"Role of the ICBM Force in 21st Century Deterrence"

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Major General Chambers: Thanks Justin. Some of you may think by the end of this panel that we are preachers of deterrence but, this is not church. So please come on down forward. We're in a big room. We'd like this to be a good conversation as we kick off with some remarks that we hope will spur thinking on a very timely topic. Not only in light of fiscal constraints, but in light of national policy discussions, 21st century deterrence is an important thing for us as Airmen to talk about. The role of the (Intercontinental Ballistic Missile) ICBM is particularly compelling for us as Airmen.

Let me set the scene for our discussion and then introduce General Klotz and Mr. Colby. They will provide some spurring remarks so that we can get a conversation going.

Certainly in our 21st century security environment, which is well described in the strategic guidance released by the President and the Secretary [of Defense] this past January, we find ourselves in this 21st century simultaneously conducting deterrence operations to prevent a power from considering harm against us; extending deterrence to protect allies and partners; and underwriting assurance guarantees to maintain security relationships and support non-proliferation. In a globalized and interconnected world where the nation state still lives and several states possess dangerous nuclear weapon capability, our deterrent forces act amidst an array of complex challenges.

To many audiences, the real effect of nuclear deterrence forces is difficult to describe. I will resort to a famous political scientist by the name of Robert Hartman for his words. Listen carefully to how he describes such forces. "For any given state, war is the exception not the rule. Consequently, states use their military power more frequently in the peaceful than in the forceful mode. When used forcefully the effects of military power are easy to identify. Force is a blunt instrument but it

can achieve decisive results if wielded properly. Used peacefully, military power is held at the ready and its exact inputs on political outcomes become more difficult to trace. The war-waging use of military power is akin to a powerful flood. It washes away all before it. The peaceful use of military power is akin to a gravitational field among large objects in space. It affects all motion that takes place but it produces its effects imperceptibly. Most of the time the effect of military power looks more like gravity than a flood."

This force, "akin to a gravitational field," is indeed the force produced by our nuclear deterrent. In particular, our ICBM force.

I've asked our panelists to discuss, in their words, the role of the ICBM in 21st century deterrence. As they are both defenders of deterrence, I don't expect we'll see much disagreement about the relevance of our nuclear forces. However, with growing fiscal pressure and the potential for further success in the realm of arms control, we will benefit from their particular individual perspectives, well studied, on the composition of our nuclear force structure – especially when it comes to making hard fiscal choices.

General Klotz is a longstanding advocate for a highly visible, homeland-based force to maintain strategic stability and prevent nuclear coercion. I expect he'll agree that, although primarily thought of as a responsive force, our on-alert ICBM force is also very survivable.

Mr. Colby, with Dr. James Acton, recently published an article on the needs of modernized U.S. nuclear forces and pursuit of additional arms control measures. In the article, he and Dr. Acton clearly supported retaining the capability to deliver "a devastating retaliatory strike under even the most stressing conditions." Also, they advocated for recapitalization of what he refers to as "the most survivable of its delivery systems -- the Ohio Class ballistic missile submarine" -- and called for a next generation nuclear-capable bomber.

For me, I view the role of the ICBM as a responsive homeland-based force which maintains strategic stability that supports conflict resolution below the nuclear threshold. It does this by imposing great cost on any would-be aggressor thereby denying any adversary a nuclear coercion option.

In short, the ICBM is stabilizing, lethal, responsive, survivable and highly credible. The ICBM weapon system is designed to be postured for responsiveness, to be on alert, ready

to respond, giving the President a timely option and increasing his decision-making time.

Additionally, silo-based ICBMs are the most reliable and inexpensive strategic system to operate and maintain. For example, in fiscal year 2011 the Air Force provided an ICBM capability to the nation for one-percent of the overall Air Force budget. That's not a lot of money for the overall global stability that this force provides America.

In closing, let me remind all of us that the time of the "one size fits" all deterrence model is in the past. Today's strategic deterrence and assurance commitments require a broad array of flexible and resilient capabilities to maintain the right synergistic mix to influence an adversary's decision calculus.

