

081018 Air Force Association, Reserve Officers Association, and National Defense Industrial Association Capitol Hill Seminar with Air Force General Paul Selva, Vice Chairman of the Joint Chiefs of Staff, on “Nuclear Deterrence, Missile Defense and Space: Paths Forward” (For additional information on AFA/NDIA/ROA seminars contact Peter Huessy at phuessy@afa.org).

MR. PETER HUESSY: Good morning, everybody. On behalf of the Mitchell Institute and the Air Force Association, I'm Peter Huessy and I want to welcome you to this next in our series of seminars on space, missile defense and nuclear deterrence.

We're honored today to have General Paul Selva. He serves as the 10th Vice Chairman of the Joint Chiefs of Staff. In this capacity, as you know, he's a member of the Joint Chiefs of Staff and the nation's second highest ranking military officer.

He graduated from the U.S. Air Force Academy in 1980 and completed his undergraduate pilot training at Reese Air Force Base in Texas. He has held, as you know, many staff positions and has commanded squadron group wings at headquarters level. Before this assignment, he was the commander of U.S. Transportation Command at Scott Air Force Base in Illinois. He also has 3,100 hours flying the C-5, the C-17, the C141, the C-37, the KC-10, the KC-135A and the T-37.

He is here today to talk to us about not only strategic nuclear deterrence but also the space force. On behalf of General Deptula, who unfortunately could not be here today, who is my boss, the dean of the Mitchell Institute, I want to thank you for being here.

I want to also thank our embassy guests who are here today, as well as remind you that we are having Lieutenant General Thompson as our next Space breakfast speaker in September. I believe it's September 28th. Then we're going to have Mr. Pete Fanta in September, along with General Formica and General Todorov, who will talk about missile defense. Peter Fanta will be talking about nuclear matters.

With that, would you give a very warm welcome to the Vice Chairman of the Joint Chiefs of Staff, General Paul Selva?

(Applause).

GEN. PAUL SELVA: Good morning. I'm going to start out by letting you know that I have two speeches this morning. The one in this pocket is about strategic nuclear deterrence and missile defense and a variety of other subjects that I was asked to talk about. The one in this pocket is about the space force.

(Laughter).

I'm actually going to try to work both in. I want to point out Major Will Powell sitting way back there in the corner. He actually wrote both speeches and he's trying to keep me on the straight and narrow. I'm going to be as open and honest with you this morning as I can about all of those subjects. I am going to refer to what he wrote, twice, and then I'm going to abandon his good work and wing it, which is going to make him very nervous.

What I'd like to do is rewind the clock, and I'd like to rewind it twice for you. The first is next week, the 16th of August, 1968. Fifty years ago the first Minuteman III test shot was taken from Cape Canaveral into the Eastern Missile Test Range. It was the first ICBM that was designed with a post-boost vehicle that could deliver multiple independently-targeted re-entry vehicles.

I remember the debate, as a freshman in high school, about whether or not MIRV would forever change the strategic stability equation, whether or not they were by their very nature escalatory, whether or not by their very nature they threatened our Russian adversary in the Cold War. Several things in that statement ought to resonate with all of you. Are they destabilizing? Are they escalatory?

I was a freshman in high school. This year I'll be 60 years old. Those same Minuteman IIIs are still in our inventory. That same post-boost vehicle still exists. The same electronics that were built into that missile are in that missile today.

Were it not for our exceptional missile maintenance force, were it not for the exceptional airmen who man those systems, the civilians in our depots who maintain them, the Minuteman III would long ago have exited our inventory. That missile went IOC in two years. Two years later the first Minuteman IIIs were deployed at Minot Air Force Base North Dakota.

