

42319 Air Force Association Mitchell Institute for Aerospace Studies, Reserve Officers Association, and National Defense Industrial Association Capitol Hill Forum with Retired Air Force Major General Roger Burg, President of O'Malley Burg Consulting; and Retired Air Force Major General Donald Alston, President of Alston Strategic Consulting, on "The Ground Based Strategic Deterrent Rationale and Strategic Nuclear Requirements"

(For additional information on NDIA/AFA/ROA seminars contact Peter Huessy at phuessy@afa.org).

MR. PETER HUESSY: Good morning, everybody. My name is Peter Huessy, and on behalf of the Mitchell Institute for Aerospace Studies, NDIA and ROA, I want to welcome you to this, our 38th year of putting on these breakfast seminars here in Washington, D.C. We have two wonderful speakers today, General Roger Burg and General Don Alston.

Roger is the former commander of the 20th Air Force. He also was director of nuclear policy at the National Security Council, and now chairman of the board of Material Intellect, which is an IT startup.

Don Alston, retire major general, is adjunct professor in the School of Strategic Force Studies, also affiliated with the Air Force Institute of Technology, and a senior fellow at the Potomac Foundation. He is also the head of Alston Strategic Consulting LLC.

I want to thank our friends here that are foreign embassy representatives. I also want to make a note that on the 26th of April we're having two former commanders of STRATCOM. General Chilton and General Kehler will be speaking. My boss, General Deptula, will be doing the introductions.

On May 3rd we have our next Space breakfast. Jamie Morin was going to be speaking on May 3rd. He is now pushed off until -- I have him on the new schedule, I believe, in June. And then on the 30th of April my friend Jim Miller and also my friend Rebeccah Heinrichs, are going to be talking about combined nuclear deterrence and missile defense issues in Europe, in NATO and East Asia.

With that, I want to thank you all for being here, particularly our sponsors and friends. I want to also say hello to my friend Frank Rose, who is head of the Brookings Institution's Nuclear Program. He is also going to be a speaker in our series, has been a speaker before for many years. I also want to welcome some people that this is their first time here. You're all welcome, please come back.

With that, would you give a real warm welcome to my friend and colleague, Major General retired Roger Burg?

(Applause).

GEN. ROGER BURG: This is so interesting. I was reflecting on a day in 1987, I think it was May. I was the aide to the commander of Strategic Air Command and I had to coordinate with this young man named Peter Huessy to bring General Chain to the Capitol Hill Club to speak at a breakfast. Let's just say that Roger was a little nervous that morning. I hadn't been on the Hill for quite a while.

But Peter, it's very good to see you again and thank you for the opportunity to get back to the Capitol Hill Club so many years later. Now, I won't do math in public to calculate how many years that has been, but it has been a while. I'd also like to thank the Air Force Association and the Mitchell Institute for organizing this series. For those of us who care a lot about specific issues, including nuclear deterrence, it's important that we have a discussion and that we go public with what we believe to be true, and this is a great forum in order to do that.

I still think of 1981 when the Air Force Association said, would you like to become a life member? I said, how much? And they said \$100.

Second Lieutenants didn't make a lot of money back then, so you could actually schedule the payments at \$25 a quarter so you could afford to become a member of the Air Force Association. It's probably the best value I've ever gotten for \$100. We'll see how that goes.

But it's also really nice to come back to Washington and see some of you who I've worked with before who, sadly, are still working here.

(Laughter).

It's nice to see you, but oh man you've got to get outside the Beltway sometime. So Brian, Jim, Andy, Kathy, call me and come to San Antonio some time. There's a lot to be seen outside the Beltway.

You wanted like 10 minutes, right? That should be fine. I will do my best.

Don and I have a relationship. I come into an organization and I do a bunch of splashy, flashy things, and then I leave it. And Don comes in and fixes all the problems that I have left behind, and he's actually quite good at it. So I'll do that same thing today. Is that okay, Don?

I'm going to focus on a concept. I was a young captain and I was on the USS Michigan in 1988. They were going through day-trials before a 70-day deployment. We were running around the submarine and having a great time learning about nuclear operations in our sister service.

I was in the captain's stateroom, and that's a rather generous -- let's say it was a reasonable size closet with a bed that folded down to become a desk. But one thing I noticed was a little sign that the captain had put above the doorway, which exited onto the command floor for the submarine. It said, "Conclusions drawn from assumptions are not facts."

I thought, that is really interesting, I'd better write that down. And so I did and thought, if I was the captain of a nuclear submarine, why would I put that above the door when I'm running out to the ops floor to see what's going on? I thought, this guy is pretty insightful, because when you walk onto an ops floor you're going to be inundated with information, and it's going to quickly go to conclusions. What should you do, captain?