Before I open the floor to these esteemed panel members, just a few moments to continue the introduction of them.

General Klotz is a Senior Fellow for Strategic Studies and Arms Control at the Council for Foreign Relations. As the former commander of Air Force Global Strike Command, he was also the Vice Commander of Air Force Space Command. And, he has an extensive background in defense policy, arms control, nuclear and space issues, as well as treaty implementation.

Mr. Elbridge Colby is a Principal Analyst and Division Link for Global Strategic Affairs at the Center for Naval Analyses, a not-for-profit research and analysis organization. Mr. Colby focuses on strategic deterrence, nuclear weapons, and other related issues and advises a number of U.S. government entities.

Thank you, gentlemen, for taking the time to handle this timely topic. I will turn it over at this point to General Klotz. Thank you.

Lieutenant General (Ret) Klotz: Good morning ladies and gentlemen. I am absolutely delighted to join Bill [Major General Chambers] and Elbridge [Mr. Colby] to discuss a topic of enduring importance. I am also personally thrilled to see so many friends and colleagues in the audience today.

I am pleased that you decided to participate in this particular workshop, especially considering all the other very interesting presentations that were also scheduled for this same time slot.

At the recent transition ceremony for our Air Force Chief of Staff at Andrews Air Force Base, the Secretary of Defense, Leon

Panetta, described the nuclear enterprise as "an absolutely vital component of our national security." Your presence here this morning suggests that you agree with this assessment, and I look forward to joining Bill and Elbridge to engage in dialogue with you on this critically important topic.

But, before we do, I'd like to open with a few points to set the stage for the question and answer period that will follow.

You will all recall that in his widely publicized speech in April of 2009 in Prague President Obama stated that as long as nuclear weapons exist, the United States will maintain a safe, secure and effective arsenal, both to deter potential adversaries and to assure U.S. allies and our other security partners that they can count on America's security commitments.

Senior administration officials have reiterated this point many times since then. Likewise, the NATO Alliance endorsed similar language at two successive summit meetings, the most recent occurring in Chicago this past May.

As it turns out, nuclear weapons are likely to exist for a very long time to come. Despite occasional pronouncements in favor of total disarmament, the other nations that possess them show little inclination to reduce their stockpiles to zero, regardless of what the United States might want, might urge or might do unilaterally.

While the specific rationale varies from country to country, they each regard nuclear weapons as an essential component of their national security as they define it. In fact, several nations are currently pursuing substantial efforts to modernize, diversify and, in some cases, expand their existing nuclear forces.

If one accepts the premise that nuclear weapons remain an immutable fact of international life for the foreseeable future, the United States will need to be far more serious about the task of sustaining and modernizing its nuclear weapons capabilities than it has been over the past 20 years. And, far more serious than recent commentators would have us believe even now. What's sorely lacking in my view is -- one, a broad national consensus on what needs to be done; and two, constancy of purpose in actually doing it.

Since the end of the Cold War, the support for programs to modernize or replace existing capabilities has been virtually non-existent. Decades of underfunding have resulted in a nuclear weapons complex that has been variously described as decrepit in some places, as vividly described in Dana Priest's recent series

of excellent articles in the Washington Post. The weapons themselves, as well as the aircraft and the missiles that carry them, have grown rather long in the tooth. The youngest B-52 bomber, for example, is now 50 years old. In fact, Air Force Global Strike Command, we have the commander and command chief sitting in the front here, are this year celebrating the 60th Anniversary of the B-52. They have a nice little sticker which, if you stop by their booth -- this is a partly political announcement, they'll be happy to give you one.

The makings of a reasonable and broad-based consensus to reverse this worrisome trend emerged during the debate surrounding the New START Treaty in late 2010. That consensus, or more precisely that compromise, envisioned continued negotiations with the reductions or further reductions including for the first time tactical nuclear weapons and non-deployed weapons, while at the same time investing the resources required to keep the nation's nuclear weapons infrastructure and remaining forces up-to-date.

