

091812 BRITISH AMERICAN SECURITY INFORMATION COUNCIL, NATIONAL DEFENSE INDUSTRIAL ASSOCIATION, AIR FORCE ASSOCIATION AND RESERVE OFFICERS ASSOCIATION CAPITOL HILL BREAKFAST FORUM ON THE NUCLEAR POSTURE REVIEW WITH CHRISTOPHER FORD, DIRECTOR, CENTER FOR TECHNOLOGY AND GLOBAL SECURITY, HUDSON INSTITUTE; JANNE NOLAN, SENIOR FELLOW, ASSOCIATION FOR DIPLOMATIC STUDIES; AND PAUL INGRAM, EXECUTIVE DIRECTOR AT BASIC (For additional information on NDIA/AFA/ROA seminars contact Peter Huessy at phuessy@afa.org).

[This is a rush, unofficial transcript provided by National Security Reports.]

MR. PETER HUESSY: I want to thank you all for being here this morning. My name is Peter Huessy. And on behalf of the Air Force Association, the National Defense Industrial Association and the Reserve Officers Association of America, I'm glad to have sponsored this event with our friends from the British American Security Information Council (BASIC), and to welcome our two wonderful guests, Janne Nolan and Chris Ford, who will be discussing the U.S. and its allied nuclear posture.

As many of you know, on the 13th of September, we had a conference over at the Reserve Officers Association of America on the nuclear triad. The transcripts are completed and we're just doing a little revising and extending our remarks. And they will be posted on both the ROA and AFA web site. And the YouTube videos will also be divided by each of the 13 speakers will be up on YouTube. And since they're less than two hours each, they will be in there forever, supposedly. And you are welcome to access them. And we are working on putting a report together on the conference that is both an edited version of the remarks as well as a summary. And we'll make that available as well.

Jim Miller has had to postpone his speech on the 21st of September, but Tom Schreiber of the National Institute for Public Policy, has been authorized by the Department of Defense to talk about their new report on long-range prompt conventional strike. And I'm trying to fit Tom into that slot on the 21st, on Friday, and I will let you know. We've also been asked by the British embassy to do a breakfast on the history of the strategic British nuclear deterrent, which we're in the process of working on. And the Jewish Policy Center is publishing a piece of mine on the American strategic nuclear policy, which will be coming out in the next week or so.

Before I turn the podium over to my friend Paul Ingram from BASIC, I wanted to draw your attention to a report that just came out from Henry Sokolski's Proliferation Center. And It's extraordinary document of what he calls the misuse and use of intelligence data on proliferation. And I thought there were three things that came out of it.

One was a September 1996 report by the Congressional Reference Service that says that since the 1980s China has agreed to provide nuclear technology to Iran. And there is concern about Iran's nuclear collaboration, in turn, with Pakistan, which has long been a recipient of Chinese assistance as well. The report goes on to say that U.S. and European intelligence, and this is now 1996, has found that since 1988 Iranian nuclear engineers from Iran's Nuclear Research Center at Isfahan, had been trained in China; that a secret Iranian-Chinese nuclear cooperation agreement dates from 1985; and that China

transferred designs and technology for active construction and other projects at Isfahan during that same period.

The third thing that I thought was interesting is the CIA's Nonproliferation Center issued a report in July 1997, and this is what it said. "China, in the last half of the 1990s, was the single most important supplier of equipment and technology for weapons of mass destruction worldwide." And again, the reason I mention these is they're all from 1996 and 1997.

They precede 9/11. They precede Afghanistan and Iraq. They precede the Bush administration. And I think it tells you the extent to which what Ahmad Massoud, the head of the Northern Alliance before his death two days before 9/11, said, was a "poisonous coalition that we're facing of the Pakistanis, the Iranians and the Chinese all working together on nuclear technology," I think – my point is it gives me pause, certainly, to believe that subsequent U.S. reductions in its strategic nuclear weapons stockpile will, in a blinding moment of insight, cause the Iranians or the Chinese or the Pakistanis to believe that their nuclear cooperation is excessive and that their nuclear stockpiles should be reduced or, in the case of Iran, never secured.

So with those opening comments, I want to thank again BASIC for putting this on, and my friends Janne Nolan and Chris Ford for coming here to talk to us about this really very, very important issue. Would you all now welcome Paul Ingram from BASIC?

(Applause).

MR. PAUL INGRAM: Well I want to in turn thank Peter for his huge assistance in helping to put this together, the Air Force Association and his colleague Sarah Piggott. BASIC would also like to thank the Prospect Hill Foundation for their generous funding of this program.

Now, we have two speakers today. Their goal is not to lecture you at great lengths and for you to then interrogate them on their theses. Their role is to kick-off a conversation.

And this conversation is not to have a big debate at which they tear each other's hair out, but rather to bring people together who may have a different perspective to look at these issues from different parts of the spectrum; but actually, to see if there are ways in which we can also find common ground to escape the usual practice in this town of sitting very comfortably in our silos and lobbing missiles at each other, even if they be verbal missiles; but rather to find areas of common agreement, to interrogate some of the assumptions that we may all share; and also to question even those areas of common agreement.

I'm going to introduce first Janne Nolan. Dr. Janne Nolan is a member of the international affairs faculty at George Washington University and a Senior Fellow at the Association for Diplomatic Studies. Janne served as a technology, trade and arms control specialist in the Department of State, a senior representative to the Senate Armed Services Committee, and as a defense adviser to several presidential campaigns and transition teams. She also served as an appointed member of the White House Presidential Advisory Board on U.S. Arms and Technology Policy, as the chair of the National

Defense Panel, the State Department's Accountability Review Board, the Gates Panel to Assess the Ballistic Missile Threat to the U.S. and the Secretary of Defense's Policy Board.

One of the things I particularly admire about her is that she's also the author of many books, something that I've never really managed to do, including "Guardians of the Arsenal: The Politics of Nuclear Strategy," and "An Elusive Consensus: Nuclear Weapons and American Security After the Cold War." Janne.

MS. JANNE NOLAN: Thank you very much for that kind introduction, and thank you to Peter for this event, and thanks to all of you for coming out at this ungodly hour to speak about nuclear posture reviews. I thought that it would be useful, not knowing exactly who was going to be in this audience, to get some common ground about what a nuclear posture review is and why it draws so much attention. And I actually would like to start by asking the question to the audience, what is a nuclear posture review? What brings you here to discuss this? I'm going to call on one of you.
Yes?

MR. DAVID LEE (ph): David Lee. Numbers, platforms, strategic, who's going to have those? Who's going to be counting numbers? Who's going to be counting the counters? Things of that nature.

MS. NOLAN: Thank you. Anyone else? Go ahead, Tom.

MR. TOM GRAHAM: I agree with all that, but also the intent on how they might be used.

MS. NOLAN: Thank you. So I think this goes to the root of the historic division in the debates about the utility and role of nuclear weapons in American strategy. We have a split, a formal split, and a functioning split between declaratory policy, what we talk about, and operational policy, what we actually do or would do particularly in a crisis – the plans that go into thinking about the use of nuclear weapons in the event of crisis and the failure of deterrence. This goes back to the 1960s and even earlier, that we've had this formal separation between these spheres.

