a possibility. The Russians also are not interested in that. The capabilities actually are very, very limited, and I speak here as a physicist. The interceptors cannot reach, under any circumstances, Russian ICBMs heading to the United States, and it's simply an excuse by Russia, to say that BMD, the current BMD architecture in Europe is a problem for strategic forces. Either they don't understand the physics and geography, or they are still in their ideological mood and after the breakdown of the dialog between Europe and Russia, I fear we are in the last row of the debate. Let me speak a little bit about the Ukraine crisis and its impact on arms control. Throughout

history, it becomes clear that U.S. Russian arms control advances are highly dependent on the political climate between the two countries. The crisis is over Crimea and the Ukraine, which is far to be over -- might become a long lasting stumbling block for any progress in the field of arms control. On the contrary, there is a danger of further escalation. Some voices in Europe are demanding military actions such as regular maneuvers, forward permanent deployment of NATO troops and equipment. Of course, strengthening ballistic missile defense systems in central east European countries, for deterrence purposes, other Article 18 increased modernization and re-armament of NATO's military forces, and withdrawing NATO's proposal for BMD cooperation with Russia. NATO representatives are arguing that NATO might face a new adversary to our east, and if Russia is going that direction, then we would have a lot of problems, I'm sure -- not only the U.S., but also the European countries. So I think that's in development. It's not in the interest of anybody. It has huge financial, cultural and other ramifications. As long as the crisis is not over, and the robust arrangement of the integrity and economic stability of the Ukraine has not been found, the long term consequences of Russia's election are unclear. Nevertheless, we should have it mind that the OCE procedures which are a result, by the way, of the cold war, are still working the conflict prevention mechanisms, the Vienna Document. The Open Skies Treaty helped to calm down the unclear information gaps by improving transparency and predictability. It is obvious that such instruments can play a de-escalating role. And I hope this, at the end, should also turn Russia back on a reasonable discussion about the future of European security.

We should also have in mind that the Europeans benefitted heavily from arms control agreements at the end of the cold war. Simply mentioning the INF Treaty, the CFE Treaty and the Open Skies Treaty, although all are in danger -- they are even

more in danger if that comes true what Nikolai already mentioned. That would be certainly the breakdown if Prompt Global Strikes, long range accurate systems are developed and deployed in Russia, then this would certainly be the end of the INF Treaty.

We should also understand that the breakup of the Soviet Union caused a lot of problems which not have been yet articulated, or so far been solved. When the Soviet Union shrank and became Russian, it lost, and that, I think is -- these are important figures, not to speak all the time about nuclear warheads and technical nuclear weapons but the population shrank by one sixth, which is 25 million. And the Soviet Union, or Russia, owned a lot of frozen conflicts, mainly in central Asia. Twelve former Russia pact countries became NATO members and changed the landscape in Europe significantly. I think a solution of these problems is only possible in cooperation with Russia -- not without Russia. So if you wanted to go back to the version 2 of cold war, then I think there would be no chance to solve any of these conflicts. On the contrary, global competition, original proxy wars and arm races are very, very unlikely -- they are very likely.

It is also important to remember that during the original cold war, arms control helped to reestablish dialog and to find stabilizing, very virile and robust limits and restrained from the most dangerous category of weapons, to prevent a cataclysmic scenario of a nuclear exchange in Europe. It is quite clear that if Russia starts developing long range systems, Europe would be the first target, in principal. Because it is quite easy to have short range systems, that could be do-able. But if you deploy long range systems, you need superior space capabilities and I think Russia has a lot of rough problems here to do that. I think it must be evident for all of us, that without including Russia in the long run, in comprehensive European security architecture, security in Europe is not achievable. And let me quote Moscow's, or Ronald Reagan's ambassador

in Moscow, Jack Matlock, who said, "Recently, it has been a very big mistake by Russia, by the EEU and most of all by the U.S., to convert Ukraine political and economic reforms into an east west struggle." So if we go that direction, then we all will be very much in trouble. So I think measures must be found to stop the spiraling up of the crisis and make further nuclear reductions again feasible. If we fail, then I think that would be a dramatic turn in world history, and we should really think carefully whether we want it to go that way, or the way of cooperation is maybe the better alternative. Thank you.