At the time, the Obama administration laid out a very ambitious spending profile to deal with the problems of aging infrastructure and forces. Some $88 billion was to be spent over 10 years to sustain the nuclear arsenal and modernize infrastructure. Another $125 billion was to be spent over the same period to sustain and lay the groundwork for replacing the existing triad of systems that actually carried the weapons. I don't need to remind this audience that the triad consists of manned nuclear capable bombers, land-based intercontinental ballistic missiles, and sea-based ballistic missiles or sea-launched ballistic missiles.

This consensus, or compromise, did not last long. Soon after New START was ratified, arguments against making these investments were voiced by some in Congress, on both sides of the aisle, as well as the think tank community and in the media. One recent widely publicized report, for instance, argues that the U.S. nuclear force should be reduced to about 900 weapons, half of which would be deployed; that the ICBM and tactical nuclear weapons should be eliminated; and that remaining forces should be postured in such a way that they could not conduct strikes for 24 to 72 hours.

Calls for such Draconian cuts to U.S. nuclear deterrence have so far apparently failed to gain traction in official policy circles. During this year's budget cycle, senior officials stated that the current administration remains committed to modernizing the infrastructure and the delivery systems that underpin nuclear deterrence.

That said, the pressure for continued reduction will most certainly continue to mount. Not so much as a matter of political philosophy but, as a function of budget realities.

In January of this year, the Obama administration hinted as much, stating that it is possible that our deterrence goal can be achieved with a smaller nuclear force which would reduce the number of nuclear weapons in our inventory.

The subsequent fiscal 2013 budget proposal deferred the starting date for replacing the existing fleet of Ohio Class ballistic missile submarines by two years; and put construction of a plutonium lab at Los Alamos on hold. Even more far-reaching proposals for cuts have come from some members of Congress as well as public policy groups, ostensibly as a means of saving money.

In this environment, support for the existing triad of nuclear forces will no doubt come under increasing pressure. The Obama administration's 2010 Nuclear Posture Review, for example, argued in favor of retaining all three legs as the best means of maintaining strategic stability at a reasonable cost while hedging against potential technical problems or vulnerabilities.

But, in the very next sentence, that same nuclear posture report says, and I quote, "Each leg of the triad has advantages that warrant retaining all three legs at this stage of reduction."

The unspoken presumption apparently is that in a future round of negotiations, the triad itself might be up for grabs.

Of the three legs of the triad, the ICBM force might ultimately be the most vulnerable to future budget cuts, ironically, even though it is the least expensive to operate and maintain. As noted earlier, several advocates of deep reductions have called for its total elimination, claiming that the nation's fleet of highly survivable and highly capable missile launching submarines is sufficient for deterrence in today's international environment, and that the ICBM's inherent ability to be launched within a matter of minutes makes it an inherently destabilizing weapon in a crisis.

Others have argued however, that the ICBM is actually essential to deterrence and strategic stability. The current force of 450 missiles is based in five different states, spread out over a total area roughly the size of Pennsylvania. Successfully attacking this many points at some future time would be an insurmountably complex undertaking for any would-be adversary, both now and in the foreseeable future.

As the former Chief of Staff of the Air Force General Larry Welch has observed, "There is no conceivable technological breakthrough or operational innovation that could put several hundred single warhead ICBMs at risk." Thus he concludes, "That makes the ICBM the most stabilizing leg of the triad today."

However, if the ICBM were eliminated, the number of strategic targets an adversary would have to attack to seriously undermine or even destroy the U.S. nuclear deterrent force would be reduced from over 500 to perhaps a dozen or so.

While the submarine force might still be relatively invulnerable when at sea, the targeting problem facing an adversary will be far less complicated or perceived as such, which is just as bad, when it comes to deterring attack or assuring allies.

So, why in heaven's name would we ever want to do that? Especially with the very real possibility that there will be even more nations armed with nuclear-capable missiles that can reach the United States within the next 10 to 15 years?