And the Nuclear Posture Review, certainly in the 21st century, falls squarely in the camp of declaratory policy. And I think that most of our discourse here in Washington tends to fall squarely in the camp of declaratory policy, with important exceptions. And I hasten to say I too work very hard to try to build non-partisan consensus on these issues. I work closely with Frank Miller and others who know these details very, very well. But we are frustrated often by the extremes to which people often go to project their own perceptions onto a set of principles or guidelines that really are not the core of nuclear doctrine.

The president set the policy. That's what the Nuclear Posture Review is supposed to do. And yet, I think most people in this room know that the Nuclear Posture Review, the actual document, is the product of intense bureaucratic infighting, rival interests, the collision of different perceptions, the effort wrestled out to deliver some kind of consensus that is eventually then brought into the president for his signature. But we're talking still about the kind of broad guidelines that the president sets, that then trickle down into a much more complex set of bureaucratic actors and planners and experts and people who do the actual putting of weapons to targets that make up the end of the spear, the actual guts of nuclear deterrence.

So the posture review itself is interesting, but it's also very important to remember that it's a pretty triangulated document by definition, that its purpose is to try to move the consensus forward slightly,

that there are competing interests represented. You know, most people don't want to think about nuclear strategy being based on such mundane democratic processes, but they are, even though it's not that many people who are involved. They have real serious food fights over what gets put into that policy. And what comes out as a supposedly formal review is pretty interesting sometimes.

I think we also have to realize that whatever innovation everyone is maybe looking for in this new review, we have standard dilemmas that have endured since the beginning of the nuclear age: what to target, for what reason, at what level, how to harmonize the political and military objectives that derive from the nuclear deterrent? We talk about targeting what the adversary values most, what are the judgments, what are the basis, the criteria, that go into those judgments, the degree to which forces continue to need to be based on postures of prompt response, which were based on premises of the threat of an overwhelming strategic attack from the Soviet Union, but which we still require in our forces as a hedge against global threats?

It worries me a lot that we don't have a fundamental agreement among Americans about the core utility of nuclear weapons. And by this I mean, if you haven't noticed, there is such a division in this town and elsewhere about basic questions about whether nuclear weapons keep the peace, deter other kinds of wars, project American power in an effective way; or if in fact they're the source of discord and the greater proliferation of global threats. It's here that you find the dilemma of the so-called Global Zero movement on the one hand and the great disputes about the desirability, let alone the feasibility, of such a goal.

We have new 21st century issues that have come up, like how to communicate deterrence in a multi-polar world. This is not the U.S.-Soviet exchanges that we had over decades. The anatomy of deterrence has rested on a very elaborate set of articulated principles, including military-to-military contact and constant communication and whole patchworks of agreements to avoid accidental escalation. We don't have that architecture for the rest of the world.

And an issue that was raised as far back as when Secretary Aspen was appointed Secretary of Defense in the Clinton administration, how do you deter the undeterrable? It's not a new issue, but we have struggled with this issue and it has shifted the ground out from under the discussion about – certainly about numbers. We want to have at least parity with Russia and other enemies, but we worry about a single or couple of nuclear weapons in the hands of outlier states. How did that shift in the way that we perceive deterrence, and how do we reconcile these difficult questions?

So, what is the current posture statement going to say? I think everyone, most people in this room, have probably already thought about this. And the one thing I can say with great confidence is that it isn't going to be Prague agenda.

Ever since 2009 when President Obama gave that speech, there's been great concern on both the right and the on the (policy ?) that either would be implemented or would not be implemented. And I think we have not had as much dis-census in the nuclear debate, at least in my lifetime, over this basic issue. But there's nothing in the operational plans or in the guidance to suggest that a zero agenda has operational significance for now. It resides in the world of aspirations and declaratory policy. President Obama set out an agenda for forging a set of steps based on partnerships with allies and friends that called for the ending of the production of fissile material, for ratifying treaties, etcetera, but with the caveat that we would engage in modernization. And as you all know, the START Treaty ratification process was an extremely contentious discussion that ultimately was resolved in favor of ratification with the pledge to commit to a serious program of modernization. I was just talking to Peter about what modernization means. Even the Dana Priest articles, I think, distilled a huge amount of information into a rather articulate but certainly readable prose. For whatever limitations you experts may have found in it, I think she did a public service in discussing these issues. The concept of modernization is completely mixed up between urgent safety measures that are needed and a highly neglected nuclear infrastructure and the notion that some people put forward about modernizing actual weapons. And I think there's a lot of confusion about that which we can come back to. I think I just ran out of time. Is that about right?

I'll say one more thing. Is there a future consensus? Let's come back to this. There was a kind of consensus around the time of the START Treaty that was ratified in the lame-duck session in December of 2010. Since then, at least I have seen, an unraveling of what consensus there was. And I think a lot of it, I hope a lot of it, stems from some basic misunderstandings about the definitions of what really is going on here.

So I hope we can discuss, actually, where we can, in fact, find common ground. And I very much welcome Paul's reference to that. Thank you.

(Applause).

MR. INGRAM: Thank you, Janne, very much, and the spirit. I wanted next to introduce Dr. Christopher Ford. He is the Director of the Hudson Institute's Center for Technology and Global Security. He's become very much focused on China, and has served in the Bush administration as special representative for Nuclear NonProliferation as principal deputy assistant secretary of State responsible for arms control, nonproliferation and disarmament verification and compliance policy. Earlier in his career he was general counsel to the U.S. Senate Select Committee on Intelligence in the wake of the 9/11 attacks.

Chris is the author of “The Mind of Empire: China’s History and Modern Foreign Relations,” and “The Admiral’s Advantage: U.S. Navy Operational Intelligence in World War II and the Cold War,” and numerous articles on nuclear nonproliferation and arms control in prestigious journals. He also runs the new paradigms forum blog where he and his guest bloggers expound on nuclear proliferation and other strategic matters of the day. Chris is also just finishing a book for the Department of Defense on China. Chris.

(Applause).

MR. CHRISTOPHER FORD: Thank you very much. Thanks for the kind introduction. Thank you, everyone, for coming. Thanks to BASIC and the Reserve Officers Association and the Air Force Association for putting this on and giving us a chance to talk today.

The U.S. nuclear posture -- I thought it would be useful just to very quickly recap some of the reasons why I think it is that we got to where we are in the first place, in terms of our nuclear posture, because I think understanding some of those missions and purposes would probably be helpful as we evaluate to what extent they still have validity today. As you all will not be surprised to have me repeat to you, we acquired our nuclear forces in the first place not to oppose other nuclear forces, but in fact to conclude a great power conventional war. We kept them after the war in order to prevent another such war. We have found them over the years to be very powerful stabilizers and inhibitors of conflict between the principal players in the international system. As the Soviets built up their arsenal, we discovered another purpose for nuclear weapons, and that is the deterring of others’ use of such tools against us, on the one hand. And on the second hand, providing the president with a range of increasingly flexible options with regard both to warfighting itself and to intra-war bargaining -- war termination -- in the event that deterrence of this second sort, should fail.