How many of you think, as you sit here today, that the vision of the Nuclear Posture Review with a recapitalized nuclear triad of Columbia-class submarines, B-2s and Ground Based Strategic Deterrent, will meet a timeline like that one? There is an urgency to that task that was articulated in the Nuclear Posture Review. There is an urgency to that task of the recapitalization and modernization of our nuclear arsenal, the modernization of our nuclear enterprise from indications and warning to defensive capabilities to command and control to the actual tools of nuclear deterrence, all outlined in the Nuclear Posture Review. They're incredibly important to the security of our nation.

What is equally important is the discussion about deterrence itself, and that we not miss the critical key elements of nuclear deterrence. You notice I'm being very careful about my terminology. I haven't said strategic deterrence, I've said nuclear deterrence.

I'm attempting not to confuse the issue with what are the other tools we might use to deter an adversary, because of course strategic deterrence is an all of government national effort to prevent potential adversaries and competitors from crossing the nuclear

threshold. But in the end, nuclear deterrence is about the capability, the will and the capacity to respond in kind, and a declaratory statement that says we will do so. If you carefully read the Nuclear Posture Review, all of those are included, and they're not subtle.

That's important, because while the debates about whether a MIRV'ed ICBM was stabilizing or destabilizing were going on, it was very clear through the Cold War that we had the indications and warning, the command and control, the capacity, the will and capability to respond if the Soviet Union crossed the nuclear threshold. We must maintain that capability.

Many of you have heard me talk about the current state of our nuclear triad. It is safe, secure, reliable and ready. I have very high confidence that General John Hyten, if he's called upon by the president, will be able to execute our war plan.

But that is not a birthright. The Minuteman III missile was designed to be in a missile silo for 10 years. We've had its life extended in 10 year increments up to three times, if I understand the design requirements about right.

I'm an engineer. I know how to do arithmetic, 10×3 is 30. Through the miracle of good maintenance, disciplined operations and care of the system, we've made 10×3 into 50.

By the time we're done, we're going to have to make 10×3 into 65. It's not going to be easy, but it's the path we've chosen. We're going to squeeze every amount of value, every bit of value, out of that weapons system before we retire it. It does demand that we get about the business of figuring out what we're going to use to replace it, and we are on that path.

The same is true of Columbia-class submarine, the same is true of our bomber fleet. The other part of this enterprise that we need to talk about, and many of us aren't educated enough on, are the national laboratories that make our weapons real, the artisans and mechanics who actually build the components that are the operating bits of our nuclear weapons. By the way, we euphemistically call those "physics packages." They are incredibly detailed and finely crafted objects.

I have been to all but one of the laboratories that represent our nuclear arsenal and our nuclear enterprise. I have visited with artisans that do everything from arming, firing and fusing to the advanced electronics, to the actual re-entry vehicles, to the nuclear components themselves. In fact, when I was at Sandia several months ago, a technician who had just recently finished working on a plutonium pit handed it to me. It's a little bit smaller than a football. If you hold it long enough, you feel the warmth of the radioactive material through the leather gloves that you must wear to hold it.

Once you feel the warmth, you get the warning that if you hold it much longer your dosimeter will actually record that you've been exposed to radiation, and that's

when he says, please don't drop it and he very carefully takes it back from you. When you think about the technology that goes into the production of that piece of hardware, that represents probably the most powerful weapon that humans have ever invented, and the detail and care that goes into every single step of its manufacture, of its delivery, of the surveillance of its health over its lifetime and over its disposition, what you're exposed to is the professionalism of a core of people that most of us don't even know exist.

They are the physicists, the scientists, the technicians, the artisans, the manufacturers of that capability. In the United States Air Force and the United States Navy, they are the maintenance technicians and contractors who lay hands on those weapons every single day to make sure that they're safe, secure and reliable. And they can put them in the hands of the submarine crews, the missile crews and the bomber crews who are ready every day to execute our nuclear war plan if ordered to do so by the president. That's the guts of the NPR.

