

061317 Air Force Association, Reserve Officers Association, and National Defense Industrial Association Capitol Hill Forum with John Harvey, Former Principal Deputy Assistant to the Secretary of Defense for Nuclear, Chemical, Biological Defense Programs, on “U.S. Nuclear Modernization Ahead: Cooperative Paths Forward.” (For additional information on NDIA/AFA/ROA seminars contact Peter Huessy at phuessy@afa.org).

MR. PETER HUESSY: Good morning, everybody. On behalf of the Mitchell Institute, I’m Peter Huessy and thank you for being here at the next in our series of seminars on ‘Nuclear Deterrence, Missile Defense, Arms Control and Defense Policy.’”

I want to welcome some of our guests today. Frank Rose is here, formerly with the State Department and now with the Atlantic Council. We have Hunter Hustus, who is here from A10 from General Weinstein’s office. I also want to thank Steve Henry, who is here. He was previously the Special Assistant to the Secretary of Defense for Nuclear Matters. I want to thank our sponsors and our guests from Japan as well.

Thursday of this week we have General Formica and General Todorov who are going to be talking about the Ballistic Missile Defense Review and some of the challenges they see there. On Friday we have a Space Budget Brief with secretary of the Air Force, Congressman Bridenstine, Congressman Lamborn, Congressman Babin, and also from Todd Harrison at CSIS, and the special space investigator from the General Accountability Office.

Next week we have General Hyten, who is going to combine his space talk along with his BMD and nuclear deterrence, and that’s on the 20th. Then finally, on June 27th we’re going to have a joint missile defense event with CSIS, with General Obering as our breakfast speaker. Then CSIS is going to have a further conference for the rest of the morning and early afternoon.

Then on the 28th of June we’re going to hear from our friend, Frank Rose and Rebeccah Heinrich, who are going to be talking about combined missile defense and arms control issues with respect to NATO. Hopefully I can rope them into talking a little bit about Northwest Asia as well, and the wonderful problems we’re facing there.

I’m honored today to have my friend, John Harvey, here, who many of you know was Principal Deputy Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs between 2008 and 2013. Prior to that, in his 38 years of government service, he was at the Lawrence Livermore National Lab. He also had senior positions in the Department of Defense and the Department of Energy, as well as a stint at Stanford’s CSAC.

I’ve always thought John was critical to making sure that the Perry-Schlesinger Commission not only got off the ground, but came to the very positive conclusions that they did. John retired from government service in 2013, but he certainly has not retired from this business. I have always considered him kind of a wise voice to keep us on an

even keel with respect to strategic nuclear modernization and deterrence. So today he is going to tell us a little bit about what he sees down the road with the Nuclear Posture Review, among other things.

Would you give a very warm welcome to our friend, John Harvey?

(Applause).

MR. JOHN HARVEY: Peter, thank you. I so much appreciate everything you've done over the years to support this effort and to provide venues to get the message out. Today you'll be hearing a message that you've heard from me over several years. The basic theme is the same. It's going to be about the challenge of sustaining and modernizing our nuclear forces in what today is a very dynamic -- both geopolitical dynamic environment and a domestic political environment.

My focus will be on how we have done six months into the Trump administration on modernization, to catch up. Most of what I have to say is reflected in the president's fiscal year 2018 budget request that he issued late last month. I will offer some views on some critical issues facing the Trump team in its upcoming review of the U.S. nuclear posture, including the debate on the potential role of low-yield nuclear weapons in strengthening the deterrence of our adversaries and assurance of allies. I'm going to test drive an idea for you that I've been trying to develop on low-yield nukes, and I'd appreciate your reaction to it.

My bottom line first, we're heading down the right path on modernization, let's not screw it up. How did we get there? Over the past seven years great progress has been made in advancing a comprehensive strategy to sustain and modernize U.S. nuclear forces. The Obama administration sought significant increases in modernization budgets. In very large part, Congress has authorized and appropriated the funds for these programs.

The Trump team has carried forward this modernization program; more on that later. The first priority, our first priority, or my first priority is to preserve this fragile consensus that has been built up, and bolster it if possible, in the face of two fairly daunting challenges. The first challenge is the bow wave of cost for the modernization that will peak in the 2020s. Second, and most importantly, is to navigate and sustain the momentum on consensus as the Trump team and its national security guys navigate the turbulent waters of modernization.