And it's hard to pull yourself back and say, but what assumptions did I make? What assumptions did my staff make before they told me what these facts are? And the answer is, you'll have to research that because the conclusions end up being totally dependent upon the assumptions. That's what I want to talk about.

So, what conclusions have you heard lately? I've seen a few in the paper. We can't afford to modernize the entire triad. That's a conclusion.

What assumptions is that based on? Is there really a calculation of affordability? Is there really an understanding of what purpose the triad serves? Why is it there? Why have we developed this concept over 40 years?

We can't afford to modernize the ICBM force. It's going to cost \$85 billion to \$100 billion, and we can't afford it. That's a conclusion.

But to the assumptions, I guess you have to assume that deterrence could be safely supported by less force structure. Deterrence could be safely supported by fewer weapons systems, especially alert weapons systems. Deterrence could be safely supported by lower force and lower alert levels. Is that true? I think that is a piece of the discussion that is quite open for debate.

To me, all these assumptions suffer from the same fatal flaw, which is we assume that the only vote that matters in a deterrence discussion is ours. That's an assumption that you have to make. But the other person, the other entity, the opponent, the competitor, has a huge part of the discussion in a deterrence equation.

What do they value? What do they believe in? What do they want you to do? What do you want them not to do? So let's just rest on that concept, that the other competitor gets to be a big part of the deterrence question.

So what about affordability? The latest estimates I've seen, \$85 to \$100 billion to field and operate the Ground-Based Strategic Deterrent for 40 years. That's a lot of money, more money than I'll ever see, but what is it?

It's 40 years of deterrent value for \$100 billion. So it's \$2.3 - \$2.4 billion per year, if you amortize that cost over the life of the system. So, what else do we spend \$2 billion on?

How would we find that money. It didn't take me very long on the Internet -- yes, I do get on the Internet -- Apple will spend \$2 billion this year on new programming for its entertainment side, \$2. Billion. Actors cost a lot of money. Directors cost even more.

The Dallas Cowboys are worth \$4.2 billion as a sports franchise. Okay, that pays for two years of GBSD. Or, we could go to maybe a slightly more successful franchise. The Patriots are worth \$3.8 billion -- more successful, not as valuable -- the story of a (space man's ?) life. Sorry, Jim, couldn't resist.

Okay, I'm going to make it a little more personal. What amount do Americans spend on cosmetics? Any guesses? The latest estimate is \$445 billion per year.

So what's affordable and what's not affordable is a question of what you choose to afford, not what the raw cost is. It's a choice. What benefit do I get? Obviously, we get a great deal of benefit from cosmetics. We're willing to spend a lot of money on that. The volumizing shampoo hasn't really worked for me.

(Laughter).

With a \$19 trillion GDP what can you choose to afford? You probably can choose to afford a \$680 billion defense budget. I was recently with some retired Russian general officers from the SRF, and we made the point, you really want to compete with your \$2 trillion economy?

The latest estimate is the Russians spent \$44 billion on their defense infrastructure last year. But they're modernizing their ICBMs, they're building a new bomber, they're building new submarines. Maybe they're just better at it -- or cheaper anyway.

China, with a \$12 trillion GDP has chosen to invest \$150 billion of that in their national security architecture, not a bad investment. So affordability is a question. I can always say you can't afford it. The reason you would say that is you choose not to, because it's not about the cost.

But let's talk about a few other things. I'm going to talk about, why do we have an ICBM force? In my view it's principally to deter Russia. It has a significant value also for the China equation, but it's principally to deter Russia. Russia is the only country that thinks of itself as our strategic equal on the nuclear side.

China is building rapidly to get to that level, but I don't want to try to make the ICBM the answer to every question. I don't know that it has huge value as a deterrent against Iran. I don't know that it has huge value as a deterrent against North Korea. But

it's still there.

So, just a couple minutes on deterrence theory. A very historic debate, minimal deterrent club, I just need 100 weapons to destroy 100 cities and I can deter anyone. Really, is that what it takes? Versus, I need to be able to threaten things that the opponent values most and threaten them in a credible way. You need Keith Payne to come up and talk to you about deterrence, because he'll be far better at it than I.

I worked for a young man named Colin Powell when I was younger, and he said, deterrence is really just kind of a school yard concept. In his view, deterrence was about kicking someone's ass. He said, it's all about kicking someone's ass. You more you look like you can, the less often you'll be called on to prove it. It makes sense to me, and I didn't have to read any Thomas Schelling to get there.