In time, we came to understand that there is also utility in nuclear weapons in deterring the use of other forms of WMD against us. And I refer you, for example, to the Nixon administration’s decision that we no longer needed biological weapons, in part because our nuclear weapons force could essentially deter any other state from using such biological tools against us. And finally, we found over the years that the possession of nuclear weapons played an important role in reinforcing alliance relationships with countries that felt threatened by powerful conventional or nuclear potential adversaries, thus extending all of the above dynamics into the sort of third-party benefit category.

And this is useful, of course, first of all, because it simply provided security to our friends, but secondly because it helped us help persuade them out of any temptations that they may have felt to try to develop nuclear tools for themselves, thereby serving also the interest of nonproliferation. The relative importance of each of these missions has varied, of course, over time. But all of them, I think, remain to one degree or another very important and valid considerations, and are, in fact, reflected in current U.S. nuclear posture, and indeed in the most recent U.S. nuclear posture review, among many others.

Paul asked me to say a word about what I would do if I could adjust our nuclear posture. And my response is I think in its basic form, that is a triad of forces that combine different aspects of flexibility, redundancy and survivability, is probably one that – well it certainly is one that has served us pretty well. And I think it still meets our needs and is quite sound. I might adjust its components to some degree, but I am less interested in adjusting its structure or even its size. I'm not that interested in ever lower numbers because I don't see anything being broken enough on the grand strategic stage, if you will, to require that kind of reductive surgery with the potential risks that such deep cuts might entail. Nor do I support abandoning the triad, if we can possibly avoid it, for it provides, I think, a mix of partially overlapping and complementary capabilities that works pretty well as a kind of strategic hedge against technological surprise and adversary activity. Smaller is nice, but I like stable postures more than I like smaller ones. And those forces do not always work in the same direction at the same time. What I would do, as a highest priority, and we've had some references to it so far, is modernization. And I'll grant that there's a lot of fuzz in what precisely that means, but I think that's very important. And it's a road down which we are only now just beginning to travel, after what I think are some unconscionable delays.

For so long as we retain any nuclear weapons, I think it's vital, and both deterrence and stability essentially require, that those tools be as safe, secure, reliable, credible, survivable and well-tailored to their potential missions as we can possibly make them. We'll also need to ensure that our weapons infrastructure is capable of being genuinely responsive to future threats. That's a (requirement ?) for many years, but it's a lot harder to do than to say. And this is important, not least, because keeping a state of the art weapon design capability and a robust production capability is a critical hedge against future uncertainty, in the absence of which I think we would probably need a larger arsenal. These requirements are certainly not cheap. We've seen some of that in the papers in the past couple of days. And they don't lessen with reductions, they may actually increase. The fewer weapons and delivery systems that we have, the more important it is that those we keep are optimized for modern needs in all of these respects, and the more important it is that we maintain the ability to reverse course in terms of numbers should we decide that we need to in the future. Underinvestment in this kind of modernization has left us with an arsenal that was built around systems developed and optimized for Cold War needs and a competition that ended decades ago, now. Today we possess a collection of forces that are essentially optimized for that conflict, but haven't been changed in any significant respect except to be shrunk in terms of their numbers. And we've left ourselves with an infrastructure today that is all but incapable of generating new work in the field, or indeed of any meaningful production volumes either now or in some future contingency.

So I think if we're serious about maintaining deterrence and meeting our security needs as the 21st century progresses, and especially – and this is a point of emphasis – if we want to be able to do that while having fewer nuclear weapons around, we still have a lot of work to do. I'm not the biggest fan of the 2010 Nuclear Posture Review, and to some extent I think it sort of represents kind of a master

class in equivocation. On the other hand, as I've said repeatedly since it came out in 2010, my strongest reaction to it was really that it wasn't worse.

For a president who spent so much effort and so early on disarmament-friendly posturing, the NPR is an almost shockingly moderate and sensible document in that context. There's a lot of hat tipping to the disarmament true believers. But, such bows must often come in areas that are essentially rhetorical and atmospheric, or perhaps in areas like declaratory policy which frankly, I think, few strategic planners take all that seriously in the first place.

I'm pleased it wasn't worse. And I'm glad that there is as much said in a document about modernization as there was. Although it's disappointing to see that the promises that were made – that there's been sort of a conspiracy between the White House and the Congress to betray the promises that were made in connection with New START ratification.

Nonproliferation, let me say something quickly on that. I don't think that the success or failure of nonproliferation policy depends much, or really at all, upon U.S. disarmament policy. We have certainly gotten precious little so far, from a nonproliferation perspective, out of all of our pro-disarmament posturing the last four years. Iran and North Korea, of course, do face tougher sanctions than they did before, but those pressures aren't showing any likelihood of getting them to change course in that respect. And in any event, we owe what sanctions there are not to our disarmament friendly posturing, but to those regimes obvious and ongoing very serious provocations.

Our disarmament friendly posturing is something about which they care not at all, and neither do the perennial foot-draggers of Moscow and Beijing and the Security Council. Our current disarmament friendly posturing is not, also, succeeding in keeping more and more countries from developing the capabilities that they need in order to give them a weapons option in the future. The world's proliferation dynamics do continue apace, essentially unaffected by our positioning. We were told for years that everything in the nonproliferation world would get better, in effect, if we (would ?) to show our seriousness about disarmament, and the White House bit several years ago.

But the real point, I think, was pretty clear early on, if anyone had been listening. When I was U.S. special representative for nuclear nonproliferation, disarmament diplomacy gurus like Sergio Duarte and Abdul Minty quite openly explained to me the disarmament community would never give the Americans credit for getting rid of nuclear weapons the Americans didn't actually need. It wasn't considered disarmament, apparently, to reduce the role that nuclear weapons play in our strategy or to resolve the worst of our strategic problems with the potential – with our major nuclear adversary – and then to cut our nuclear arsenal accordingly.

As both of these esteemed gentlemen told me, one at the Onaci (ph) conference in 2007 over a very nice dinner in Pretoria, cuts only count as disarmament if you still need the weapons that you eliminate. We only get credit for disarming, in other words, if we thereby imperil our security. I'm really not making this up.

This is why the disarmament community, of course, hasn't batted an eyelash -- or at least major portions of it -- hasn't batted an eyelash that we have cut our arsenal 80 percent since the end of the Cold War. Indeed, those 80 percent cuts coincided with the growth of the Iranian and North Korean nuclear programs, as well as the ratcheting up, rather than down, of the modern disarmament mantra that we are the problem, not the proliferators, and that nonproliferation difficulties would ease if only we did more on disarming. I mean, if only a little bit of that mantra were true the post-Cold War U.S. and Russia cuts would have essentially solved the world's nonproliferation problem years ago. But, of course, it didn't.

Historians will remember the Cold War as a period in which the superpower arsenals skyrocketed, while proliferation itself remained surprisingly limited. And they will remember the post-Cold War era as a time in which the nonproliferation consensus all but collapsed after the superpowers had slashed their arsenal to the smallest levels in more than half a century. The nonproliferation for disarmament mantra was thus hooey, I think, all along, a bait-and-switch game. Shame on the Obama administration for biting.