On this last point, the new administration is finding its way on nuclear weapons. In December, soon after the election, the president tweeted that we should greatly expand our nuclear capabilities, and this caused quite a buzz of media activity and speculation. [By the way, I'm glad to see a number of young people around the table. You don't normally see a lot of young people, except for PONI folks, at nuclear meetings and I'm really glad to see that.]

In February in an interview with Reuters, the president gave his version of Obama's Prague speech. He said, "it would be wonderful -- the dream would be that no country would have nukes. But if other countries are going to have nukes we're going to be at the top of the pack."

In that same interview he called New START a one-sided deal, and is reported to have conveyed the same view in an earlier phone call with President Putin. Whether Democratic support is needed to advance nuclear modernization, I would argue any pullback from New START, or calls for nuclear superiority, are unlikely to bolster support from the other side of the aisle. Indeed, the rhetoric on things nuclear must be subtle and restrained if one seeks to advance a program that will survive the legislative process. And yes, support from Democrats on modernization is important. A core group of Democrats and Republicans from the Armed Services Committees, ably supported by staff, have made quite a bit of progress working together and have been responsible, in a political environment as corrosive as many of us can remember, for the glimmer of bipartisan support that has characterized nuclear modernization these past few years.

Now let's turn to what Mr. Trump has actually done versus what he has tweeted. In a January memorandum he directed the Defense secretary to conduct a review of U.S. nuclear posture, policies and programs, aka the 2017 Nuclear Posture Review. In late February, as lead in to his budget request, the president called for an additional \$54 billion for FY '18 to augment DOD's overall modernization. If sustained in Congress, it would ease fiscal pressures from the modernization bow wave.

The administration has been slow to populate senior level positions in the government, but several exceptions are noteworthy in the nuclear arena. Former Senate Arms Committee staffer Rob Soofer is in place as Deputy Assistant Secretary for Forces Policy for Defense. I have a certain fondness for that position -- I used to serve in it. And, with Greg Weaver of the Joint Staff, he will oversee the ongoing review. This is good news. Both Rob and Greg understand the nuances of these issues and will be creative in advancing a national agenda.

Energy Secretary Rick Perry has kept Frank Klotz on as interim head of NNSA until his replacement is confirmed, which is a good thing. Keith Payne, an eminent intellectual in this area of nuclear policy, will be helping out at DOD on a part-time basis, and a few of us will be weighing in informally. Indeed, the National Institute for Public Policy, which is Keith's organization, has this recent landmark study "A New Nuclear Review for a New Age," which I would consider offers a bipartisan approach on nuclear policy to the Trump team not unlike that provided to Mr. Obama and his team by the Perry-Schlesinger Commission.

Los Alamos, Lawrence Livermore and Sandia, working together -- which is quite unusual when you think about it -- working together have authored papers exploring the technical basis of several policy options being considered in the NPR. Again, all good news. But I will be looking for much greater progress on national security appointments, both in DOD and DOE, in coming weeks.

Of course, the proof of the pudding of this team's commitment to nuclear forces is reflected in the budget request. That request, in essence, is a continuation of the existing program of record initiated by President Obama in his second term. The FY '18 request - I'm going to list a few things -- continues to fund Air Force and Navy modernization programs launched to recapitalize the three legs of the triad. For FY '18 this includes: \$2 billion to fund continuing development of the B-21 bomber; \$451 million to continue development work on LRSO; \$776 million for development and \$842 million in advance procurement for the Ohio Replacement submarine; \$216 million for the Ground Based Strategic Deterrent to replace Minuteman III; \$35 million to enable the F-35 to carry the B-61-12 nuclear bomb by 2025; \$180 million for the B-61-12 bomb tail kit; and \$447 million for nuclear command and control modernization.

According to Rob Soofer, in May testimony before the House Armed Services Committee, and I quote, "The president's budget request for 2018 fully funds DOD's nuclear recapitalization program and provides for nuclear force sustainment operations. It adds more than \$3 billion across the FYDP relative to the previous year's request to continue improving the health of DOD's nuclear enterprise." Meanwhile, NNSA is seeking about \$14 billion, including \$10 billion for nuclear weapons. This represents an increase of \$1 billion above last year's level, almost all in the weapons accounts. The \$4 billion for directed stockpile work, which includes the warhead life extension programs, represents a 20 percent increase from last year.