Specifically to the ICBM, why is it such an essential part of the triad? I think many of you have read the paper that AFA and the Mitchell Institute helped me put out about a year and a half ago about the safety of the ICBM, the stabilizing factors of the ICBM, the security of the ICBM force based on U.S. territory. If you want to attack it, you have to attack the United States. It can't be really hindered significantly by conventional weapons, so you have to attack it with nuclear weapons. It's pretty clear to a national decision maker that you're under attack and it's very serious.

That's a very nice feature. It's a scary feature, I admit that, but it's a very nice feature rather than well, we just can't talk to the USS Pennsylvania today. I don't know what's wrong. It's disappeared. Am I under attack?

When I moved to Texas nine years ago I came across a bit of Texas history that I didn't understand very well. The flag, very famous, flew at the Alamo. There was a cannon at the Alamo and the Texians had captured this cannon and the Mexican authorities said, we want the cannon back.

So, the Texians put this flag out that had a little depiction of the cannon on it and said, "Come and Take It." That's kind of what you have to do with the ICBM force. You have to come and take it.

One other reason I think we absolutely have to retain an ICBM force, and I don't hear it discussed very much, is the ICBM force in its current configuration with a relatively moderate number of missiles and weapons on alert -- I can get into the discussion of numbers, but I don't know that you could find a significant different between 400, 450, 500, 350. It's a lot different from 1,000, but it's hard to draw that line. But the ICBM in its current deployment mode allows the bomber and the submarine to do what they do best.

Why do I say that? The bomber is the most flexible part of your deterrent, but it has become one of the most important parts of your conventional force. We love the impact of bombers in a conventional air campaign. We used to say, how many bombers

do we have to send against a single target?

Well, in the World War II days it was hundreds against a single target. It was bombers per sortie, sorties per target. It's not that way anymore. With your advanced weapons systems, you're in a targets per sortie mode with every bomber that you fly. It's one of the most efficient delivery vehicles you can ever imagine.

But if I don't have ICBMs, what do I have to do with my bomber force? I have to put it back on alert. I need alert weapons. I need weapons that can actually be available day-to-day. Some of us remember bombers on alert.

I drove onto Ellsworth Air Force Base in 1979 past the Christmas Tree where 15 young security forces members were guarding eight fully loaded B-52s, protected by a three-strand barbed wire fence. Anybody concerned about that today? That'd be really hard to do.

I work with Global Strike Command. How do you defend a bomber alert area from drones? That's a pretty big challenge. Submarines operate as efficiently as they can right now because you can keep one on patrol in its targeting area while another one is transiting back and forth to its support base. Two have to be in position to be refit and ready to go back out, so you need four submarines to maintain one in a patrol area with alert weapons.

That's a pretty efficient way to go. But if I don't have ICBMs, what do I have to do? I have to surge more submarines forward. Now I have changed the cost and crewing requirements for the submarine. I don't think the Navy wants to do that. Those are things that become very different in affordability.

I'm going to close now by one last affordability question. In 2006 General Welch was given the task of evaluating the ICBM, bomber and submarine forces from an affordability perspective. He had to write a big report.

So, he called the director at SSP and me and said, I need all your numbers. I need them straight-forward and I need them in two weeks. We promptly reported in with our slides, and it was very instructive when you put the slides up side-by-side.

General Welch leaned over to me and said, Roger, look at that. That is amazing. The ICBM cost is roughly equivalent to the SSBN/SLBM cost. I was a little shocked, and said, what numbers are you comparing?

He said, look at this number and look at this. I said, ahh. I said, you're right, those two costs are roughly equivalent. But, look at the title of the slide. It was the FYDP cost of the ICBM force, for six years, and the annual cost of the SLBM force.

So, that's the rough order of overall cost equivalence. It is five or six to one. That to me makes a very significant point. I don't want to have to spend twice as much

on submarines. So, conclusions based on assumptions are not facts.

One day not too long ago, Jesus was wandering through Heaven and he came across St. Peter at the Pearly Gates. St. Peter had had a long day. St. Peter's job is to evaluate souls coming to Heaven and see if they're in the good book. If they are, bells ring and you enter Heaven. If they're not, he sends them downstairs.

So Jesus approached St. Peter, and St. Peter said, Jesus, would you mind manning the gate for just a little while, because I'm really tired. It has been a long day. A lot of souls have been processed today.

Jesus said, sure, what do you have to do? He said, a soul will come to the Pearly Gates and they will tell you their name. You look in the good book and if their name is in the good book you open the gates and let them in. If they're not, you send them downstairs.