For my part, however, having put the partisan rhetoric aside, I think it is possible to come to some kind of an agreement between hawks and doves on U.S. nuclear policy, at least with respect to short-term policies. The longer term is much more challenging. Not least among these areas of potential agreement, the imperative of modernizing the U.S. nuclear forces and infrastructure so that whatever forces we retain are indeed safe, survivable, flexible and effective, and as much so as we know how to make them.

You see elements of this potential consensus in the Strategic Posture Review Commission's report in 2009. You see elements in the 2010 NPR itself. You see elements in the New START verification debate. I think the core of the case really is there. And although there may be some unraveling recently, I think that there is enough for us still to work with. And it's important to remember that the case for reductions gets harder to the extent that reflexive objections continue to preclude or impede modernization. The less well-tailored our systems are to our needs, or the less confident that we are in their long-term reliability, the more of them we're likely to feel that we need to keep around in order to make sure they are still as capable of doing their job.

So whether the ultimate destination is imagined as a long-term stable deterrent posture on the one hand, or global zero, I think that there may still be a core of principles and ideas that we can work with in this town to move forward together, at least on short-term objectives. There is a lot of theology in the disarmament debate, but I hope there's not so much that we can't at least do something sensible like that, at least for now. Anyway, I look forward to talking with all of you in the discussion that will follow. Thanks.

(Applause).

MR. INGRAM: Thank you, Chris. I will kick off with a couple of questions myself, so that will give you a chance to think of your own. And then I want to hand the floor over.

But I wonder if I could turn first to Janne and whether you would care to respond to Chris' challenge, I guess, about whether there is an imperative for the U.S. to provide some sort of leadership on the international scene to promote nuclear disarmament; and whether there is some link between disarmament and nonproliferation, or whether, as Chris says, there is no link?

MS. NOLAN: As Chris says, it's hoey.
(Laughter).

MR. FORD: It makes for good copy.

MS. NOLAN: I think there's a lot of hoey in this debate because I think that often, and not in this case, the strawman is that if the United States takes steps to reduce its nuclear arsenal there will be a causality that results for other states to take steps to engage in various forms of disarmament, specifically nuclear, and that's just hoey. I agree, actually. There is very careful analysis of what has gone into decisions by states to eliminate their nuclear programs. And there is a sizeable number now – which I forget, it's like six – of countries that have gone down the nuclear road. It's probably more like eight because we have countries, at least for now: Taiwan, South Korea, that were induced by American defense umbrellas, but others, Argentina, Brazil, that have given up their nuclear weapons. It's a very complex set of reasons in each case, but very interesting to understand.

So there is no causality here. It's, I think, important and I think that Paul would have much more interesting things to say about this. It is very difficult to manage -- and Tom Graham and others here -- to manage the politics of nuclear alliances and friendships without a commitment to some kind of long-term goal of reducing reliance on nuclear weapons when you are pressing the nonproliferation agenda. It just is difficult to manage the perceived contradiction between those two goals. A lot of people have talked about this in a way that any kind of lobbying campaign, if you will, is very difficult when there is not consistency in the actors. But the causality stuff, I completely agree.

MR. INGRAM: Okay, thank you. One of the things I was excited about Chris and why he's sitting here is that he not only had that belief but he actually went out and actually had to face people in other countries to put it across.

MR. FORD: That's why I have the jacket, to hide the scars and disfigurement.

MR. INGRAM: But I wanted to also highlight another issue, Chris, and my question to you is that what I like to think of as the United States' closest ally, Britain, also has nuclear weapons, but a very different posture, which we call minimum deterrence, and a targeting which is about countervalue rather than counterforce. Do you see any possible future where the U.S. may reduce or change its counterforce strategy, or is that a red rag to a bull? Because if it doesn't change that strategy, if it

doesn't move towards another strategy, then it will be sitting there with literally thousands of warheads rather than hundreds from here to time eternity.

MR. FORD: That's a very good question. I think the British and the French, for example, in a sense never moved out of it and so it's a little bit different from their perspective. I think people in Washington here oftentimes tend to be very uncomfortable with the idea of moving back into countervalue.

And I'll be the first to admit that in terms of a counterforce strategy versus a countervalue strategy from the perspective of the target is a not always a very useful distinction, right? If you've got military targets in and around urban areas, does it really matter to you that they're being vaporized because they mean to hit the military targets or because they're simply trying to massacre as many civilians as possible?

Maybe it doesn't matter.

But from the point of view of the launcher of such attacks, I still feel that it does matter. And I think a lot of folks in Washington do as well. And there are interesting legal questions here as well. To the extent that one worries about that in the middle of World War III is maybe a point worth debating.

But if you do, I think (principles ?) about distinction are not completely irrelevant. And I think it does matter whether one intends to strike at military targets and regrettably and sorrowfully happens to kill civilians in the process; or whether one is actually intending to massacre as many innocents as you possibly can, even in the good cause of preventing war from happening in the first place. It's a very tough sort of moral question.

As operational question I think you're quite right. Without some kind of a shift out of counterforce we would find it, and will find it, very, very difficult to get numbers very low. Perhaps they can come lower. Indeed, there are lots of interesting questions about how to do the numbers, how many targets you feel you need to hold at risk from a counterforce perspective, how much redundancy do you have to have in the number of weapons you can throw at any particular target with various types of attrition and failure purposes, what kind of survivability numbers get put into this, what is your range? You can run the number calculations on a counterforce basis and perhaps come up lower than we have now. That's a debate worth having, although it's probably one we can't have in the open.

But as far as lower number are concerned, I think you're quite right. I think there's a fundamental choice that would have to be made if that were the agenda. My instinct runs counterforce, but I think you're quite right to identify that that is a massive conceptual watershed that we have not yet struggled with.

MR. INGRAM: Can I open the floor up? And these don't have to be questions, they can be statements as well.

MR. DAVID ISENBERG: David Isenberg. Chris, you mentioned in the course of your remarks, you alluded to China and Iran. My question is, to what extent if any do policy makers in government ever consider the possibility that perhaps those countries have their own – important to

them – and perhaps even legitimate security considerations when it comes to their own nuclear programs?

I mean, Iran did fight a war with Iraq in the 1980s and suffered substantial casualties because of WMD, chemical weapons, used against them. You mentioned that one of our rationales for our nuclear program during the Cold War was using nuclear weapons as a deterrent to WMD, giving up the biological weapons program under Nixon. So does anybody in government ever consider those security positions and say okay, we don't want them to have nuclear weapons, but they do have their own legitimate security situations, maybe that's a point to start with in terms of dealing with them and doing negotiations? Or, do they just say it's an implacably hostile regime and we can't countenance anything?