So while Congress has not yet weighed in, the early returns are encouraging. Moreover, this budget was issued just as the new Nuclear Posture Review was gearing up. Once that is completed we should expect some tweaks to the program, hopefully tweaks and not wholesale upheavals, so that we can stay on track with and remain focused on the urgently needed recapitalization of the nation's nuclear triad.

Let me turn to the 2017 NPR. The previous NPRs, those concluded by Bill Clinton in 1994, by George W. Bush in 2001, and Obama in 2010, reflect much more continuity than change. All concluded that a strategic triad, and European basing of U.S. nuclear bombs carried by NATO dual-capable aircraft, were essential to both strategic deterrence and assurance of allies. In addition, a hedge capability is needed to respond to unanticipated technical problems or to adverse geopolitical changes requiring potential force augmentation. Deterrence could not be based solely on the existence of nuclear forces, rather it depends on the ability of forces to hold at-risk assets most valued by an adversary. In this consideration, force capabilities mattered, and all understood that capabilities might need to be adjusted as adversary target sets and employment strategies evolved.

My guess, my hope, is the Trump team will carry forward these basic elements of nuclear policy. But on this last point, needed nuclear capabilities, a dust-up in national security circles has emerged. This is reflected in a recent report of the Defense Science Board that calls for the exploration of, quote, "tailored nuclear options for limited use, including options for nuclear weapons with lower explosive force."

And there has been a back and forth. Just last week Jon Wolfsthal published something on this—a critique of the Defense Science Board recommendation that the Nuclear Posture Review should consider some of these options. This recommendation, while controversial, emerged from the serious rethinking about how regional conflicts involving the United States and its allies could play out. The ensuing debate also reflects a seeming logical tension, between deterring and fighting a nuclear war.

We are all familiar with the Cold War scenario involving a massive global nuclear exchange. This was a very high consequence, very low probability event even during the Cold War. More recently, there is increasing concern that in a conventional conflict an adversary could employ very limited nuclear use as part of a strategy to maximize gains or minimize losses. Some call this the “escalate to win” strategy.

Specific cases include the threat of limited nuclear use to solidify territorial games, for example, by creating a *fait accompli* from an initial conventional attack. There is the threat that adversaries will use limited use to discourage or make it more difficult for the United States to come to the aid of allies in a fight; or to end a losing conflict short of the demise of the regime. The critical question before us and before the Nuclear Posture Review is, does the ongoing modernization program need to be adjusted, or existing declaratory policy revised, better to deter so-called limited use options?

Opponents of low-yield nuclear options cite two arguments, and they’re distinct arguments. First, once the nuclear threshold is crossed, they argue, escalation cannot be controlled. So even very limited use would lead to a massive nuclear exchange.

The second argument is that modernization involving low-yield weapons, by blurring the line between conventional and nuclear, undermines deterrence by lowering that threshold, thus making nuclear war more likely. Obviously those two arguments are distinct, but related, and I want to touch on each of them in turn to see if I can convince you how to think about this.

Senator Diane Feinstein, a vocal opponent of the Defense Science Board findings, has argued, quote, “There’s one role and only one role for nuclear weapons, and that’s deterrence. We cannot, must not, and will not ever countenance their actual use.” Her statement, while well-meaning, reflects a fundamental misunderstanding of what deterrence is all about.

Deterrence is based on whether or not enemy leaders believe that the United States has both the capability and the will to employ nuclear weapons, in extremis, when its vital national interests are threatened. A, quote, “threat to use” has therefore always been a part of the deterrence equation that has helped prevent any nuclear use of nuclear weapons for over 70 years.

Would an initial limited nuclear exchange inevitably escalate to general nuclear war? Many Americans, including many in the nuclear community, share a belief that it

would. Are they correct?

Well, we simply don't know, thank God—deterrence has worked so far and there's been no occasion to test the premise. We haven't done the experiment.

That said, if our nuclear adversaries also share this belief that initial use will inevitably lead to massive global use -- and we were certain that they shared this belief -- nuclear forces might not require certain capabilities extant today. We need such capabilities because several, including Russia, as evidenced in its recent doctrine and modernization programs, are emphasizing limited use options. They seem to believe that nuclear war can indeed be controlled.