Jesus said, I think I can handle it, go take a break. Get a cup of coffee. Jesus is processing souls and sending souls downstairs, and this old man comes up to the gate. This old man approaches the gate and Jesus says, sir, can I have your name? The old man says, I don't remember my name.

And Jesus said, Peter did not prepare me for this. What do I do? Let me see if I can find out.

Do you remember where you were from? Where did you live on Earth. The old man thought and thought, and said, it was close to some water. I think it was a place they called the Mediterranean.

Jesus said, I'm kind of familiar with that part of the Earth. Do you remember what you did? What was your profession?

The old man thought and thought and said, you know, I worked with wood. I think I was a carpenter. Jesus is pretty interested.

Well, was there anything significant about your life that people would find notable? The old man looked at Jesus and he said, you know, not about me but I had a son and when he came to life people said it was a miracle.

Jesus is getting very interested right now, and he looks at the old man, looks him in the eye, and says, dad? The old man looks at Jesus, Pinocchio?

(Laughter).

Conclusions drawn from assumptions are not facts. You can afford the ICBM force if you choose to, and it is an essential part of your nuclear deterrent for the future.

Thank you very much.

(Applause).

GEN. DONALD ALSTON: I've got to tell you, when I think of good friend Roger and myself, I actually see us as he's the deliberate thoughtful analytical guy, and I'm the grab-ass guy. But today the roles are different, so I'm going to try something I've never tried before, and that is using this technology that frightens me. I was reading some stuff in the paper yesterday on the way home, and had to change this stuff last night because of the environment I was walking into. Some of the contemporary quotes I worked into this a bit, and I felt better after I did that

So, Peter, thanks for letting me be a part of this. I never got to do this when I was 20th Air Force commander. The couple of times Peter invited me, several times, but it seemed like every time he invited me the open slot was like the week after Frank Klotz, and I just didn't see the percentage in following my boss here, and how was I going to top the Rhodes scholar? But now we've found a way to do this because I'm totally unencumbered as a rescuer of donkeys.

I appreciate the opportunity to be with you this morning to talk about our dependency on nuclear weapons to deter existential threats, assure allies, dissuade potential foes, how they cast an undeniably long geopolitical shadow over international relations, and specifically to provide some thoughts on our current and future nuclear force structure, with a special emphasis on the role of the ICBM. Traveling here yesterday and reading the Bulletin of Atomic Scientists and a couple of other outlets regarding all that's wrong with U.S. nuclear strategy, I thought I was being transported back in time to my last assignment in Washington.

April 2009 was an eventful month for me. I was just six months into my new job as the first A-10 on the Air Staff. I was the two-star point man for the Air Force regarding the New START Treaty and what turned out to be the 2010 Nuclear Posture Review.

I want to take you back to that time to walk you through how I saw the journey that led to today's nuclear force structure. I think this little bit of background will help us look ahead, because it's very possible we're going to relive some of this.

Ten years ago this month President Obama made his famous Prague speech where he voiced America's commitment to seek the peace and security of a world without nuclear weapons. Work began immediately on the near-term means to work towards that commitment, and specifically with the Nuclear Posture Review and the New START Treaty. For those hoping for monumental reductions, why not be optimistic?

Some were saying nuclear weapons were not relevant to meeting national security threats in the 21st century. The prime nuclear challenger, Russia, was in economic crisis, driven principally by a 70 percent reduction in the price of crude oil. And the White

House, the Senate and the House were all led by the same political party. Reset with Russia was on the horizon.

Two or three weeks following the president's Prague speech Dr. John Hamre, the CEO of the Center for Strategic and International Studies, invited me to a nuclear silverback dinner. I love that name, nuclear silverbacks: strong, smart, on the verge of extinction.

(Laughter).

I hope not. God, Heaven help us. It was a gathering of the nuclear illuminati in Washington, D.C. It was very gracious and thoughtful of Dr. Hamre to reach out to me as I was the senior, if not only, nuclear guy on the Air Staff, as I often thought I was. Well, I was second to Lieutenant General Klotz at least, but he had a day job.

After an exquisite dinner we had two speakers, both with significant executive branch responsibilities. The first speaker described the NPR and New START Treaty process. First we get the strategy right, and then the force structure to achieve that strategy will follow. I said, man, that makes sense.

Then the next speaker got up and said, and we'll give you until about June and then we'll tell you what the force structure will be, and you can back in the strategy. In other words, develop a strategy that works with smaller numbers of nuclear weapons and step on it. At the very first organizing meeting, before I had even taken my seat, as we were starting to work these two big projects, a smiling colleague asked me how low the Air Force could go?