MR. FORD: Well, I think clearly every government has at some level legitimate security considerations. I don't think you would find anybody in the U.S. government who would be willing to argue that Iran's legitimate security needs include acquiring the tools with which it appears very likely – and appears to wish – to intimidate and overawe its neighbors in a kind of neo-Persian, Shi'ite regional hegemony. The key is what one figures they would do with such things, and the details matter. One country is not the next country is not the following country. And I think assessments of the costs and dangers and risks of such things are reasonably and sensibly done on a country-by-country basis. Iran has legitimate security concerns that I am not aware they cannot meet by means other than developing nuclear weapons and without the attendant costs and risks to their neighbors and to us and frankly to themselves as a result of that. So to some extent, yes, that's telling them how to do their security, but everyone has opinions on what the right answer is in international security affairs around the world. Lots of countries have lots of opinions on how the United States should do its security. I think our arguments are sounder and I think that the decisions that are made on that basis are ones that are better and more in the interest of international peace and security than simply saying that gosh everyone has their own perspective, they should be able to build whatever they want.

MR. LINTON BROOKS: Chris and Janne, both of you said modernization is important. Both of you said that modernization means different things to different people. And both of you very carefully dodged saying what it means to you.

(Laughter).

Let me ask, when you say modernization, can you say a little bit more in as specific terms as possible as to what you mean? Because you both asserted there could be consensus around modernization. And I can think of some kinds of modernization in which that's almost certainly true, and some in which it's going to be more challenging.

MS. NOLAN: When I have questions like that I refer them to my good colleague and expert on these things, Linton Brooks.

(Laughter).

I'm sorry he couldn't be here today. I have some optimism that there is grounds for common interest in investments in the safety aspects of modernization, that there is very little to say in disagreement that as long as we have nuclear weapons they should be kept in facilities that are impregnable, that are not invaded by nuns –

MR. FORD: Eighty-two year old nuns.

MS. NOLAN: Yeah, or younger ones. The nun threat.

MR. FORD: Nunn-Lugar
(Laughter).

MS. NOLAN: I'm begging the question deliberately of beyond the aging facilities, the kinds of investments in refurbishment of actual systems that one thinks must be done in order to preserve, again, security and safety. Clearly, that remains the most important issue, given the fact that not only is there I think a fundamental disconnect in the way people use the word modernization, but we're up against the imperative of enormous budgets at a time when the entire defense establishment is competing, scrambling, for resources. And strategy is increasingly focused on different kinds of operations: special operations, etcetera, etcetera, that really are going to compete with the much delayed need for investment in this infrastructure.

MR. INGRAM: Before I let you off, Janne, I wonder if you could also give a hint as to which aspects of modernization you might find more challenging, and particularly those near the margins?

MS. NOLAN: No.

MR. INGRAM: No? Fine.
(Laughter).

MS. NOLAN: I'll leave that to Chris.

MR. FORD: Well in a sense my answer on modernization is maybe harder to describe but easier to (take ?) because my answer is essentially yes and more of it, in the sense that there are a number of different things that you could describe under the basic rubric of modernization, essentially all of which I would support doing. But I recognize that as you sort of get through the list it becomes harder and harder to A) pay for, and B) get support for them. I mean clearly, starting at sort of the easy end of the spectrum, there are issues of safety and security of the facilities and of the materials and that kind of thing; safety and security of the weapons designs themselves.

You know, no weapon that we presently have – and correct me if I'm wrong – was designed certainly not in the post-9/11 era under conditions of modern technological knowledge. They have, as I understand it, from what I use to be told years ago, pretty darn good safety and security features in them already, but not the best that we know how to do, not the best that they could include, for example. So safety and security of the weapons themselves, incorporating neat little technical tricks

and things that would make it not just more unlikely that they would ever go off or be troublesome in a way sort of on their own if dropped, lost or whatever else, but that people could not deliberately use them or manipulate them or steal material or components from them in some fashion. So those are fairly easy to get consensus on.

On some other issues I think there is at least a degree of consensus on -- and actually you can see the phrasing in the 2010 NPR that is pretty permissive on issues of reliability. Indeed, I was joking up here earlier, as I've said many times publicly, ironically after all the kerfuffle over the Reliable Replacement Warhead a number of years ago, the phrasing that the Obama administration adapted in the Nuclear Posture Review to describe what wasn't a new nuclear weapon, in fact could encompass RRW. A little bit on the contentiousness scale, I think the production capabilities and the responsive infrastructure aspects that I sort of alluded to in my remarks are also quite important. One of the purposes of maintaining our infrastructure is as a productive hedge against future uncertainty. At the moment, I think if we absolutely top the thing out in ways that you sort of make the scientists at Los Alamos sort of whimper about, we can probably get to something like 80 pits a year, maximum, and 50 is probably more feasible.

You know, that's nice for keeping an arsenal alive, it is not anywhere near useful enough for building an arsenal back up should the world go south in some kind of a horrific fashion. So we are not anywhere near, and don't even really have plans for, the kind of productive capability that would allow a true change, a significant change of course in anything like a quick period of time. More contentious still, I think it's very important to keep the ability to do first-class design and theoretical work alive at the labs, to keep the human capital that are involved in making sure that our people are at the forefront of nuclear weapons knowledge. This is the kind of knowledge and skills and practice -- because it's not just book learning, it's an apprenticeship program to some extent -- that is necessary for fixing problems, for refurbishing weapons if there happen to be issues or concerns, and indeed for analyzing foreign threats. We will understand the nuclear world around us much less well if we lose the human capital capable of doing really first-class state-of-the-art design and theoretical work, and be much more subject to surprise.

Shifting outside nuclear weapons themselves, I think command and control modernization, also mentioned in the 2010 NPR, is very important, which is also a sort of round-about way of answering concerns about de-alerting. To my book, de-alerting has all kinds of problems associated with it in terms of crisis stability. But you can get some of the same bang for the buck, or rather non-bang for the buck, through making sure that our command and control architectures are survivable and redundant in ways that we hoped that they would be during the Cold War -- had trouble doing even then -- but certainly have left flag in the years since then, which reduces launch on warning pressures and serves some of the same purposes that de-alerting is supposed to serve. So that package altogether is a very expensive package and one that is probably difficult to get agreement on all the components of, but my answer if I had my way would be absolutely all of the above.

MR. INGRAM: But what you didn't mention, Chris, was increasing capability to target more accurately, to reduce yields, that sort of thing.

MR. FORD: Okay, that's a fair point. If I really had a magic wand in the policy community, I would get through our taboo and stigma about so-called new designs. I think if we really want to have a force that we can – if we want a minimalist force, if we wanted to have the smallest and best, most elegantly tailored to modern missions force that we possibly can, it's probably worth considering what weapons we would build from scratch if we could.

And they probably don't coincide with our current designs. And frankly, if we wanted to have a weapons posture for the mid-21st century that really was adapted to our modern missions and enable us to get away with an extremely small, minimalist arsenal – whatever that would mean in the context of the times – we probably would have to have new designs to some degree. I don't know what that would entail, but again, a big political and budgetary hurdle.

MR. INGRAM: Thank you.
Yes, in the back.

MR. CARL LUNDGREN: Yes, Carl Lundgren, with Jonah Speaks. I heard Chris mention that he prefers stable numbers of more or less where we are now to reductions, and certainly not global zero, is what I heard from him. I'm not sure I heard from Janne what she felt on this issues.