The cost of sustaining and modernizing all three legs of the triad, including eventually replacing existing Minuteman III ICBMs at the end of its service life, will be daunting. And, in an age of budget austerity, it's understandable that every defense program will be evaluated in terms of its affordability and its cost effectiveness. Yet, even if the overall size of the U.S. deterrent force is reduced, maintaining a mix of complementary capabilities including the ICBM remains the safest, most prudent course of action.

The most pressing task, however, is to work toward a broad national consensus on the steps that need to be taken to maintain a safe, secure and effective nuclear arsenal in the years ahead, and then to demonstrate real constancy of purpose in achieving it.

Thank you very much.

Mr. Colby: Good morning ladies and gentlemen. Thank you Major General Chambers, the A-10 staff and the Air Force Association. It is a distinct honor and privilege to be on a panel with two such distinguished general officers. In fact, I'm thinking that the conference organizers may have thought to give some comic relief [to the panel], although I'm not very funny. Anyway, I will try to live up to the very high standard of my two predecessors, but hope you won't hold me to it.

I also should point out, in response to General Chambers' point about my joint OpEd with James Acton, I tried hard to convince him of the wisdom of modernizing the ICBM but failed to do so. Hopefully, after this session and the questions and discussion I'll be able to be more successful in the future.

We've been asked to discuss the role of the ICBM in the 21st century environment on this panel. I have to say that I find essentially nothing to disagree with in the remarks of either General. With General Chambers, I think it's absolutely essential to emphasize the shaping of more implicit aspects of deterrence, to recognize that imaginary wars, if you will, are fought far more often than we might think and are left un-fought in the real world because of the caution induced by nuclear weapons.

With General Klotz, I think it's absolutely vital to build and sustain an enduring national consensus on maintaining, modernizing and sustaining a formidable and flexible nuclear deterrent. Nuclear weapons remain the "best bang for your buck" as they did in Eisenhower's day.

I also don't differ with General Klotz's advice to avoid putting too much weight on the SSBN force. While I do think that the SSBN force has unique value and attributes, we would be unwise to put all of our eggs in one basket. In other words, let's surely go ahead, swallow the bump in cost and maintain an effective modern triad in the foreseeable future.

So, what I'd like to actually do in my remarks is to turn forward, out into the 21st century, and ask a question. What can the ICBM offer to the U.S. strategic deterrent posture going forward?

This is an important question because the issue that's going to be increasingly debated is not whether to keep the Minuteman III ICBM, but rather whether it's worth recapitalizing the ICBM force. The most intelligent critics of the ICBM aren't going to deny that it has a stabilizing value, that having 400-plus warhead sinks helps deter a massive first strike. Rather, they are going to argue that, in an era of genuine austerity, the marginal dollar placed on the ICBM won't yield the value that a dollar would yield if it's placed against the F-35 or ballistic missile defense or another attack submarine, let alone more able to tanks or Blackhawk helicopters or expeditionary fighting vehicles. In other words, the argument won't be absolute. It will be relevant that the United States would be smarter investing its scarce resources towards better capabilities.

In this context, I think it's very important that ICBM professionals and defenders, such as me, consider how to strengthen the appeal of the ICBM. It seems to me that this can be done either by making the ICBM cheaper, even though it's already pretty cheap, and/or by making it more capable, broadly defined.

On the first point, I've little doubt the Air Force is already making strenuous efforts to make the ICBM more affordable, as the Navy is with the next generation SSBN. This effort is, if not the good, then at least the virtue of necessity. I just hope it won't diminish the relevant capabilities of either system.

The other option, that is increasing the ICBM's capability, may be more promising. This way is the way of thinking about methods of making the ICBM more a contributor to the overall deterrent effect of the U.S. strategic force. Let me elaborate on this a bit.