MR. PIFER: Okay, thank you very much. I think we've heard three presentations on some of the obstacles to proliferating nuclear reductions. Without to Götz's last comment -- I prefer not to think in terms of failure as much as we may be heading for a period of pause. And so the question is, can we then preserve enough so that when we get past this crisis, that in fact we can move back down and begin to address some of the questions that are now in the arms control agenda. But I would like to propose one question to both Nikolai and Dennis. You both talked about the potential problems that long range Prompt Global Strike could provide for arms control. But when I try to be optimistic, it looks to me that in fact, there may be some solutions to these problems if the sides were prepared to deal with them. In large part, because I think you both indicated that you are talking about a niche capability. In part, because, building a system that can convey a conventional weapon, 6,000 miles away, is going to be expensive. And the sorts of targets that you might want to go after in that kind of time frame, at that distance, are probably not all that large. So it would seem to me that if you were talking about for example, conventional ballistic missile warheads on intercontinental ballistic missiles and serving launch ballistic missiles, there already is an answer in the new START Treaty, which makes no distinction between the nuclear warhead and conventional warhead. If you begin to talk about something like hypersonic

glide vehicles, which I think arguably, and the Defense Department said, these would not be covered by New START. And I think that's probably correct, when you look at the definitions of the treaty. However, if one side was looking at building 20 or 25 of these systems, it would not be difficult, basically to include them in the limits. So is Prompt Global Strike something that, if the sides go ahead, if they can in fact, get past the technical challenges, that might be addressable by some of the arms control rules that are already in play?

MR. SOKOV: Well, that's a very good question. And I think the answer in fact lies in the approach that was proposed by Obama administration after signing of New START. I fully would agree with that, in fact, I had written about that, as I said here earlier, about the need to shift the emphasis from delivery vehicles to warhead stockpiles. So when Obama talked about the need to address stockpiles, strategic, non-strategic, deployed and non-deployed, that's one of the answers in my view that's a preferable answer to what you really do with the conventional strike capability, in terms of arms control. Because, yes, perhaps the hypersonic glide vehicles will not be nuclear, but you could theoretically.

MR. NEUNECK: Yeah, you could equip them for nuclear warheads.

MR. SOKOV: Plus you also need to understand that the niche capability for the United States is different from the niche capability when you talk about Russia. The interesting thing there is that the two countries have in mind, roughly the same targets, or at least the targets that are in the same part of the world. It's all about Eurasia south of Russia. But for the United States, you actually need to strike from the other side of the world. For Russia, it's in the neighborhood, so you actually need somewhat different systems. Plus for the United States, there is a big challenge that was mentioned here, about equipping the good old strategic weapons like a SLBM with conventional

warheads simple because if you launch them, they're bound to fly towards Russia or China. Russia does not have that challenge, simply because, they will not fly towards the United States. So we actually -- I was talking about the capability and not about the same systems. So the systems will be quite different and really, the only way to tell that specific missile does not carry a nuclear warhead, is to actually to look at the stockpile and control the entire nuclear weapons stockpile so that you know exactly which delivery vehicles have nuclear warheads and which have conventional warheads. That's really the only way, if that's the way forward. And let me just mention one small thing that I did not mention and that's the INF Treaty. Russia has been -- well the Russian military has talked about conventional intermediate range missiles for a long time. For the first time in fact they mentioned that in the year 2000, so it's like 14 years ago. So, yes, that's theoretically a nuclear capable missile. They want them for conventional missions, but once again, do you really need arms truce to do something about that. The second option is really more about transparency, more like the Vienna document's approaches, but it needs to go beyond the range of systems that are covered for example, by the CFE Treaty of (inaudible).