And I want to raise a point that you can talk about nuclear weapons deterring conventional wars and even nuclear wars, but ultimately if you put your faith in nuclear weapons what could happen is deterrence fails at some point and there is a nuclear war, whether it comes about by accident or deliberate acts or just escalation from a conventional war. Eventually deterrence could fail and presumably will fail, eventually. And so, I guess, how do you feel about the stability of deterrence with nuclear weapons versus other issues? And I guess with Janne first, if she cares to address that?

MS. NOLAN: I'm not sure exactly what you mean by other issues. But I see we've made tremendous progress in the integration of conventional forces into operational plans. And there is now so much overlap in global strike – not prompt global strike – that we have made really quite dramatically, I would argue, to a kind of deterrent that has many components to it. And with StratCom taking on other missions, including cyberspace, this matters.

I don't like the numbers debate, to get to your immediate question. I don't like it because – I'll tell you my number and then you tell me your number and then I'll know all about you. And it is not up to me at all, and what are we talking about exactly, 1,100 zeppelins?

What are we talking about here? Everyone is going to look at the new posture review and flip to the page that has the number on it. And I find that intensely bogus and misleading about the true intent of creating a stable posture that is responsive to current defense requirements.

I really think, just finally, that the problem for everything that we're talking about here is so dwarfed by the budgetary considerations that at a time when we're talking about needing more Marines to protect our embassies around the world, and particularly in North Africa and the Middle East, that when you start to get down to the discussion about how we're going to shift our nuclear strategy and sustain the deterrent and modernize, there's going to be some pretty nasty food fights that are not going to be based, necessarily, on strategic imperatives. And that worries me a lot.

That doesn't answer your question. I can tell by your face.

MR. INGRAM: Yes, down here.

MR. GRAHAM: Both Chris, and I think to some extent Janne, have talked about modern missions for nuclear weapons, presumably opposed to the missions they had during the Cold War. I wonder if each of you would describe your concept of what are new modern missions for nuclear weapons?

MR. FORD: Well, it's the first question in that respect, which I refused to answer before, is countervalue versus counterforce. If you decide that what you need is a countervalue arsenal, that's pretty easy. That's pretty straightforward and frankly I guess I would amend my previous comments slightly to say if you make the countervalue choice maybe we don't need to – I mean, we need to for reliability reasons, but not in terms of capabilities. There wouldn't be much need for an adjustment of things. A serious counterforce strategy, however, would need to – not to reopen early 2000s debate – but would need to reconsider the issue of earth penetration. If you want to hold at risk targets of the modern sort, people have become much better diggers and burrowers than they use to be. The technologies for that have, to some extent, changed. They have, to some extent, proliferated as well. That's a type of mission that frankly old style devices are not suited for. And a number of studies have opened questions as to the degree to which all targets are in fact prosecutable, to use the jargon in the modern era. Hopefully the number that aren't are small and that their effect overall on things is not that great. But if you were building from scratch I think you would need to take that into consideration. You would presumably want to take into consideration what the range of options is in terms of what type of output. You know, we had a debate in the late '70s about tailored output weapons. I don't know what is possible in that realm or what good it would do you, but these are debates I can't answer because I just don't have the technical knowledge.

And presumably, it also requires weighing the range of physical effects that you could conceivably achieve alongside the range of targets that you want to hold at risk. I don't have a security clearance anymore. I can't have a discussion about either one of those topics. And my knowledge was never that good to start with. So these are discussions that we need to, I think, or should have, but it's

very hard to expound about over the dinner table. But I think a bottom-up review of what capabilities we need would probably be a darn good idea.

MR. INGRAM: Developing that thought a little, Chris, I think it was Peter last Thursday that talked about the need to hold at risk things that one's potential enemy values most. And this is actually the bridge between countervalue and counterforce, because the thing that they value most may be their own lives and their military-industrial complex, rather than the population centers.

MR. FORD: That's a very good point.

MR. INGRAM: And that's what you're talking about in terms of –

MR. GRAHAM: Can I ask you just a second follow-up? When you say hold at risk – hold assets at risk, when we use to talk about that we use to think of the Soviet Union. Who are we thinking about now?

MR. FORD: That's an excellent point. And to some extent the real answer there is, who are you deterring? And it may be that country A responds – or we think is likely to respond -- extremely well to a countervalue strategy. What matters to them are the population centers. Whereas country B, doesn't even think about that, or cares less about that, and would really be deterred by threatening leadership assets and military forces and regime security institutions and stuff like that.

Which is another problem with a proliferated world. The more countries you're talking about trying to deter simultaneously, the more likely it is that the mix of answers to those questions will be different, which would essentially require you to be able to do all things simultaneously with your nuclear arsenal, which again has dramatic force planning consequences. So who you're deterring is a critical factor here. That's a very good point.

MR. GRAHAM: The way it is now is we seem to be focusing on North Korea and Iran as countries we are most interested in deterring. Well, it wouldn't take very many weapons to deter them. I mean, supposedly Russia could go south, I suppose, and so forth, but as of right now, isn't that the sort of deterrence we're thinking about?

MR. FORD: I think the bulk of our posture is still structured with the principle numerical adversary, Russia, in mind. I mean, our nuclear posture, our SIOP, and all these sorts of architectures that we set up are certainly not constructed with an Iran syndrome in mind.

MR. GRAHAM: But is that Cold War thinking, where we think they're just going to attack us with nuclear weapons?

MS. NOLAN: I think the metric for our deterrent has been other counterforce weapons that can attack the United States, but there's been quite a bit of adaptation. And again, I'm not talking on a classified basis at all. There's been quite a bit of adaptation to regional scenarios that have expanded that list of countries.

I think the most important challenge intellectually, quite apart from operationally, is what goes into the concept of deterrence and how you communicate. As you know more than anyone, the deterrence of the Soviet Union involved so many levels of communication about what – and the reason to have warfighting plans was to prevent the use of weapons and deter war. So as elaborate as these plans are, ultimately their purpose is to make deterrence credible, which is a war prevention strategy. However, if you're going to adapt these plans to regional contingencies, you need a more robust effort to communicate to adversarial or potentially adversarial, countries what you're thinking. We don't have that kind of exchange with the countries that we deem adversaries now. And there's no real reason to see how these two things link; plus, you know, aside from the operational issues of how you use large strategic forces against small countries that are contiguous to close allies, which is a big problem.

MR. INGRAM: Okay, I'm going to take a couple of questions next. One over here?

MR. DAVID CULP: David Culp with the Friends Committee on National Legislation. What would you recommend to the president he focus on over the next year or two, two or three priorities, for the next year or two years?

MR. INGRAM: Okay. So I'm going to give you a little space to think about that. And then over here?

MR. BAKER SPRING: Sort of an obvious thing is the fundamental question with regard to the sources of the disagreement, which comes back to the word that Janne used recently, just a moment ago, credibility, credibility of the deterrent. It seems to me, and this was talked about in the NPR as not where the administration would now like to go, is a concept that an effective deterrent will be credible if it is limited to the purpose of deterring the use of nuclear weapons – the sole use being to deter the use of nuclear weapons against the United States and its allies, versus something that would be more broad in terms of its application. I'd like to get both of your views on that central premise, and if there is any source of possibility for consensus if that is the starting point of the debate? Or maybe you don't agree that it's the starting point?