I didn't realize that 240 submarine-launched ballistic missile launch tubes had not only been established, but that the secure second-strike Navy force structure was inviolate, and the remainder of the balance -- whatever it would be -- would be paid by the Air Force. This was weeks before the nuclear silverback dinner, but I smiled and I said, call me silly but I thought we might work strategy first. I thought I was so clever.

So the Air Force was the bill payer. The bomber leg hadn't had significant quantity for decades, so there wasn't going to be much reduction found there. The 21 B-2s were certainly untouchable.

The Air Force had actually proposed to get rid of two dozen additional B-52s, reducing that force to about 54 airframes, until the Congress mandated we retain 76, which was actually good news for me, as I was leading our recovery effort from our epic enterprise failure and we could use that additional force structure to rebuild bomber nuclear mission focus and expertise. We decided to standup an additional B-52 squadron at Minot and fly those additional bombers.

So, the only place to get additional force structure reductions was to go after what I call the first strike deterrent, the ICBM force. Surely we can get this job done with

fewer ICBMs. I had some concerns. The ICBM force was never intended to be a boutique-level capability.

We looked at replacing nuclear warheads on ICBMs with conventional warheads, conventional prompt global strike. Personally, I'm not a fan of bringing this capability into Minuteman launch facilities. But we ran the numbers, for a little and for a lot. We could not get by the ambiguity problem that goes like this.

Is that a conventional bomb coming at us at 15,000 miles an hour, or is that a nuclear bomb? The answer, I know we're in crisis and you expect that I will strike. But trust me, that's a conventional bomb. We've conditioned Russia for 60 years that ICBMs in North Dakota, Montana, Wyoming, Nebraska and Colorado carry nuclear weapons. That awareness and consistency is stabilizing.

We looked at fewer ICBMs. We could put multiple warheads on the remaining number of missiles, like the Russians. But more warheads on each missile increases the value of that ICBM and incentivizes heavy targeting to try to eliminate it from attacking you. And reducing the number of targets by getting rid of more ICBMs enables the adversary to allocate more weapons to take out the remaining high-value missiles.

The reduced targeting challenge, together with the higher value of each target, is destabilizing. So, a single warhead on 400 ICBMs constantly on alert, distributed over 30,000 square miles, makes the ICBM the most stabilizing leg of the triad.

We looked at fewer ICBMs with a single warhead. Besides the targeting argument I just made, the ICBM provides the U.S. unique flexibility in at least two ways. If a problem is discovered in either leg of the triad we can upload more warheads to provide required target coverage until the problem is resolved. The ICBM force also provides us the same upload hedge against an unforeseen technological breakthrough or breakout that results in a rapidly expanding adversary force.

If you do not have a means to hedge in crisis, you have less ability to control escalation. In addition to all the other value the ICBM brings to our national security, the ICBM is the hedge, the means to confront uncertainty. What size hedge does the U.S. need? You all know the outcome, it's the force we operate today, and by downloading the Minuteman III to a single warhead and retaining 450 launch facilities, and Russia and the U.S. reducing overall numbers of deployed weapons, the ICBM brings even greater stability value to the deterrence equation.

There was great debate in the Senate, but in the end the New START Treaty was ratified. This bilateral treaty then put in motion long-term investment decisions by competitors around the world. But it wasn't over. We probably spent five years working this problem from the beginning of the NPR process through the years following treaty ratification, with the White House trying to trade off nuclear capabilities for conventional capabilities, and we couldn't get there. Russia was unwilling to shed any more of the nuclear force structure it was aggressively modernizing.

My own view was that this was unsatisfying to the Obama White House because those frustrating Pentagon people trapped in Cold War thinking just would not concede lower numbers of nuclear weapons. There's no objective algorithm that can produce compelling empirical evidence on precisely what numbers of nuclear weapons will effectively deter, because the psychological impact of nuclear weapons is resolved in the perceptions of the adversary. However, military planning for the horrors of deterrence failure are well architected by mathematics. There's even a special vocabulary: pre-launch survivability, probability of damage, probability of kill.

Run the numbers using exclusively conventional capabilities or a mix of nuclear and conventional, and the resulting solutions involve more resources of a magnitude we would ever choose to expend. Substituting conventional weapons for nuclear weapons was not moving the needle in the direction of further reductions. Maybe some of those who initially viewed the problem as rooted in a view that Cold Warriors would not easily embrace lower nuclear numbers to that of contemporary strategists advocating that you could not make the trade-offs with acceptable risk.