Very importantly, it is not what we believe that matters in deterrence. After all, we are not deterring ourselves. It is what the adversary believes.

To deter limited nuclear use, therefore, the U.S. must ensure that it has flexible nuclear capabilities and a nuclear posture and declaratory policy that in an adversary's eyes -- again, in the enemy's eyes -- credibly convey the message that no advantage at all, and only unacceptable downside consequences, could result from limited nuclear use. Exploration of the role of low-yield nuclear options, therefore, is primarily about deterrence, not war fighting. Only if we fail to deter, because our potential response is not credible, does U.S. use come into play.

What would not be credible? Well, we don't know for sure because we can't read the minds of our adversaries.

But consider an enemy's low-yield strike on an allied port that didn't kill many people but seriously disrupted U.S. plans and abilities to reinforce that ally, say in the Asia-Pacific region. Would U.S. retaliation involving high yield multiple hundred kiloton scale warheads, and the potential for substantial casualties, be a credible response? Would a broader spectrum of potential nuclear strike options increase the credibility of the U.S. response? Those are the two questions?

Partly as a result of such concerns, the United States has for decades fielded low-yield nuclear options for delivery on heavy bombers and dual-capable fighter aircraft. Ongoing modernization programs, such as the B-61-12 bomb life extension program, the Long-Range Standoff Cruise Missile program, the program to provide a nuclear capability to the F-35, and B-21 bomber acquisition, are important because they will preserve such options in the future. The United States, however, does not have low-yield options for delivery on strategic ballistic missiles, that is its ICBMs and SLBMs. Such capability could be provided with a fairly simple modification to an existing warhead and should be explored in the upcoming review.

The second argument, that low-yield nuclear weapons reduce the nuclear threshold, is an assertion that is simply not empirically based. Since the 1950s, the U.S. stockpile has had thousands more so-called tactical warheads than we have today, many

with much lower yields. Such warheads were deployed at the height of the Cold War, but never used in confrontations where their use would not necessarily have provoked a Soviet response. There is no evidence that the simple possession of these weapons made nuclear use by the United States more likely.

Finally, assuring allies of our commitment to come to their defense, including the nuclear guarantee, is a critical U.S. national security goal. Like deterrence, assurance is in the eye of the beholder, and allies have become ever more mindful of the dynamic threats in their regions. Some, like the Republic of Korea, have expressed interests in exploring an increased U.S. nuclear presence in their region, potentially involving lower yield warhead options.

As part of its ongoing review, I want to turn to some of the other thinking about the NPR. I gave you the pitch on low-yield weapons. I'd like to get your reaction to it. But as we go forward, there are a number of other issues that need to be addressed.

The administration should go forward unburdened by myths and fallacies of arguments, examples of which I've just cited. It would do well to explore options to strengthen deterrence and assurance. Among other things, the review should address the following. I'm not saying we should make a decision to do these things, but I'm saying the review should address the following issues as a means of seeking to provide decision makers with informed thinking about the pros and cons and risks and benefits.

Here are the ones I would think should be on the table for the 2017 review. Repeating what I said earlier, modification of existing warheads to provide a low-yield option for strategic ballistic missiles, at least until a viable prompt global conventional strike capability is achieved.

As a prudent INF compliant response to Russia's INF violations, the NPR should consider acceleration of the long-range standoff cruise missile program and/or, restoration of land-attack nuclear SLCMs to attack submarines. This is the Jim Miller, Sandy Winnefeld idea that was published a few weeks ago in "Seapower," which I urge you to take a look at. This is from the guys who, in the Obama administration, decided to stop maintaining capabilities for SLCM deployments. They're saying now that in response to the Russian INF violation, we should bring SLCMs back, or consider bringing them back.

We should consider innovative implementation of the Congressionally-mandated Stockpile Responsiveness Program to provide young weapons designers and engineers at the National Labs with opportunities to hone skills with challenging design and development problems. These are simply problems they don't get as part of the warhead life extension program. Warhead life extension programs test part of the set of capabilities we need, but not all of them.

Acceleration of the interoperable warhead development program. It is to achieve the same goal of providing challenging problems, to our young designers and engineers,

and also to reduce the risk to the ICBM force from early age-out of the W-78 ICBM warhead.