The actual foundation of that capability lies at two ends of the spectrum: the science and technology it takes to make it real, the manufacturing capacity it takes to create those weapons and weapons systems; and the leaders and the airmen and sailors and the legions of contractors who actually stand ready to do that job every day. So if you want to cut away all of the trappings of the strategy that surrounds nuclear deterrence, it's pretty simple. It's pretty simple.

In fact, there's a video if you want to go look at it on YouTube that Global Strike Command just put out. It ends with this quote from Teddy Roosevelt, "Walk softly and carry a big stick." It pans away from a Minuteman III in a silo in Minot, North Dakota, and says "Sticks don't come bigger than this." That's deterrence. That's deterrence.

So let me rewind the clock one more time and start a slightly different speech, which many of you are probably sitting on the edge of your seats wondering about. That is what happened yesterday in the Pentagon when the vice president announced the president's intention to take the steps to stand up the space force by 2020. But I want to rewind the clock a little bit farther than that.

I want to rewind it to the summer of 1990. In the heat of the desert in Kuwait 100,000 Iraqi soldiers invaded Kuwait and annexed it into the country of Iraq. Remember what the intelligence community told us about the Iraqi army and the Iraqi military at that time, the fourth largest conventional army on the face of the planet. They had squashed their neighbor and took custody of 20 percent of the world's oil supply.

Within hours, then-President Bush said we would come to Kuwait's defense, that we would assemble a coalition of like-minded countries that would liberate Kuwait from the invasion of Iraq. And so we did. By my recollection about 32 countries came together and formed a coalition. About 750,000 soldiers, sailors, airmen and marines from those 32 countries massed for what would be Desert Storm.

By my recollection, about 60 days of bombing, precise strikes on command and control, power, the centers of gravity of Iraqi power, the things that let them command and control that impressive military, went on almost uncontested. We tried to hunt down and kill their missile capability, and regrettably we missed a couple. The largest casualties in the United States' military from that war were actually a barracks that was hit by a Scud missile.

One hundred hours of ground warfare. The largest ground maneuver in our recent history and an audacious move to come from a direction the Iraqis didn't expect, straight into the heart of Iraq, not right up into Kuwait, not up the middle but around the left side. A huge effort, logistically. A massive command and control task to move all of those forces and make that ready. And in 100 hours it was over.

Why do I pick that time in history? Because seven years later a colonel at the Chinese War College wrote what is today still the Chinese definitive text on U.S. warfare. What he wrote about were the amazing capabilities that were embodied in this U.S. military led coalition, the amazing capacity that we had for command and control and for understanding of the depth and breadth of the battle space, the incredible contribution that information technologies made to our capacity to defeat the Iraqi army in detail, and the critical contribution of our assets in space. He concluded his tome with an assertion that the only way to compete with and win against that American capability was by taking asymmetric approaches, and he went on to define what some of those asymmetric approaches might look like.

It won't surprise you that one of them was to attack our capability to operate to, through and from space, to provide the information, the weather, the command and control, the connectivity, the precision navigation and timing, and the target recognition that were required to make that campaign possible. So in spite of all of our efforts to declare the commons of space as a place that all of us should be able to use, the assertion was made in 1998, and stands to this day, that asymmetric approaches are the way to defeat the United States military. So what we have is an interesting alignment.

We have an interesting alignment of competitors who wish to have the capability to become adversaries. I pick those words very carefully because that's the way they're written in the National Security Strategy. That's the way they're written in the National Defense Strategy.

We don't believe Russia and China are adversaries today, but they're behavior could become adversarial overnight. This is about a great power competition. It's about a competition for access. It's about a competition for resources. It's about a competition for economic power and strength.

If space becomes an asymmetric approach to compete, then we have to be ready to address it. So Deputy Secretary Shannon had published a report yesterday which was mandated by Congress to get at what are believed to be some of the things that we could improve in space. It lays the foundation for the establishment of a space force, but it does

not assume it. A careful reading of the document says there are four things we must do.