Then Russia invaded Ukraine and seized Crimea, all the while threatening those who might oppose the action with nuclear weapons. And then the White House confirmed the nuclear force structure we employ today that had been proposed by the Pentagon back in 2010.

So, I participated in the 2010 Nuclear Posture Review and I witnessed the rigor that went into that effort. As an interested American, but outside the process, I appreciate the quality of the work that went into the development of the latest National Security Strategy, the National Defense Strategy and the Nuclear Posture Review. And I think risk is captured well at all levels of examination.

The process continues to implement those policies, and political winds shift. We are a democracy, and competing ideas are brought forward that challenge the current game plan and budget. Where I live, in the capitol of Wyoming, we don't even produce a newspaper on Mondays. And I'm pretty busy taking care of my three donkeys, so I might not be as informed as I think I am.

But the burr under my saddle, as they say where I now come from, is that some of these positions are established either presuming no additional risk to U.S. national security, or showing no concern for risk at all. I've spent the last year talking at universities, community gatherings, Rotary Clubs, doing some national media, because I didn't see anybody like me talking about these issues. And I've found so many people appreciative of being part of a conversation they rarely have access to. They deserve thorough, open, well-prepared debate, and that debate should include risk right up front: the risk to preserving deterrence, the risk to geostrategic stability, the risk to extended deterrence and to accelerated nuclear proliferation.

Last week the chairman of the House Armed Services Committee was attributed

as saying, quote, “The United States can get by with fewer nuclear weapons and delivery systems. The ICBMs are the least survivable, so it seems like that would be the place to cut.” The last time I heard comments similar to the HASC chairman’s reset with Russia was around the corner, China hadn’t finished building their first new island in the South China Sea, and North Korea was just experimenting with nuclear weapons.

But today, instability is greater, the world is smaller, the challenges are on the move fortifying and expanding nuclear, conventional, cyberspace information capabilities, and threatening to take territory. The framework and alliances we have depended on for decades are not delivering the results we are accustomed to. In some cases, we need new regional frameworks to address regional competition.

The strategic capabilities and intent of our great power rivals are on display every day. Russia stirs the pot across the globe, seeking to diminish Western influence and fortify its own objectives, such as slowly disintegrating NATO, influencing outcomes in the Middle East, deploying combat forces and capabilities in the Western Hemisphere, specifically Venezuela, and partnering with China in Asia and Europe wherever and whenever it sees mutual benefit.

China began deploying its economic battalions, that’s my term, across seven continents decades ago, that today set the agenda along the one belt, one road and many other places, while establishing lines of communication across Asia, Africa and one island chain after another in a region it considers its own. Its economy will eclipse ours within the next decade, and its long-term goal is to be the pre-eminent military on the planet by 2049.

North Korea’s nuclear weapons program not only jeopardizes stability in the region, but challenges our relationships with long-standing allies Japan and South Korea. And alliances growing between nuclear weapons states such as Russia and China, China and Pakistan, China and North Korea, Russia and North Korea, are creating risks to the United States and our allies, and challenges I do not think we are yet prepared to meet. In my view, the instability we see has not yet peaked.

So, we have serious issues to deal with and America’s nuclear enterprise is part of that solution set. After decades of neglect which drove a variety of increased risks, we have a comprehensive set of modernization programs underway to preserve the credibility and effectiveness of our nuclear deterrent into the future. The strengths of the current program are the efforts to modernize the triad, which continues to reliably deter under the broadest range of scenarios.

The unblinking 400 missile land-based alert force, historically the cheapest leg or the triad to operate, presents a visible, immediate, overwhelming striking force which deters pre-emptive strikes and discourages escalation in crisis. Some have said the ICBM is the most vulnerable leg of the triad because it’s in a fixed location and easily targeted. I would say one of the greatest redeeming qualities is that it’s America’s most highly visible nuclear-armed leg of the triad, constantly transmitting to friend and foe alike that

the U.S. is invested and committed to defending ourselves and our allies.

A hardened ICBM is only vulnerable to a pre-emptive attack by Russia alone, but that's not a deterrence issue, that would be the utter failure of deterrence. Take away the ICBM force and potential adversaries far less capable than Russia could be willing to challenge our vital interests. It's essential to the security of the United States that any nation that would contemplate manifesting the threat that we would interpret as existential must believe all the time that the costs we would impose would be so devastating that its daily answer is, not today. It can never be, maybe today.

There have been 73.5 years since there's been a hostile detonation of a nuclear weapon. Everything should be done to extend that record. The high-end stability the U.S. can bring with its credible nuclear capabilities can contribute to that outcome. If that record ever gets reset, I'm not sure what the odds are that we'll break it again.