MR. GORMLEY: I would, as a senior government official, share your concern about the lack of the U.S. government's ability to afford more than a niche capability. But God only knows what a future administration would do. Particularly again, I would invite you to see my longer piece on this that talks about the provenance of these systems and it just seems like a glide path forward, for a country so fixated on missiles and, the kind of capability that can be created. I tried to bring some degree of sensibility to this by reminding people about the difference between a nuclear weapon and a conventional weapon. And nuclear weapons are very unforgiving, and the notion of assigning two to a particular strategic target -- start thinking about a so-called precise

conventional weapon with a rather small warhead providing similar capability to take out an important strategic target. It's going to take not just two but many more. So niche starts growing as a by-product of then, the perceived recognition that you need a hell of a lot more of these systems. So that's -- there's a slippery slope that one ought to worry about when one thinks about these systems.

MR. PIFER: All right, well let me go ahead and open up the floor to questions. If you could identify name, affiliation, keep your questions short and please have a question mark at the end. Great.

MR. THIELMAN: Greg Thielman, Arms Control Association. One of the categories of responses to Ukraine, you hear a lot in the U.S. and NATO, is that the U.S. should respond in the missile defense sector, accelerating the deployment of SM3 systems to Europe or even reviving the Czech Polish strategic system proposal that George Bush advanced. So I guess my question is, I'm assuming that the physics will not change, that Götz was referring to -- that they would not be capable against Russian strategic systems, but the intention, it seems would be radically different, since both George W. Bush and Barack Obama have said consistently again and again, that all of these missile defenses are oriented against missiles from the Middle East. Now Russia says that they don't believe that, and I guess my question, Nikolai is, would this kind of action change anything, or would Russia just say, we told you so?

MR. SOKOV: Well of course Russia will say we told you so. That's quite obvious. You know, well, why not deploy an interceptor like in Poland? The big question is not whether we deploy interceptors in Poland. The big question is whether these interceptors will intercept something. We keep forgetting that ultimately all the changes in the missile defense plans were really driven by technology -- what was available. What can we actually do, as in what can we develop? The fourth stage of the phased

active approach was not cancelled as a concession to Russia. It was cancelled because interceptor didn't work. So that would be -- I'm very sorry to say that, but that's a Russian response. Let's deploy something, just because you don't like it. I think it does really make sense strategically. Same as the ideas to get rid of the three no's and deploy tactical nuclear weapons to the east. What can they change? Quite frankly nothing. So there is a difference between the psychological dimension of a response and the strategic dimension of the response. Well, I don't exactly think that such proposals will do much in terms of containing Russia or deterring Russia or something. The bottom line there is very simple, once again. You got the Baltic States that are very small but face this big Russia. If you look at the same thing from the Russian side, you do not see three small Baltic States -- you see NATO as a whole. So you cannot change that perspective. You cannot change the fact that we used to talk about the security of system from Vancouver to Vladivostok. You look around the globe -- it never materialized. And all these kinds of things, they never really came to pass and yeah, we're still there.

MR. PIFER: Greg, I've actually expressed some degree of criticism about the idea of reviving the Bush missile defense plan, which seems to be problematic in two ways. First of all, the Czech government now says it would not accept the radar --

MR. SOKOV: That's, it wouldn't -- they said that they wouldn't mention that, yes.

MR. PIFER: And second with regards to the interceptors going to Poland, they would be based on the ground bases interceptors which have now not had a successful test flight in 6 years. So there are smart responses, there are unwise responses. I would put that in the latter category.

MR. SOKOV: Let me tell you that the Russians will probably be actually quite hippy, if we decide to deploy interceptors that don't work.

MR. BERG: Bob Berg, Alliance for Peacebuilding. Thank you for this panel. I wonder -- I'm sure we all agree that formal negotiations are certainly off the table now, but I'm wondering whether you see any possibilities for productive informal discussions to keep hypothetical ideas and solutions kind of churning around, so that there is at least some continuing constituency for negotiations, once they are permitted to be formal.