We have to figure out how to do command and control of our space constellations, how to be able to defend it and deter those who might attempt to attack it, from being successful. That requires that we stand up a unified U.S. Space Command, a four-star commander, who has the authorities and the responsibilities for tactics, techniques, procedures, training and standardization for the requirements for those architectures that are going to continue to make us successful in space. It requires that we get after our rather ossified acquisition process, and I am on the record as saying every attempted acquisition reform in my military career has simply resulted in us going slower. So if we can find a way to go faster, we need to.

Here are some component parts of going faster. We must have an institution, call it a Space Defense Agency if you must, that can do systems integration work, technical systems integration. When we built GPS we didn't envision all of you would be wearing or carrying a device that was linked to it. We didn't envision that it would become a multi-trillion dollar industry based on a free RF signal from an orbiting constellation of satellites that we designed -- we, the U.S. military designed -- to provide precision navigation and timing signals to weapons and weapons systems.

I could name a dozen companies who depend entirely on that precision navigation and timing signal for their actual existence. It's like oxygen, it's free. And we need to keep it free, free from attack, free from threat, free and available to people who need to use it.

But we also must make sure that if it's a war fighting imperative we can make it available to the fielded forces who depend on it. And we can't let somebody who says they're going to attack it asymmetrically get at it. So we have to figure out how to do this right.

By the way, when we built GPS only a handful of military systems could subscribe to it. We didn't actually build the technical architecture for the system that said how we were going to do command and control, how we were going to do access to the signal. We said, it's kind of like oxygen, they'll figure it out.

We cannot afford to do that. We cannot afford to have a constellation of satellites that are not connected to one another and that are not connected to war fighters on the ground, that are not connected to people that depend on them for the information that's required to prosecute modern warfare.

So systems engineering is going to be incredibly important. We cannot build space systems in isolation from one another across the entire space enterprise. So we have to get at that.

We have to get at standardization of the personnel. The document calls that space operating forces, all of the soldiers, sailors, airmen and marines -- and trust me there are

all of those -- that wear some semblance of a space identifier; the engineers and scientists and technicians who do space design in all of the services; the people that actually design the weapons systems that must connect to the space constellation, we have to have some level of standardization over that entire force. That will become the purview of a four-star commander. And then we have to decide how to take care of them.

What will their advancement look like? How are they going to be taken care of in their parent service or in a space force? That's the grist of the legislative proposal that must be written by the department and submitted to the Congress at the behest of the commander in chief.

So those are the four big pieces of that document. I didn't describe them the way the deputy secretary might describe them, because I didn't write the document. But I read it carefully, and here's my proposition.

Step one, do no harm. Make sure we keep our war fighters connected to the capabilities they need from space. Second, improve our ability and agility to actually take advantage of all of the innovations that are going on in space in and around us. It's not enough to just build elegant military constellations anymore. If a commercial company can build a satellite for \$10 million and launch it for \$1.5 million, and proposed to build 500 of them, we need to figure out how to hitch a ride. We need to figure out how to engineer that data into the systems that help us do command and control in war fighting.

I'm going to help people solve problems, like where are adversaries hiding TELs or what happens when somebody has a functional and operational hypersonic glide vehicle? I need sensors in space that can let me do that and I need them now. By the way, if you think missile defense is easy, think again. You're shooting a bullet with a bullet. That's as good as it gets.

And it gets worse when the bullet is going 13 times the speed of sound and can maneuver. That's what hypersonic is. So we have to have a constellation that can do that, and the systems engineering is not trivial. But wouldn't it be interesting if a commercial partner's constellation of satellites actually had some capacity to contribute? And if that's true, why would we build our own?

I'll give you one of my favorite things to do. I own a house in Gig Harbor, Washington. It sits on a bluff overlooking Puget Sound. When the weather gets really bad pieces of the bluff that it stands on slide into the ocean. My insurance company gets very interested in how often that happens.