Thank you very much.

(Applause).

If anyone has any questions Roger Burg is happy to answer them.

(Laughter).

MR. : (Off mic).

GEN. ALSTON: I think we both can take swings at that, and since I started talking I'll take the first swing. I think those are great points. I think there's a lot of uncertainty about the efficacy of all of our defense capabilities for those reasons. And the speed of change has a consequence all its own.

I've thought about this a lot, and right now I can't think of a more effective means to manage the risk of deterring what needs to be deterred with a concept that is more effective than the triad. So, I think it's important that we don't take for granted that those capabilities are going to be effective. We have to do the work to ensure that there is a reality-based approach, but I can't think of a better way to do it.

We're not going to dig any more holes, so any holes that we fill on the ICBM side are going to stay filled forever. So, we have to be very thoughtful if further reductions can be justified in the future. But this force has to be flexible. The "B" in ICBM, ballistic, the physics are such that, you tell me, 30 years from now our force would be vulnerable if ballistic is the means by which they get delivered. So, there's going to have to be an evolution of the capabilities across the triad in order to maintain its efficacy to do the job we ask it to do.

GEN. BURG: I agree completely, Don, and I think it's a valuable point. Don't presume that what you modernize in this next five to seven, eight, 10 years stays the same

for the rest of its deployed life. Hypersonics are going to have to be part of the nuclear deterrent of the future. Maneuvering re-entry vehicles for both ICBMs and submarines, in the advent of advanced defenses, are going to have to be part of that future capability.

But that doesn't mean you don't do what you need to do now. What that means is you stay open to the requirement that you continue to modernize aspects of your force as technology becomes available and as the threat requires. The last thing you really want to do is have a GBSD system that's designed and built in 2030 still on alert in 2070 with no changes in its capabilities. You need to advance to what the threat requires.

MR. : (Off mic).

GEN. BURG: I wouldn't discount your point, but I would say that's not new news. If you went back to my early days as a targeting officer, it was very clear that the Soviet Union senior leadership thought there were reasons and capabilities that they could and should survive a full nuclear assault. The reason that you had underground subways and hardened command structures built in mountain systems, was because they thought that they had to prepare to retain what was valuable to them, which was themselves.

They didn't prepare the population to survive. You had a significant civil defense effort, but it was not going to survive the population. They didn't really take significant steps to have industry survive. But the leadership worked very hard to say this is how we will survive.

But I think they, over time, came to the conclusion that we'll survive for what purpose? Okay, are you going to sit in your bunker in the Ural Mountains and command and control anything? Is there a world that you're going to have a significant impact on? And I do think in the late '80s and early '90s thoughtful people in Russia said, it's not something we can force.

Very short, there was a big debate in about 1987-88 over how much the Soviet Union was investing in its national security infrastructure. The CIA led the intelligence community in an assessment, and it came up with a number. Several senior leaders didn't believe that number, so they set up a B Team to say, what are other assumptions we could make to see what another number might be?

The argument came down to, is it 12 percent of their GDP or 14 percent? Huge political combat inside the inner-agencies. After the fall of the Soviet Union the archives came open and researchers went in. Which team calculated best? Was it 12 percent or 14 percent?

Some of you probably know the answer. Neither one, it was almost 40 percent of their GDP that they were throwing into their national security infrastructure. There's a reason they went bankrupt.

But back to those of you who still believe everything that the intelligence community tells you, I was a card carrying member for many years. After Iraq I started to become skeptical. After -- well, let's just say your current political environment invites discussion over who has the best estimates. It doesn't necessarily invite a conclusion on what that assessment should be. So we had this huge battle over 12 or 14 percent, and people succeeded or lost jobs based on that calculation, and it was off by a factor of two.

GEN. ALSTON: I actually would challenge your position that there is a new approach to civil defense in Russia or China. I'm not saying that it's not a fresh and active approach, but if you ride the subways in Moscow, I mean those babies -- you're riding that escalator for -- you ought to pack a lunch. It's a long ride down.

So from the outset, we were both doing civil defense when the terror component of deterrence was even more prominent. But I would say that the challenge we have is that nuclear weapons aren't going to solve -- they're part of a mosaic of capabilities that we need in order to secure stability, which I put a lot of value on. When you think of nuclear annihilation you think of it in an instantaneous -- it's watching the second hand on the atomic clock. It's moving fast, they're 30 minutes out and we're all going to die.