MR. SOKOV: Yes, I hope that, yes, I'm not divulging with any secrets, but the Center for Non Proliferation Studies in Monterey, for which I work, in Vienna -- I work in Vienna, but the boss is in Monterey. We did actually track one and a half meeting with the Russian MOD -- it's the Department of Defense/State here. We had the meeting in Switzerland, in the middle of the crisis over Ukraine. So most official participation had to be cancelled of course, because the time when we planned the meeting there was no crisis in Ukraine. But it was interesting how we received signals from both sides -- that they actually wanted the meeting to be held, and how the atmosphere at that meeting was considerably more constructive in fact, than was the case in previous Track 1 meetings. About only ten percent of time was spent on the familiar disagreements, like missile defense -- things like that. People tended to kind of mention that in a move to the next issue, so yes, surprisingly that very closed door, very kind of private meeting, had quite a different -- and I would say surprisingly positive tone to it. So yes, I think there is a chance for very quiet, very closed door meetings. I think that one of the sanctions that was imposed by the administration there is to cancel the process of regular consultations, is probably not the best thing that was done. You need to keep the dialog going. You need to talk, even if you repeat the same position time and again for several years. That's what actually happens to test ban talks in the late fifties, early sixties, and then suddenly in 1963, we had that treaty. We can repeat that experience, I guess.

MR. NEUNECK: Thank you very much for that question. We in Europe felt that it was already, by the way, two, three years ago, that it was high time for these kind of informal discussions and would the help of the German Ministry of Foreign Affairs, we created a trilateral group, which we called DCUP Commission. This group consists of 21 people from Russian, U.S. and from Germany, and the hope for us, that this group of experts -- former decision makers could make a difference here. Let me inform you that our partners, the Arms Control Association will organized an event on that -- I think in two weeks, on the 28th, in this room, where we will present some of the results. I think that was an interesting attempt to bridge the gap. And on the other side, I'm not so much optimistic actually, that these very concrete proposals will be adopted under the current circumstances, nevertheless, Track 2 -- Track 1.5 is obvious important. But again, I'm wondering, if Nikolai says, what can deployments change? Okay, fine, but this costs a lot of money. And this creates new situations of uncertainty and even in a crisis, this could be very dangerous. So I wonder, that an experienced negotiator from cold war era, is not seeing that we are on a slippery slope here, that the whole debate about future weapon systems, would be also accelerated in the west. And if you think we don't have the financial resources, I ask myself, what financial resources do the Russians have to invest in these kind of systems? So I have really some problems with that. That costs a lot of money, and if you speak about the Baltic States, if you look on a regional basis, then you will see that the Russian military has a three to 1 superiority in that region. And I mean of course, the politics -- the Baltic States are getting nervous. So they will ask for more deployment of technical nuclear weapons. In Britain, there's already debate whether they can afford to buy two more submarines or four more submarines in the future. These voices will get a lot of stuff to make their points. And the question really is, do we want it to have that kind of arms competition again here? I doubt that this is a wise situation, a

wise measure to do that. For me, as a physicist, you like to speak about the laws of physics and geography. I must confess here that I think it would be much better if we would have reasonable voices to sit together and to talk about how to stabilize Ukraine for example -- to see how to help that country. They have energy needs, and actually, Russia is playing the role as energy as a weapon. So all the supporters which existed for a future open and cooperative strategy towards Russia, are losing ground in Europe. And if that -- this continues, we will be back in at least a cold war 1.5. So I think we should not play so much with weapons and new technology developments. We should stick to the political problems which exist here. And I have the concern that President Putin has more or less lost this reasonable view -- how to stabilize countries. And this is a concern which is now also emerging in the German audience. Germans are very friendly to the Russians, for many reasons, and there's a lot of understanding here about the lessons of the past -- the problems, the frustrations. We owned Gorbachev a lot. So in principal, there is a good -- still a good voice or supportive climate here. Angela Merkel speaks Russian, Putin speaks German, but since two or three weeks, the Chancellor said, I cannot reach any longer Mr. Putin. So I think it is high time to come back. There was a proposal to form a contact group, and you know, with together with the Russians, to decide about the Ukrainian future. I think the talks in Geneva will exactly do that -- try to do that, but one day, certainly, after all these incidents, it is too short to find a long lasting program, how to solve the actual crisis. And nationalism is a concern from all states. And I think it's not correct to say the Ukrainian government is not legitimized and they are very right wing groups getting power, and on the same time, to fostering nationalists, to take over police stations and so on and so on. So I think that's actually the problem and I think that can only be solved if there's three important entities. First the United States, second, Russia and the E.U. will sit together, and I'm not sure whether

the Geneva event -- the Geneva talks will find a direct solution in the next days, but I hope of course. Otherwise, we, again, as Europeans, have another big problem here.