So I hired a geologist. She went out and did core samples and looked at this piece of property. She said, you know what? The odds of the house actually sliding off into Puget Sound are pretty low, because the bluff is reasonably stable.

I went, how do you know that? Well, the sand particles are this close together and

the density of the soil. She gave me a bunch of geological reasons why my house was not going to slide off into the ocean, which convinced my insurance company that everything is okay.

But I actually own more of the house than the insurance company does, so I did a little experiment. This is about remote sensing and the value of data. I actually went to Google Earth. This is not an endorsement for Google Earth, it's just this is where I could get the data. I'm sure if I asked the NRO they would do it for me, but I'm not going down that path.

(Laughter).

I found the house, and there's this interesting little tool on Google Earth where you can actually go through the archive of photographs that they have of that point on the Earth. Every day that archive actually gets better. So I can now rewind the clock on my house in Gig Harbor and I can back it up.

I can actually back up to 1978. The house was built in 2002. I can periodically look at the bluff from the very same angle and see how much of it is gone.

I can actually assert from that experiment that that geologist was actually worth her freight, because here assessment was actually right. In the last 50 years there were only two or three instances of the bluff failing, they call it sluffing, and they were relatively minor. One was actually caused by our renters, which we fixed by making them leave and changing the configuration of some of the property.

I only raise that because think of the military implications of being able to do that on a global scale looking for objects you care about. I only care about little white patches that show up on the landscape cliff side on my property in Gig Harbor. But I also care deeply about the ability to target adversaries who try to hide things in plain sight, or obscure them from the view of other sensors.

There's a handful of concepts of operations that are based on the following assumption. Sometime in the very near future there will be nearly ubiquitous sensing of the entire surface of the planet. That will have implications, to get back to what you asked me to talk about, for nuclear deterrence, for ballistic missile defense and for the actual disposition and employment of our forces across the depth and breadth of any battle space we chose.

Think about what I just said. There will be ubiquitous sensing of the entire surface of the planet, and it will have extreme military consequences. Those of you who have inquisitive minds and think operationally would ask a couple of very hard questions.

How are you going to make sense of all that information? Who's connected to it? How are you going to provide it to the forces that matter? How are you going to sort it? How are you going to do command and control in that kind of an environment where

everybody can theoretically see every target?

That is an epic systems engineering problem. It's not about physics. It's not about science. It's about asking the operational questions. How will you connect all of that?

So if there's promise in what has happened in the last several days in this move towards the development of a crystallized view of how we are going to articulate our interest in space and our willingness to defend those interests in space, it comes back to that one question. How valuable is it? How are we going to connect it? How are we going to make it work?

So the commander in chief has asked us to put a proposal on the table that says a space force can do that, and we'll do just that. But all of us need to be asking the fundamental question that I just asked, how are we going to make it work? Because in the end, this is about will, capacity and capability.

That will, capacity and capability are embodied in the soldiers, sailors, airmen and marines who put their uniform on every day and say, yes, I have the leadership, the tools and the capability to defend this nation. And I am confident enough in that leadership and those tools that I am willing to put my life on the line to defend freedom and liberty.

I stood at my nephew's commissioning ceremony a little over a year ago on the parade field at Quantico. At age 27 he chose to become a lieutenant in the United States Marine Corps. As I stand here today, he's getting ready to deploy on his first deployment with a platoon of marines who he will lead.

If he were standing here, he would echo what I just said. He would do it a little differently. He would say, I've been trained to lead marines. I'm going to do my level best to give them the leadership they need to make sure that when we go into combat I bring them all back having achieved my objective, because that is my duty as a lieutenant in the Marine Corps.

I think I could touch just about any person who wears the uniform of this nation and get a similar response. So our obligation in all of this is to make sure that we provide the leadership, the resources and the tools for people like my nephew to be successful. So when I come to work every day, it's not about the tasks I've been asked to do, it's about the duty and the obligation that I've taken on.