MR. INGRAM: Okay, so we've got priorities in advice to the president, and sole use. Let's go to Chris first.

MR. FORD: Okay, recommendations to the president, three things, I guess. One is sort of like the old real estate advice: nonproliferation, nonproliferation, nonproliferation. However difficult and challenging all these problems are in a conceptual and operational and practical basis in the strategic nuclear realm, they all get exponentially, algorithmically harder as the number of players increases, especially if the agenda has anything to do with trying to get our numbers lower. So, keep the eye focused firmly and resolutely on nonproliferation.

Secondly, modernization issues we talked about earlier. And third, transparency, information, the kinds of exchanges with other nuclear possessors that would help with at least a little bit of the

signaling that Janne talked about. The bigger the possessor the more important this is, but it's not limited to any one possessor.

I think the more that we can build transparency and confidence building relations with nuclear weapons possessors – you know, Beijing is probably the place to start, but it doesn't have to stop there by any means. The more we can do of that, the better. So it's sort of a three part agenda I think which would serve these overall interests pretty well.

Sole use – I think the premise of the sole use debate is faulty. We have never imagined nuclear weapons to solely be for deterrence of the use of other nuclear weapons. We got them in the first place, as I said, to end a war. We kept them to prevent a general war, that is to say, not just a nuclear war. They have always had utility with respect to large scale conventional conflicts. That's why we had them against the Warsaw Pact in Europe. That's, I think, largely why our allies value our nuclear umbrella in places like East Asia. It's not so much that they're worried about being nuked, they're worried about other things. And the umbrella is part of the architecture that helps reassure them that that is very unlikely to happen. Sole use, I think, is just a wrong analytical concept to start with.

MR. INGRAM: Okay, thank you. Janne?

MS. NOLAN: I agree with a lot of what Chris said, which sometimes might drive Chris crazy. But anyway, I think the first and most important thing is for the president to spell out what the basis of the consensus was in 2010 and be very clear about it. I think there were bargains struck at the time of the START debate that really resonated and had elements of great promise for the future, but which tended to get ignored shortly after the ratification.

Second, I think there's so much confusion about the meaning of the Prague agenda that it warrants, with some political risk, talking about what the rationale is for even thinking this way, because it is such a red herring most of the time when we have these discussions. It goes back to logic that was spelled out by the so-called Gang of Four, which is based on the simple and relatively common sense premise that the United States is by far the greatest military power, that there is not a single state or group of states that can rival the United States in its overwhelming military power. And the only thing that states could do to thwart that military power is resort to non-conventional weapons, including nuclear weapons, as being the most dramatic. And as such, that needs to be the goal of all like-minded states, to move towards a world in which nuclear weapons are de-emphasized.

So, I don't like this whole idea of discussion at all, no offense to anybody, but it has been so distracting and there are so many divisions within the zero community that they're eating their young even as we're having these other debates. I forget what my third – and I can't read my handwriting. So I know that these issues of sole versus fundamental, and first versus no first use matter to people. But I think it's very important to be realistic about this, that when we talk both diplomatically and militarily about all options being on the table, it supersedes these protocols.

And we found out when we were going to consider the Africa Nuclear Weapons Free Zone and sign the protocol with the caveat that this does not in any way constrain the United States from using

nuclear weapons in the event of a state having weapons of mass destruction, I am told that the current administration has moved that back too, sort of. But I don't think it's meaningful in the event of serious crises. Maybe it's politically reassuring to talk about this at times, but again, this is the declaratory versus operational split that worries me a lot.

MR. INGRAM: We had one over here.

MR. : Thinking about complications that can arise, I wonder what the two of you think about the inexorable growth of the reliability of defensive weapons and how that's going to change the whole discussion over the next some number of years?

MR. INGRAM: Thank you. And we also have over here.

MR. CHRIS WRIGHT: Chris Wright from the British embassy. You spoke quite a bit about the utility of nuclear weapons as a deterrent. I wonder if perhaps you could talk about other weapons that the United States has that can be used in a deterrent capability in the sense that militarily (they'll show much more results ?) than many of the states you might wish to deter?

MR. And also finally, Peter?

MR. HUESSY: I just wanted to – some people didn't hear, I think, the answer to Ambassador Graham's point, which I think is central to the point we're at. Let's say you wanted to deter North Korea and Iran, and as Pat Hecker (ph) said, you need 20 warheads. And he said to be nice, I'll give you 100. Well, let's have 20. Let's put them on one submarine, as President Carter proposed to an NSC meeting back in 1977, I think it was, at which point they kicked everybody out of the room and said, Mr. President, please don't ever say that again.

(Laughter).

If you put 20 warheads on one submarine, you now are inviting your adversaries to find that submarine, and they can take it out surreptitiously and you don't know who it is. So you can't go down to such low levels that you ask an opponent to come get you, so to speak, which is why in the (Gray ?) administration we had all the fights over a small ICBM and a mobile Peacekeeper. So even if you think Russia doesn't need to be deterred, unless everybody agrees to go down to such low numbers -- and the question then is – the incentive will be to find the other guy's weapons if they're in such small numbers that you put them on one platform.

So in order to deploy a number of weapons you need to spread them out. That's the stability argument. I'm perfectly fine with 1,000 warheads, if that's what people want to do. Put them on 450 Minutemen. Put them on 196 Trident subs, bombers go free up to 50 because they're not fast flyers, and you come out to 1,000 warheads. But you have 700 to 800 SNDVs so that in a crisis -- which is my next point -- in a crisis you don't want so few warheads that if the Russians and the U.S. come eyeball-to-eyeball, or China and the United States, or for that matter the three of us; as Paul Nitze said, you want them to look at their computer and simulators and numbers and say, not today

comrade, meaning keep the nuclear gun in the holster, or keep the holster in the safe, but don't even think about using it.

And you can't do if you go down to such low numbers that you put your systems in a deployment mode where the other guy over time, as Larry Welch says, can come get you surreptitiously and attack your force. Or, as he says, a technology change in underwater ASW, without ICBMs -- which is what Bruce Blair proposed -- all of a sudden a technology change that you might not be aware of could completely change the strategic balance. And I think it's important to note that when Ambassador Pickering was claiming we don't need ICBMs before the Senate Appropriations Committee, on exactly the same day the Chief of Naval Operations publishes an article in Proceeding saying that his number one security concern is underwater acoustics technology and the vulnerability of what he said are ships above and below the surface of the ocean.

So I think, Tom, in answer to your question, even if you decide the only two countries you need to deter are North Korea and Iran, and you can decide you can do that with non-nuclear weapons, your problem is you've got -- pick a number, six or seven other nuclear powers that have nuclear weapons that if we had none, you would be risking their willingness to say well, we've got nuclear weapons. We have the ultimate hammer. You, the United States, are not going to say anything when North Korea walks into South Korea, or when Iran and its confederates try to take over the Persian Gulf, or Venezuela goes into Colombia.