We need to consider augmented declaratory policy to address Russia's and other's "escalate to win" strategy. I am currently participating in a Defense Science Board study on national leadership command capability, which includes nuclear command and control as a sub-set of that activity, and believe there is a need for increased focus on the cyber vulnerability of nuclear command and control system.

I'd like to see increased dual-capable aircraft readiness in NATO. We typically have readiness levels measure in weeks to months. I think some of our forces should be in a readier posture. I'm not talking about strip alert, but I'm talking about an increased readiness posture.

Consultations with Japan and the Republic of Korea to explore the following ideas to strengthen deterrence and assurance in the Asia-Pacific region: demonstration of a capability to deploy dual-capable aircraft to bases in the Republic of Korea and Japan (demonstration of a capability, not necessarily doing it--you don't need to do it with real weapons, but could use training units); restoration of nuclear weapons carriage capability to carrier aircraft via the F-35; and restoration of nuclear SLCMs on attack submarines. The United States should fully involve allies in any consideration of these ideas.

I'm happy to address these options further in the discussion. But to be clear, I am not now endorsing any specific option, just that a fulsome nuclear review and informing senior decisions must consider both the risks and benefits of such adjustments to existing nuclear posture. Careful evaluation of all such options will ensure that we are doing all we can to deter conflict and reduce further the likelihood of any use of nuclear weapons.

While the 2017 NPR should open the aperture in several areas put to bed by the Obama team in 2010, great care must be taken to manage the downside risk that certain recommendations could rupture the existing consensus on today's modernization program. We must work hard to keep that program on track. And look, this is going to be a challenging issue even with broad consensus on the approach.

Efforts underway to modernize triad delivery systems, platforms, nuclear command and control, and life extended warheads, involve a host of complex development and acquisition programs, each of which has very little tolerance for slippage. Any further delay in the Ohio Replacement submarine program, for example, will lead to shortfall in submarines at-sea in the 2030 to 2040 timeframe. Further delay in the Interoperable Warhead Program may well create warhead shortfalls for ICBMs. We are up against the wall on these programs. Faulty program execution may be our greatest risk.

Finally, the most senior levels of our government must continue to convey directly to the men and women who plan, operate, secure, maintain and modernize our nuclear forces, as well as to the American public at-large, that nuclear deterrence is

national security job number one. We can't fall down on the message. And we must be able to argue these things clearly and logically in an unclassified forum about why this is important for our nation.

With that, I want to thank you and I'm happy to try to answer your questions.

(Applause).

MR. : This is similar to a question I asked you the last time you were here. These take a long time and the concept of being able to make a minor change to a warhead to lower the yield, given the current state of our response, this is a decade long task, no matter how trivial the change is. But recent information -- (off mic) -- the current LEPs are all in danger of slipping because the supply chain has been broken and we're now relying completely on some people -- rather than say the Kansas City plant, which is being rebuilt and now isn't big enough to make parts, they have to go to outside vendors who are now turning out to be unable to do it at these plants. So our responsive infrastructure has, to some degree, gotten less responsive. That seems to be a real big drag. Can you comment on that?

MR. HARVEY: You just rang another one of my bells on this, which is the supply chain. It is very important that we maintain the integrity of supply chain with regard to particularly our nuclear weapons and anything having to do with nuclear deterrence. There are very creative people out there who can get into your system if you're not paying attention to this, and we need to watch that very carefully. I am glad to say that a big part of the B-61 tail kit program, and the B-61 life extension program, involve ensuring the integrity of the supply chain.

You raise a point which I'm not aware of the details about, but I think good management of these programs has to be able to -- there's a lot of moving pieces that have to come together--if we can't manage that, then we're not doing a good job. We've just modernized Kansas City and it gets remarkably good grades in terms of its performance, in terms of getting the job done. So I'm a little bit puzzled by your comment.

MR. : Some of the things they can't make any longer because they don't have the space and so they're going to outside vendors. Those vendors are turning out to be unable to deliver.

MR. HARVEY: Okay.

MR. HUESSY: We have someone here from Kansas City.

MR. HARVEY: Marty, you obviously can speak to this better than I can. I cede two minutes to you.

(Laughter).