And that is to make everybody who wears this uniform successful in the tasks we give them. They don't work for me. I work for them.

Thank you all today for being here. I hope I touched a couple of the issues that you're interested in. I think we have some time for questions, and I'm not going to be the referee on who gets a microphone. I'm going to let somebody else do that.

(Applause).

MR. HUESSY: Before the general answers the question, he does have to immediately leave at 9 o'clock back to the office, so I would like you to please remain in your seats so security can take the general to the elevators downstairs and to his ride back to the Pentagon. Please observe that if you would, please.

Steve, from Congressman Pearce's office.

MR. STEVE TRAVER: Yes, sir, I'm Steve Traver from Congressman Pearce's office. We're getting pinged regularly now over a pending potential problem with finding the limits of sovereign airspace, because there's a whole bunch of law that applies when you're dealing with things in sovereign airspace, and a whole bunch of other law that applies when you're dealing with outer space, in particular, freedom of navigation. The reason this is coming up, of course, is that since the beginning of the space age we've sort of all notionally agreed that 100 kilometers sounds like a good number for all kinds of practical reasons.

There's all kinds of interesting things that might start happening over the next generation or so involving areas that are below 100 kilometers. Anyway, my question is, are you hearing from these same lawyers, because this is going to end up being a problem for Congress and ultimately for the president and the UN. Are you hearing from these same lawyers that you guys need to tell us what the military implications are of defining the beginning of outer space specifically as the end of sovereign airspace?

GEN. SELVA: The short answer is no. That doesn't mean my lawyers aren't hearing from those lawyers. But it does raise an interesting -- and it's not an academic question because as a matter of policy we've said those objects in outer space have the freedom to move across whatever boundaries might exist on the surface of the planet.

But we have declared sovereign airspace and we recognize the sovereignty of the airspace around other nations. So it does raise an interesting quandary, which is if you have -- and I'm going to say this -- my life has been governed by Newton and Bernoulli. If I can't make lift, I fall out of the sky. It's that simple.

I can't maneuver if I can't make lift. There is a point in the continuum of the atmosphere where there aren't enough atoms to make lift. The problem is, that continuum is actually moving up.

If you only depend on Newton and you don't depend on Bernoulli, what does a high altitude balloon station keeping at 150,000 kilometers mean, presuming you could actually do that? By the way, it not only station keeps, it maneuvers, so I can move it over any part of your sovereign ground space at will.

There was a second presumption, by the way, about objects in space when that policy happened, which I'm going to assume and assert, but I'd have to go back and

actually figure it out. We actually assumed and asserted that those things above 100 kilometers couldn't actually be made to do damage on the surface of the planet. Does that attach?

So I think the legal questions that are going to accrue to whether or not we do a convention for what those sovereignty boundaries are, or the legal determinations, once you have the capacity to inflict harm on the surface from an orbiting object, will rules of sovereignty attach or not? I think that's an interesting question, but the actual short answer is no, I'm not aware of the legal questions. I bet there's a raft of attorneys in the building that are.

MS. SANDRA ERWIN : I wanted to follow up on your comments about a constellation for hypersonic defense. We heard a lot about that this week from General Hyten. It seems like everyone says it's a requirement that has to be done. Can you give us where you are in your planning process? Do you see a construct and is cost going to be an issue given some of the other priorities in DOD?

GEN. SELVA: It's a great question. The Missile Defense Agency has a task from the JROC to actually come back with an assessment of the sensor requirements. What will the sensors have to be able to see and how large will the constellation of sensors have to be if they're space based, and whether or not we can actually connect them to a command and control and defense system that will allow us to defend against hypersonic? Those are three big hard requirements.

We've asked them for the systems engineering assessment of how they would link all that together in a study that they owe us this fall. If I could, let me put a little bit of context around hypersonic, because it's really important. One is they go really fast, they're hypersonic, Mach 7 or better.