The United State's nuclear force of today gets strong marks against a range of appropriate attributes of an effective deterrent, including that of an effective extended deterrent, which is a little bit different. But, it doesn't get perfect marks. Moreover, U.S. forces' marks aren't static. They are determined by an array of internal and external factors ranging from the basic maintenance and upkeep of the system to the defense capabilities of advanced potential adversaries like Russia and China. Some of these factors, including in the external realm, could over time lead to a decline in the quality of the U.S. force against these advisories if they aren't addressed. Especially when we consider that the recapitalized U.S. nuclear force will be expected to operate well towards the end of the 21st century.

For instance, the U.S. force as a whole is currently highly survivable, even though the silo-based U.S. ICBMs are to some degree vulnerable to a minimally plausible if not vanishingly plausible large-scale nuclear assault. But it's possible that over the longer term the survivability of U.S. submarines could become more of an issue than it already is. Similarly, U.S. fixed site ICBM siloes could possibly become more vulnerable to non-nuclear attack under certain geopolitical and technological trajectories.

In both of these cases, there will be a greater premium on the survivability of the triad as a whole and naturally on the ICBM force. If the boomers offer even a diminished level of survivability, then a more survivable ICBM will be all the more attractive as part of a balanced force. Making the ICBM

enduringly survivable would be particularly attractive as it would provide U.S. decision-makers with more time and options in considering ICBM usage thus, increasing its salience and attractiveness in the overall force. Exploring options, therefore, such as mobile basing thus might make some sense.

Or, take another related possibility. U.S. forces are currently highly controllable but, advances in cyber or other technical capabilities could make this less assured. The ICBM has a particular advantage in its controllability, especially if it's more survivable. An ICBM could become the nuclear delivery means of choice if connectivity with other deployed legs of the triad become less assured. Looking into advanced communications options that ensure connectivity and marrying that connectivity with an enduring survivability could make the ICBM especially attractive.

Or, consider a third option. The ICBM is often not as irrelevant because of overflight concerns. What if the ICBM could, for range extension or shaping flight trajectories, obviate at least some of these problems? This also would add considerably to the attractiveness of the ICBM.

Needless to say, serious tradeoffs about these possibilities need to take place in the context of the forum by the full range of information, classified and unclassified. But, a basic point can be stated in the open.

The recommendation I'm trying to make is that when thinking about the future ICBM, we should consider ways of -- of course in an economical way -- making it contribute more to the overall attributes of the future strategic deterrent. Stability and other current attributes of the current ICBM force are extremely important. I'm not at all denying that. But, if a future ICBM could do more than today's to help the U.S. deterrent posture, especially if technological or geopolitical conditions change, which is possible and in some ways probable given the experience you just heard. If the ICBM can add to the discrimination, to the survivability, to the controllability and so forth of the U.S. force of the future, and not just for 2020 but of 2050 or 2060, it's more likely to survive the budget ax that looks likely to come down and to survive it in better form.

Of course, this kind of practical thinking about nuclear weapons is rare today. It's vaguely embarrassing to many and outright appalling to some. But, this is nonsense. The vast bulk of people thinking seriously about the future of our country's security, recognizing we'll need nuclear weapons for quite a long time, whatever our ultimate goal is. If that's the case, and it certainly is in my view, then we need to think

seriously about how to make nuclear deterrence work and that involves thinking about how to use nuclear weapons.

Nuclear deterrence works because the other guy thinks it's sufficiently plausible that we'll use nuclear weapons and he concludes the advantages of the risk just aren't worth it. So, we can't just take things on faith. Things like the SSBN will always be survivable. Or, the current force has enough discrimination and flexibility. That doesn't mean that we need to go for every whiz-bang advance or ignore international stability and diplomatic implications. Far from it, but it does mean we have to weigh very heavily in the balance nuclear weapons' practical utility.

In sum, the more the ICBM contributes to the practical deterrent effects of the U.S. nuclear posture, the better off we will all be. Thank you very much.

Major General Chambers: Wow. That is some wonderful thinking on the part of two marvelous experts. Some of you have been considering questions to ask so let me get right to it.

I'll ask this question of General Klotz. Can the U.S. adversary deter by holding targets at risk with conventional weapons, especially in light of gains in precision targeting?