MR. Schoenbauer : That was actually part of the Kansas City strategy, that we would shift from about a 35 percent outsourcing to almost a 70 percent outsourcing. So all of the critical components that are assembled there, the vendors are classified parts that we buy and they're put into classified components within in the facility. So we have also a very disciplined risk analysis too that we look at. We look at what are the risks with the vendors in terms of one supplier, two supplier, those kinds of things. What are the needs? And I would say those are managed on a daily basis to understand where the vulnerabilities are and what we need to do to shore that up. So I would differ with your assessment on that.

MR. HARVEY: Well let me make one point, and that is we basically have four life extension programs going away. We're cranking out W-76s, we're almost done with that, so I think that program is in reasonably good shape.

From everything I hear the B-61-12 development program is in pretty good shape. The W-88 Alt, which is not a life extension program, seems to be cranking along and meeting the Navy's needs, at least in terms of their current schedule. And we're not far enough, along on the W-84 for the ALCM/LRSO, to make too much of a judgment about that. And we've delayed -- again, which I railed against in my talk -- delayed the Interoperable Warhead I program.

So again, Larry, I haven't quite seen this yet. But we do have a very ambitious program that's coming up and we'll be life extending warheads for the next 20 or 30 years, and so we'd better have our act together on this.

MR. Rose : John, you mentioned the consensus for modernization. One element of the program, the LRSO, has become quite controversial. Opponents argue that it is a quote, "destabilizing," dual-capable missile, or things like that. They also argue that if we eliminate our cruise missiles it's going to lead Russia and others to do away with their cruise missiles. And, it's not affordable. So I'd be interested in your thoughts on the arguments that opponents of the LRSO make. Do you think that they are correct?

MR. HARVEY: Well the best argument I've seen against the claim that these cruise missiles are destabilizing was made by Rose Gottemoeller in hearings about a year ago that I'm sure, Frank, you were intimate with and possibly even drafted.

(Laughter).

But let me make one point about LRSO. You listed all of the points that opponents make in the ongoing debate but none of them have merit.

The one that gets to me the most is that somehow by having nuclear and conventional cruise missiles that somehow when we shoot a conventional one the adversary is going to think it's a nuke and is going to respond with nukes. Well if you make that argument, as some do, then we'd better get rid of the ALCM because we've

got cruise missiles that are conventional and nuclear in our force right now.

It just doesn't make sense. And John Hamre and Rose and many of us, including you Frank, have made this case. The interesting thing about LRSO, first of all it's one of the more moderately priced systems being developed. Moreover, we know how to design and manufacture cruise missiles. We know how to get them out the door. We have production lines for them right now. So we're going to do something we sort of know how to do, and it's an \$8 billion program and it helps the bombers do their job. If you're going to go after the money, you don't go after LRSO. I think the president and his team are behind LRSO; they're funding it, at least. I don't think the "destabilizing argument" is going to present any problems--it's more of a niche argument by folks who are trying to pick at the program.

Do you want to respond to that, Hans, since you're one of them?

(Laughter).

MR. Kristianson : You know, I'll let that one go by. But I want to pick on the other issue that you raised, the one about the need for low-yield. The reason I want to do that is because I want you to be a little more specific, given the large capabilities of low-yield options we have in the current stockpile, like you mentioned.

At the Defense Science Board General Hyten was asked whether he needed new capabilities. He said, we have plenty of flexibility in the stockpile etcetera, etcetera. So what is the scenario envisioned where the existing capabilities we have when it comes to low-yield are not sufficient in these limited regional scenarios?

MR. HARVEY: Look, I think that's a valid point. In a certain sense what this NPR should do is look at the security environment we're living in today and how it might evolve over the next 10 years. That's what we did in 2010, and we were wrong. We thought it was going in a certain direction, and we had to hedge against the possibility of going in the other direction, but it went in the other direction.

Now this team is faced with a different problem than we were faced with in 2010. We're faced with a doctrine that seems to suggest that several of our potential adversaries believe they could achieve their objectives with limited nuclear use. My basic point is our job has to be to convince them otherwise. If that requires some tweaking of our arsenal, we need to think about that.

The basic area where I think we need additional flexibility is in the ballistic missiles. I would like to see a small, low-yield warhead. We're talking about, quote, "a primary only variant" for an ICBM or an SLBM.

Basically, I want to provide the president an option in an extreme situation to be able to deliver measured nuclear force to anywhere in the world in 30 minutes, which is what that capability would provide. We don't have that capability today. If we had long-

range global conventional strike I would feel that element or option to be a little less pressing, but we don't have that capability today.