You have no idea, because if you go back and look at history, every Secretary of Defense since World War II in their confirmation hearings, none of them were asked about the wars that broke out during their tenure. No one anticipated it. Go back, it's really fascinating.

You can go all the way back to post World War II and nobody was asked, what about the North Koreans invading South Korea? What about Vietnam? What about the attacks of terrorists, and so forth?

So I think the idea that we can anticipate every future conflict -- as Keith Payne and Frank Miller said on the 13th -- and that therefore we can pick an arbitrary number of nuclear warheads as deterrents that will take care of all these situations, I think you have to err on the side of insurance. And whether that's 1,000 warheads or 1,500, since you're not going to zero I don't see that it really matters whether you have 700, 800 or 1,000. But you should have a number that is very stable that in a crisis no one is going to reach for the nuclear holster. That would be my point.

MR. GRAHAM: I don't disagree with that. My question went to what is the deterrence theory that applies to deterring Iran? Who are we trying to deter?

MR. HUESSY: I think, as you said, you hold at risk the targets they have that enable them to fight. Blowing up cities doesn't stop them from launching a missile, any more than it stops the Russians or Chinese. But if you can hold at risk their military capability, and in a retaliatory mode wipe out the capability to continue to fight, then their military objectives cannot be met.

MR. GRAHAM: We're deterring the Russians and the Chinese.

MR. HUESSY: Or the North Koreans or the Iranians. You stop their ability to –

MR. GRAHAM: Or anybody (with nuclear weapons ?).

MR. INGRAM: Okay, so I'm going to ask quite a lot of our two speakers because I'm going to ask them to answer or respond to those three points: missile defense, other weapons that can be used for deterrence and the challenge of low numbers; but also to sum up any other final comments they would like because we've reached 9:30 and I don't want to keep you longer than we said we would keep you. Chris?

MR. FORD: A great question on defenses. Certainly watching the technology evolve over the years, it appears we've sort of reached this strange point where it is becoming apparent that low-level ballistic missile attacks are increasingly answerable by such small attacks -- entry-level arsenals, if you will, of ballistic missiles are increasingly answerable by defenses. But there is essentially zero progress on dealing with really large scale or very technologically sophisticated ones. If that situation were to hold over time it would create sort of an interesting dynamic in the sense that you could imagine almost a kind of – at least with respect to ballistic missile launched nuclear weapons attacks – you could imagine a kind of functional zero applying as between the most sophisticated possessors of defenses and the least sophisticated possessors of nuclear weapons. That would not be a broader functional zero. It would not cover other avenues of attack, other methodologies of delivering weapons. It would not apply to more sophisticated possessors of such tools who are able to have better penetration aids or other types of penetration technologies. It wouldn't apply to anybody with significant numbers, able to overwhelm defenses.

So it's not – over time, it's a dynamic situation, not simply a panacea -- you sort of flip the switch and oh thank goodness we don't have to worry about that forever more. These are dynamic tensions. On a good day, and things would have to be managed and kept up over time, but you could imagine a situation in which at least ballistic missile attacks were largely protected against by some countries at very low levels.

So there is a potential answer for the developed world vis-à-vis incoming entry-level proliferators like Iran and North Korea, god forbid, while yet not really affecting the strategic nuclear relationships between the great powers. That's not an ideal kind of situation. It may be the least worst scenario for a significantly proliferated world, I don't know. But it's a very interesting question on how these things get driven over the future through the kind of mutual shaping that these dynamics would create. It's a very interesting point.

On conventional weapons and deterrence, yea verily, I think the United States has been in the very luxurious position to be able to think more seriously about turning the rheostat down on the role that nuclear weapons play. I don't think the rheostat can be put to zero at this point, under present technologies and circumstances, but that doesn't mean that we can't do more. And we've been trying

very hard to do a fair amount. Whether we've intended to or not, it has sort of worked out that way, to some extent.

And to the degree that long-range precision strike and really good ISR on a global basis – to the extent that those capabilities can be maintained – and by the way, those are probably more expensive over time than nuclear weapons themselves. All this talk about budget debates, if we really want to replace or if you really want to keep a low role for nuclear weapons by relying more upon those types of conventional technologies, we need to be able to shoulder even bigger budget burdens. That needs to be said, I think, for the record.

But to the extent that we can keep those capabilities over time, I think the rheostat can be held on the lower end of the scale very successfully. It's something that we talked a lot about in the Bush administration. There wasn't a lot of budgetary support for those things. We didn't go as far as we wanted. More work is now being done. So I think over time you see almost a kind of U.S. bipartisan consensus. Whether or not people agree on zero, you see at least Americans across the board being very supportive of keeping the role nuclear weapons play as low as possible precisely by those means, to which I say excellent.

MR. INGRAM: Janne?

MS. NOLAN: I think the shift in the politics and the role of defenses can be found in the cooperative approach that has actually come quite a long way in NATO. If it has not become a kind of fait accompli, it certainly has made huge progress, going back to Lisbon and the re-ratified in Chicago. There are actually fault lines in that statement, but it's really a different world, I think, in the debate about defense and the fact that they play a role both in American strategy and allied strategy. There's a reality to it now with Aegis and other systems that are getting embedded into service plans and we're sort of moving along. So I think there are still obvious disagreements about what the role of defense will be, but there's a lot of progress made – tangible progress on this front.

I think I talked briefly about the conventional aspect of it. I completely agree with – sorry, Chris – I totally agree with what Chris just said. And I think one of the things that drove concerns by people like Bill Perry about the role of nuclear weapons in the 21st century has to do with the perception of the overwhelming superiority of the United States in conventional capabilities as being a potential perceived provocation to smaller states that could not possibly hope to compete. And as such, the number one issue for the United States should be the counterproliferation, nonproliferation agenda. I think that is the logic that led him ultimately to join with the other three to talk about a world of zero. A world of zero is really a world of zero for proliferation. It's really, I think, in my view that's – again, Chris has already covered, so I think the increasing role of conventional forces that can – and precision strike – that can take increasingly the place of the nuclear deterrent.

MR. INGRAM: Thank you very much. I think we'll draw it to a close there. I just want to finish with my imparting remark, which is that I think there were several themes that came up that I think will continue to grow for some years.

One of the ones I really wanted to highlight was Chris' point about utility, and some of his colleagues in the nonproliferation community when he was serving, saying in the end other states wouldn't actually value any disarmament unless it hurt U.S. security. And that, I think, is a very interesting way of putting the point in another way, which is all the while we retain attachment to the utility of the weapons, then other states will not value the sort of disarmament that we would find comfortable. So the challenge is, are we prepared to think about how we can reduce the utility of nuclear weapons without putting the U.S. and its allies security into a tailspin? Is that possible? And that's probably the core challenge of the differences between people in this debate, those that may be optimistic that that is possible, and those that are less optimistic or pessimistic about that.

That's my final comment. Thank you very much, indeed, for coming. I'm sorry to keep you here five minutes longer than we promised, and I hope you have a good day. And can you express your appreciation?
(Applause).