Lieutenant General (Ret) Klotz: That's a very good question. It's one that is very much part of the debate on to what extent the U.S. should invest in capabilities to develop a conventional prompt global strike system.

My own sense, however, is that while conventional prompt global strike may be an important capability for the United States military to be able to present to national leadership in a crisis, conventional capabilities do not substitute for nuclear capabilities. A lot of it has to do with sort of the psychological dimension that's so important to deterrence. The psychological dimension derives from the fact that use of nuclear weapons, any use of nuclear weapons, would be such an awful, horrific event, that those nations that might be contemplating engaging in military actions that could conceivably escalate to nuclear weapons or even using nuclear weapons to attempt to force or coerce United States or allies would be deterred from doing so because of the prospect of gain from their actions would be so overwhelmingly outweighed by the potential use of nuclear weapons.

Major General Chambers: You guys did a fabulous job in your initial remarks. A lot of questions touch on what you guys were talking about. So, a great job in getting us started.

In a post-Cold War, multi-polar world where we can envision the U.S. using nuclear weapons against countries looking forward in South Asia or the Middle East, can we ignore the geographic diminishing value of the ICBM?

Mr. Colby: As I understand it, the question is that in the future context in which we think we might face contingencies in the sort of South Asia and Middle Eastern kind of context, the geographic limits of the ICBM, how we address that?

It's a good question and obviously in the very near term, the most plausible contingencies of the United States would be likely to find itself involved in things happening in the Middle East. But, I think this gets at a broader question which is very relevant to the ICBM which is how plausible is major war among the great powers? Is that still a concern of ours? My answer and a big reason why I think the ICBM is still so important, is that it is. I think this gets to something Major General Chambers mentioned which is the kind of gravitational pull of deterrence. Sometimes we don't pick up on it. We don't perceive it. But, countries are thinking about the plausibility, even in the back of their head. Foreign leaderships may think about the possibility of taking steps that could lead to major war on a regular basis, but are often induced away from doing so by the ICBM. This means that fundamentally Russia and China are still the most major, the principal security concerns of the United States. Not because war is likely with them. God forbid it could happen. But, because if it did happen, and it's not impossible, it would be the most devastating. So even if the ICBM has range limitations, the prospect of contingencies with Iran, Pakistan, are very concerning, in some ways quite frightening, but if the ICBM can't match every possible contingency, that doesn't mean that we should get rid of it, quite the contrary.

General Klotz mentioned the Dana Priest article which had a lot of great reporting, but it had a really kind of revealing and very frustrating remark. She said that the U.S. military had moved away from nuclear deterrence and high tech forces in general to a reliance more on special operations forces and low-intensity conflict-styled effects. It seems to me, this was an amazing misunderstanding of what's happening and what is really going on in the world, which is that the ICBM and the nuclear force and high-end capabilities remain relevant. They factor into decisions of foreign governments in Beijing, Moscow, and elsewhere and also with our allies on a regular basis, especially when you think over the long term.

I guess the simple point, the basic point, I'd like to make is that even if the ICBM or any military instrument or any element of the triad is not relevant to every contingency we might face, it doesn't detract from its great value, and in other contexts that might actually be more important.

Major General Chambers: After over 65 years of nuclear weaponry -- and I think both panelists can handle this one -- are we not due for a paradigm change in weapons or weapons delivery? And, what do we think such a future change is likely to be?

Lieutenant General (Ret) Klotz: I'll take it from a policy perspective and let Elbridge talk more about the technical possibilities because as you will recall his comments he provided some very interesting and useful thoughts along those lines.

From the policy perspective, I'm often struck by those comments from some elements that basically say there has been little change in how we've approached nuclear weapons even though the Cold War ended some 20 years ago. I think the facts belie that if you just take a look at the reduction in the number of delivery systems. When I came into the missile business, we had 1,054 missiles and hundreds of bombers. We've already come down significantly on that. The Department of Energy and the National Nuclear Security Administration just recently made public the size of the U.S. total nuclear weapons stockpile. We see it coming down from 30-some-odd thousand or 40-some-odd thousand down to around 5,000 nuclear weapons. That's a significant shift in terms of total numbers, in terms of total capabilities and in terms of policy where nuclear deterrence -- which may have held center stage during the Cold War -- is still on stage but has been moved over to the wings. We have begun to make, and have made, very serious and significant shifts in terms of the role of nuclear deterrence and our role in military posture in order to deal with the world as it exists.