So it's the idea of, we can't envision everything or every scenario. Our job is to provide the president options. I think it's an argument that hasn't been made yet about whether we should do this, but I think we should explore it.

Drew.

MR. Walter : I want to follow up on what Hans asked. You lived through RNEP in particular, and RRW to a certain extent, and you know better than I but some of the dynamics at play there politically were, do we trust that president, George W. Bush, with a pre-emption doctrine? Can you trust that president with an RNEP or RRW-style capability? I think my political sense is we have a little bit of that same trust issue with the president currently. So while I certainly agree with you on the low-yield option and the need for having that on the escalation ladder, how do you think the political dynamics play here with the current president and giving him another lower-yield option that may look like it could be used in a first strike or pre-emption kind of way?

MR. HARVEY: I think it's too soon to tell. I think what Mr. Trump says about this stuff matters. I think all of us need to be trying to shape this environment in ways that we can proceed with this modernization program without putting ourselves back in the position we were back in 2003-2004 where there was simply no trust in the system for what the administration was trying to achieve.

Look, we've got a good team over at the Pentagon. Jim Mattis has high regard around the country, both inside and outside the beltway. He is not as easy a sell on this stuff as Ash was, okay? I think you're going to see some serious questioning of some of the things we have in the program, which is what a Nuclear Posture Review should do. But I think the risk is real that you've highlighted. I think how this plays out in the coming weeks and months in the Congress and in authorizing and appropriating what the president has requested, will be the proof in the pudding.

MR. HUESSY: An advertisement, Adam Lowther in his remarks last week detailed many of the arguments for and against the cruise missile, which I urge people to read. If you can't find it on the web site, let me know.

Also, Brad Roberts, when he speaks in July, the title of his remarks are "Red and Blue Theories of Nuclear Victory," in which he is going to talk about Russian attitudes towards winning or fighting nuclear war. That is part of my question. Henry Sokolski's new book, I don't know if you've seen it, it just came out, re-edited, a very detailed look at China and Russia's huge infrastructure that they've built underground to survive nuclear exchanges. He says, I'm not sure what this means, but there are some implications for their view of the use of nuclear weapons.

That is my question to you. Many people that analyze this business think the

attitudes towards the use of nuclear weapons is symmetrical between the United States, France, England, our allies, and our adversaries. What's your thinking on that and how should that inform the Nuclear Posture Review? I know it's a lengthy question, but it goes directly to the heart of people thinking that a counter-city strategy should be what we do, minimum numbers of nuclear weapons, versus what we have today, which is a counterforce capability which does require more weapons.

MR. HARVEY: I would characterize the way we think about deterrence is, what does the adversary value and how do we best hold that at-risk, whatever it is: whether it's war supporting industry; whether it's command and control; political-military leadership; forces; or infrastructure. I agree with you that our policy has not been, and has never been, to hold the 100 largest cities in Russia at-risk. Our policy has always been to assess what is most valued and to hold that at-risk.

I think there's a debate out there in the community. I've seen a lot of writing that say that the Russians, even in their public documents, convey a view that is different from what they had maybe 10 to 20 years ago in regard to the role of low-yield nuclear weapons. When you put yourself in Mr. Putin's place and consider Russia's paranoia -- I mean, they may actually see NATO as an offensive threat; no matter how far we think of NATO as a defensive alliance in assuring security, they look at it differently. There is also some debate in the community about the degree to which the "escalate to win" doctrine is real or not. I mean, if you talk to some of the intelligence community they'll argue about this differently.

I think the Nuclear Posture Review has to assess this, get as many Russia and China experts as they can to come talk to them about these problems and these issues, and to make good decisions about what we need to do to bolster, if necessary, our deterrent. Yes, there is some asymmetry in the infrastructure. I wouldn't trade my nuclear forces for Russia's today, but they have an ability to crank these things out in certain areas much better than we do, particularly in the nuclear warhead area. But it's not just the warheads, you've got to have the delivery systems that work.

So I haven't seen Henry's book, but I think this is a key question. The question you posed to me is one we need to pose to Rob Soofer and others and make sure that they take this on in their review.