MR. SOKOV: Yes, I just wanted to say that I tried very purposefully to stay away from discussing the Ukrainian situation. That's a very complex situation that will take a long time to resolve. And although I very much disagree to put it mildly, with the annexation of Crimea, I do think that I don't quite agree with your attitude and your position as well, because fundamentally, the Russians do have this complaint that the right view -- of the correct view -- is the one that's coming from the west. And Moscow should be wise -- Moscow demonstrates wisdom when it agrees with the west. You actually mentioned Gorbachev incidentally, and he supported annexation of Crimea. So if you like Gorbachev, actually, that he might disagree with that wisdom as well. It is a highly complex situation. I think that the Russian behavior on Crimea was wrong, but the roots for conflict were there, and that some conflict was inevitable. It could have happened a few years ago. It could have happened a few years later. It doesn't matter. But we were actually heading for it. So let's just not be surprised.

MR. WINTERS: Steve Winters, Washington based researcher. I'd like to ask about the missile defense or missile shield. And when I've heard top Russian leaders speak on this topic, what they say is, look -- I'm not a military expert -- I'm political leader on this. I'm not -- I'm following the advice of my military and their experts. This is their analysis of what's behind the missile shield and what the ultimate purpose is. So I can't really see that they have any other choice than to follow their own experts, except maybe fire them. So the question is, who do we have, that is expert enough to actually counter the argument if there is a counter to it, of these Russian military experts? It's a military matter, it would have to be somebody in our military. I don't see any discussion going on like that. So I think to just poo-poo the missile shield and say, "Oh don't worry,

the ICBM's can still reach America" -- that's not really the issue here. The issue is, the Russian leaders don't have any choice. It's their responsibility to respond to their best experts and their military about what is perceived as a strategic threat in the next ten years, to their position.

MR. PIFER: I'm going to take one more question to give the panelist a chance to plan their wrap up comments.

MR. WALLACE: Hello, my name is Steve Wallace. I recently retired from the Pentagon. I'd like to ask you a question regarding the political aspects relating to nuclear posture and policy reviews. Every time there's been a major change in this, it's lead to some conflict and divisions within the alliance, even if the people later came to all accept it -- this change in itself is disruptive to people. And I'm wondering, do you see any problems in that regard, with regard to this global -- the global strike issue. If we blur the distinction between weapons that were considered to be for deterrent purposes by associating the same kind of delivery systems with systems that are considered war fighting capabilities, and so what are the political problems in blurring that distinction which has always been kept distinct in the past.

MR. NEUNECK: BMD -- that's a very good question, that the Russians sometimes argue that they haven't any choice. I have been invited for two conferences, and the most current European security conference which were organized in 2012 and 2013, and I think the Russians have some valid points, but they also have their scientists. Americans, as well as European scientists, make presentations on that occasion and I think roughly the result of the simulation is that if it's an interceptor, it has a burnout velocity of more than 5.5 or 5 kilometers per second, then it could reach Russian intercontinental ballistic missiles heading to the United States. So I think the Russians should be aware on the laws of physics. I'm sorry -- I'm having a lot of sympathy for the