Having said that, I think there are still a number of nations out there that consider nuclear weapons to be an important element of their own national security policy. It is conceivable that in some future crisis they would use the fact that they had nuclear weapons to threaten or coerce allies that we have a responsibility for providing a security umbrella to. The very fact that we have nuclear weapons and we extend that deterrence to those nations serves as one of the most important non-proliferation measure that we could possibly imagine, so that they don't feel it necessary to develop capabilities of their own to deal with regional powers that have those capabilities.

Mr. Colby: I agree fully with General Klotz. I'd just add two short things.

One, the situation has changed but, fundamentally I would say we don't want to have a fundamental change in our paradigm of thinking about nuclear deterrence. Admiral Meeks put this quite well, nuclear deterrence works. We've gone 65 years without a great power war of any kind. We survived the Soviet Union and saw it collapse essentially because of sort of the caution inducing and in some sense terrifying implications of nuclear deterrence. That's not something we want to give up. We don't want to go back to a world of conventional incremental advantage and conventional wars. I think a lot of people talk about moving beyond nuclear deterrence. Really what they're talking about is going back to the past in my view.

That said, I do think it's important to think about how we adapt the nuclear posture to a situation and the perceptions we see. I think that General Klotz mentioned the importance of perception. I think our force could have more flexibility, more discrimination, and more control. These are things that will become more relevant as the geopolitical situation develops. For instance if you look at Asia, we have very significant changes in the strategic balance going forward. A relatively inflexible -- I say relatively because the force does have a lot of elements of flexibility – but a relatively inflexible force that might emerge later in the coming decades is one I think we want to avoid.

I think it is very important to think about our capabilities, whether we call them new weapons or not, that doesn't matter to me. I think maintaining the same fundamental approach to deterrence, which is to say, putting the fear into your opponent such that you don't ever have to go to war but doing it in a way with the appropriate tools that make sense to achieve that objective.

Major General Chambers: What do you view as the role of the ICBM in deterrence against terrorism or non-nation states?

Lieutenant General (Ret) Klotz: Again, it's a question that's often raised sometimes by people who don't support the ICBM and say that it's irrelevant. The point is the ICBM is not designed necessarily to deter terrorists, although it may deter state sponsors of terrorism.

The point is that we develop different types of military capabilities to deal with different types of problems that we're likely to confront as a nation or as a leader of allies. So, we ought to ask the ICBM to do what the ICBM does, which is to deter the potential of a nuclear attack against the United States or

its allies, or for other states to engage in military actions that might ultimately escalate to that level.

Major General Chambers: From a nuclear safety and surety perspective, how long can we operate our current ICBMs if we don't modernize and sustain properly?

Mr. Colby: The Airmen of Air Force Global Strike Command, 23,000 strong, as well as Airmen in the rest of the Air Force and the Sailors, Soldiers, Marines and Coast Guard, have a marvelous ability through their intelligence, their energy, their enthusiasm and their patriotism to make the systems which we provide them work when they need to work. I would never underestimate the ingenuity of our Airmen or of the industrial partners who have gone through the process of helping us sustain and maintain the existing forces over the last several decades.

But, goodness gracious, at some point even the most well maintained aircraft or missile or warhead runs out of life as just a simple result of what happens to materials. They fatigue over a long period of time.

I think in many respects we are overdue for the process of recapitalizing our manned bomber force as well as our ICBM force. As I indicated in my remarks, it's time we decide for sure what it is we want to do and then get about doing it.

Moderator: General Chambers, General Klotz, Mr. Colby, thank you so much for spending your time with us today. We appreciate it.

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