MR. : I'm from the embassy of Japan. I have a question about your idea of demonstrating the capabilities of DCA in Japan and South Korea. I can certainly understand in order to demonstrate the capabilities of DCA you can fly the aircraft to show the aircraft's capabilities. But in order to demonstrate the nuclear capabilities of the DCA, do you think you'd also need some other aspects of the nuclear operations, like how to transport the nuclear weapons to the region or something like that?

MR. HARVEY: Yes, yes. I think one thing you can do is you can fly a DCA squadron into a base in Asia. That's a piece of it. But a big piece of dual-capable is safety and security and proper handling of nuclear weapons. We had nuclear weapons in

Korea up until George H.W. Bush took them out. So there are storage bunkers there. I don't know what state they're in or whether they could be refurbished or not.

But the idea of demonstrating capability meansy not only flying the squadron in, but also the potential to bring -- not necessarily B-61s -- but inert training bombs in and show that you can handle them and show that you can store them and show that you can secure them. That's part of the demonstration of the capability. It doesn't mean you have to leave the squadron there. You can bring it in and then bring it out. You can bring the training weapons in and bring them out. But demonstrating capability doesn't necessarily mean deployment, and I want to make those two things clear.

Does that help you? How would that play in Japan, by the way?

MR. : (Off mic).

MR. : So for this NPR as in the others, do you think that there will be an implementation plan? One of the things that has not been talked about on your list is, as you know, there has probably been 40 to 45 reports on the nuclear weapons complex, on training, on organizational concepts and infrastructure. Will those be a part of the NPR considerations? I always think that all these reports get put out and nobody pays attention and puts them on a shelf. Now we have a new posture review and it might be something to consider.

MR. HARVEY: I think Norm Augustine -- in regard to the Department of Energy and the nuclear complex -- Norm Augustine and Rich Mies put together this report which among other things summarized 50 other reports out there that said basically the same thing about what needs to be done to fix the nuclear weapons enterprise in DOE.

MR. : There's also reports at DOD as well.

MR. HARVEY: Right, right. The internal reviews -- I think the Air Force has stepped up. I think it's very important that we continue to maintain the focus on the young men and women who basically secure, maintain and operate our nuclear forces. If you don't have them on your side, if they don't think there's a career path for this activity, that's not good.

And yes, there is "big DOD" -- I mean, we lost our focus for a period of time. There were a couple of breakdowns that are well known and have been well documented in the press and elsewhere. I think guys like Robin Rand and Jack Weinstein and those guys and Hyten and others, are solid and are going to pay attention to this.

On the DOE side, I think Frank Klotz has come a ways in terms of trying to introduce reforms to make their program management better, their cost estimation better, how they manage risk, all the things that come into play. I think we've had some enlightened leadership at the DNFSB in helping us work some of those problems, but I

think we can do more. I'd like the next NNSA administrator to take what Frank has done and really step out and start thinking about those parts of the Augustine-Mies report that do not require Congressional action, and there are a large number of those. Mac Thornberry did not like the report because it said to keep NNSA within DOE. Well, okay, that's a big deal.

MR. : He didn't like it because it said fold NNSA back into DOE.

MR. HARVEY: Back into DOE, right. Some of us would argue that it's already there.

(Laughter).

The NPR will provide an opportunity for us to renew our focus on the mission and on the people and on the infrastructure. I think we need to accelerate the plutonium and uranium infrastructure if at all possible. We're in such sad, sorry shape, the Y-12 plant could be shut down tomorrow for safety reasons, and that would take us out of a good part of the business.

Ed.

MR. Ifft: John, thank you. On creating a low-yield option for ballistic missiles, are you confident we could do that without a return to nuclear testing, which would have some pretty serious implications?

MR. HARVEY: You should not ask me that question; you should ask the lab directors. But if I were answering for them then I would say I am confident they can do it without testing. You're simply taking an existing warhead and creating a primary only version of it. You basically dud the secondary and that's not a nuclear test issue.

By the way, I think calls by Bob Monroe, and I love Bob, to basically hang everybody who worked on the Obama administration on nuclear weapons is a bit over the top. Moreover, his call to resume nuclear testing tomorrow, that kind of rhetoric is not designed to help us find our way on consensus on modernization. I think it's a real risk, to the degree that people take him seriously.

MR. HUESSY: John, with that I want to thank you again for, as usual, extraordinary remarks.

(Applause).

Thank you, everybody. Missile defense is Thursday with General Todorov and General Formica. I look forward to seeing you there.

Thank you.