Russian view, especially that comes to numbers, locations and I think it's quite logical that the Russians saying we wanted to have legal guarantees. And you know, the argument is that Congress and the politics cannot give these kind of legal guarantees. Unfortunately the technology itself is very limited. If you look for the configuration of the radars, they are more or less oriented towards the Middle East, and the situation improved very much because of the cancellation of Phase 4. And when I was in Moscow on the same panel as Deputy Minister Antonov, I tried to bridge the gap and saying you know, this is clear indication, whether it is technological or political, to come back to some kind of cooperation here, and the reaction of the military was very interesting. There were two generals -- high ranking generals who were standing up. And the first said -- "It's good that the Americans gave up Phase 4, and now they have to give up Phase 3, and then Phase 2, and then Phase 1". Okay? I don't commend that. Then there was another general who stood up and said, "Mr. Antonov, explain our German friend -- what is the position of the Russian Federation about ballistic missile defense." And Mr. Antonov simply said, "We communicated that to the Americans", which obviously means, there is no position on that. So I must say, after really looking into a lot of technical and scientific simulations as well, but the Russians showed us also, some of these simulations. This is for me, as a physicist, fully ideological, and the leading figures simply are using it for playing again, the old ABM -- the old STI card. And everyone who has a little bit knowledge about the technology knows that this is a big, big difference about the ambitions about STI and the realities of ballistic missile defense. And they are simply ignored by the government. They might be irrational. I'm sure Nikolai will give you an explanation for that. But this is certainly very unpleasant for the Europeans, because we, in a sense, are the diplomatic states, and NATO has to do decisions about the future of that system and I fear, and I think Mr. Putin underestimated that very much, that NATO

will show unity and they will make further decisions about expanding that kind of system.

MR. SOKOV: Well, now we shall learn that the Russians not only don't understand national security but they also don't know physics.

MR. NEUNECK: No, the government. They have very good scientists. Very good scientists.

MR. SOKOV: Yes, but they don't have access to the government.

MR. NEUNECK: All right. Maybe this is the mistake.

MR. SOKOV: Maybe. Maybe you need to appoint physicists as president and things like that. No, you actually have been to a number of meetings as well. In fact, to some meetings that were less public, I'm afraid. The discussion on the technical side was actually quite interesting. It's when the Russians showed these simulations that you refer to, in fact, the full simulation -- it was a cut down version that they presented, like that big conference in Moscow. The American response was, well, you factored in the assumptions about the specs that are inflated. We cannot do these things that you assume the interceptors can do. And the Russians said, okay, tell us the real specs. The Americans said, well, oh, it's classified. So I think that the laws of physics actually work the same way in Russia as in the United States or in Europe. So everyone knows the laws of physics. So it's more about the technology and the exact specs. So that's one problem. The second problem is -- it's not about the current plans. Let's be frank. If I were to understand the Russian current position correctly, they can not only accept the current plans, in fact, judging kind of from more confidential conversations, they can accept the limits to missile defense that are roughly double what we currently plan, but they want these limits. So it's like a matter of principal, so what was have is not technology and not the laws of physics. It's domestic politics on both sides. In this city you cannot discuss limits. That's it. It's not about technology and

physics. On the Russian side, well, that theoretical threat from missile defense might actually take like ten years to emerge, maybe longer, but they refer to talk, like in ways that the threat is immediate. Absolutely, you got political domestic politics on both sides, and that's a big challenge.

MR. PIFER: Dennis, final word.

MR. GORMLEY: I'll try to address the question of the posture review and in the context of conventional Prompt Global Strike. I think, frankly, the 2010 posture review, it seemed to me, was talking not about conventional Prompt Global Strike, but about the, across the board improvements that have been made in precision strike systems. And certainly this message resonated in certain circles in Russia, because when you talk to them behind the scenes, they are frankly less concerned about conventional Prompt Global Strike and more concerned about this array of different precision strike capabilities that can be brought to bear. So I think that's an important thing to keep in mind. The prospect for conventional Prompt Global Strike is, again, as I mentioned before, turning into something quite different, with a different characteristic associated with it, not withstanding its expense problems, is something too, to worry about.

And last, on the issue of what the Russians really, or how they deal with the issue of current missile defense interceptors, it just strikes me -- it's patently clear, what they're concerned about is there's no damned ABM treaty to provide a set of constraints for the future. And that's what they worry about. A future administration that, you know, goes full speed ahead.

MR. PIFER: Things get changed, yes. Okay, good. Well, I think this panel did what we'd hoped it would do, was to discuss both political and technical challenges that are hindering nuclear reductions. I try to be an optimist. I still think that

there is a future for arms control, but I think what we've heard today is that there are some issues that have to be overcome, if we want to get back on that track to further reducing the nuclear danger. But please join me in thanking the panel for the discussion.

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Expires: November 30, 2016