But today, I know it's probably just driven by Hollywood images, but today an infrastructure attack in the middle of the winter could have such devastating impact that you have to measure it not even by looking at a clock but by looking at a calendar. What would be put in motion would be devastating to the country and we would be dying over months, irretrievably, arguably. If not irretrievably, very difficult for us to find a way to recover. And it wouldn't be a nuclear weapon that threw all that into motion. So it would be slow motion, but it would be, if not existential let's just say something that none of us want to go through.

So, there's just so many things that we need to be doing that we're not doing very effectively right now, in my view. There is no government action that is protecting our infrastructure. Banks are on their own. Hospitals are on their own. There is no comprehensive investment that's being done to secure that part of the perimeter. So, I think it's such a complicated problem, nuclear is just a piece of it.

MR. : (Off mic).

GEN. ALSTON: I'll grab that first to say, first of all, we came from Space Command. We were sort of taken care of there in terms of this thing. I think it was because Space Command had rockets, everybody has rockets, we ought to be together. We fused together career fields and we said, go to many different space activities, get all the space experience you can.

We did damage to the nuclear forces side, so I don't think we would transition that way. But I'll tell you, as the guy that had to -- you know, following Roger while he's out stabilizing the ICBM force and I have lots of buggers on my finger trying to elevate

our focus on recovering from epic failure, I really had a sense that the better model was Special Operations Command. Give us our own budget, leave us on our own, and we'll do a better job taking care of ourselves more than my Air Force was taking care of us for a long period of time.

So, as it stands right now I think standing up Global Strike Command was a benefit. I think that it is growing in ways that I think history will be the judge on just how effectively they maintain focus on the ICBM part of their mission. But I think we've set conditions that are more productive -- have the potential to be more productive for the long-run, so I don't think that dynamic with an emerging Space Force is going -- but we're linked with them. I mean, our warning comes from them. A lot of our communications, they're the essence of it. So, this is a team sport. Effective deterrence is a team sport and those relationships will endure forever.

GEN. BURG: You take me back to Jim Armor (ph) and I on active duty arguing about what benefits we got from the attempted merger of the ICBM and Space Force. He was the advocate for not merging. I drank the Kool-Aid and I will now state he was right and I was wrong, because in John's words, we did great damage to the nuclear force by presuming that it was the lesser included case of we need a few nuclear professionals.

The reality is we have to have people who really know their job. My mantra for command was, if you don't know where to look for the unintended second and third order consequences of a first order decision that you're making, then you're not qualified to command that organization. In my Air Force we had an idea of a universal management badge and we didn't always value the special requirements of some of our strategic capabilities, and we could go into a lengthy discussion.

A year and a half ago Jim and I were discussing the Space Force proposal and we quickly calculated that maybe you could get to about 40,000 people who do real space things inside all of our services and government. What's the smallest service in the Defense Department? The Marine Corps. How many people are in the Marine Corps, does anybody know? It's approaching 200,000. So 40,000, nearly 200,000.

I think the Marine Corps struggles to man its senior leadership and the Joint Force with qualified, capable professionals. How do I do that with 40,000 people when I'm going to pay a headquarters and leadership bill from that 40,000? I think it's a significant challenge, and I wouldn't give them any more problems than they will have once we stand up this force.

But I will say I thought the secretary of the Air Force did huge, huge successful management of the issue, to retain the Space Force inside the Department of the Air Force and not have it become a completely separate service. I give her great credit for a very difficult challenge to get to that answer.

MR. : (Off mic).

GEN. BURG (?): Is that just in a NC2/NC3 or are you talking everywhere?

MR. : (Off mic).

GEN. BURG (?): I'll give a short view. I think it's incredibly challenging because the last nuclear command and control system we built was built in the analog age. We had things like air gaps and standalone systems, and that's what it's all based on.

Does anybody think you're going to build anything today that's not digital and somehow connected into an Internet serviced capability? I can find ways to nuclear certify standalone air gap systems. I've got some history of doing that.

I have really hard conceptual problems applying a digital risk management framework to a modern nuclear command and control system that allows me to get to the point where I can give it a nuclear weapons certification. I think industry and government will be hugely challenged to get there, but I would say we have to. We have to find a way to do that.

GEN. ALSTON (?): What he said.

MR. HUESSY: With that, General Burg and General Alston, thank you for some not only intriguing but very thought provoking comments. You can come back next year as well. Would you give a warm thank you?

(Applause).

We look forward to seeing you Friday with General Chilton and General Kehler. If you haven't registered, please do. If you have friends and colleagues who would like to attend, please do. Again, thank you for coming.

Frank, thank you also for being here. Thank you again, General Alston and General Burg, for two really extraordinary sets of remarks. We will see you Friday. Take care.