The second, which most people don't actually understand is it can potentially be a repurposing of a ballistic missile booster. What you have to do is depress the trajectory of the booster enough that you can make the object on its nosecone go faster than Mach 7. Having achieved that -- this is where some of us have to push the I believe button -- you get excessive, what we call Delta V, extra energy, in that object. It means it goes fast for a very, very long time and for a very long way.

So a ballistic missile that would have gone on a predictable trajectory might have half the range of the same booster used to boost a hypersonic vehicle. Two other things happen that we have to address, and this is why the technical part of this assessment for the Missile Defense Agency is so important. When you depress the trajectory of the booster you actually take it out of view of many of the conventional sensors we have deployed today. It means it's very difficult to do an early boost phase firing solution because you take away from our current arsenal the things we use to actually calculate that trajectory.

The last thing that happens is, if you have developed a maneuvering object --

that's a giant if because it's very hard to do -- then you can maneuver at your pleasure. The best example I can give of this is an object traveling at hypervelocity speeds over Hudson Bay could be pointed at any point in the continental United States: Maine, Washington, California or Key West, Florida. It has that much energy and that much residual maneuvering capacity.

So an end-game defense is really hard. This actually gets into strategic nuclear deterrence in an interesting way. We ought to say to all of our potential adversaries, if that object is a nuclear weapon we will respond in kind and inflict harm on you commensurate with the harm you inflicted on us, and that's not negotiable, so don't do it.

So the first part of that imperative is, a safe, secure and reliable nuclear arsenal that says to any potential nuclear adversary if you cross this line we're coming at you in kind. The second more technical part, which is much more difficult but not insurmountable, is how do you track the booster, the object and figure out a way to kill it? That's the task that MDA has right now as a subject of a JROC from about eight months ago.

MS. ERWIN. : And the funding?

GEN. SELVA: Don't know yet. If I knew how to do it I could tell you how much it would cost. We have asked them to look at all the technical possibilities.

MR. STEVE HIRSCH: Steve Hirsch from Air Force Magazine.

GEN. SELVA: Nice article this morning, by the way.

MR. HIRSCH: Thank you. At the beginning of your discussion of the space force you said that the (equipment and innovation ?) for the space force, something to that effect, it doesn't guarantee it. That sounds like a softer statement than the president's statement, we will have a space force.

GEN. SELVA: I can put all the statements together, though I won't. I won't stand here in uniform and criticize the commander in chief. I'm not going to do it. He said he wants it, we're going to try to make it happen. But it does require significant work with Congress to stand up a force in and of itself, and we will have to identify the resources that are going to do that. So the idea, which has already been said several times, that this will be absolutely resource neutral, I think to borrow words that were used to describe space constellation development a couple of days ago, is naïve.

If you just think about it for a minute, if you're going to have a separate service there's going to be a chief of staff of that service. If there's going to be a secretary of that department, what does the department look like? We don't have a space department today.

Most of the people that are doing space, which is one of the criticisms of the way

we're organized for space, with the exception of one section of the air staff and one section of the Air Force secretariat, all of the people that provide the support for space and space systems are actually shared assets. We don't have somebody that does space basing. We have an organization that does basing. We don't have space civil engineers in the Air Force, we have civil engineers.

If you're going to have a secretary that's responsible to organize, train and equip and provide the facilities for a space force that's going to defend our space constellations and grow the human capital that will be the space force over the longer term, I think we ought to be wide-eyed about the kind of resources you're going to have to give that person and that staff. So it worries me a little bit that we're saying this will be resource neutral, because in my opinion and having done this for 39 years, standing up new organizations is generally not resource neutral. And if any of you have witnessed one that absolutely is, come tell me.

So I think we have to be really careful with the assertions, and that's why I am saying standing here this instant, we will put all the building blocks in place. We will give the president the legislative proposal he's asked for and we'll advocate for it when the Congressional debate starts. But I think we need to be wide-eyed about what this really means.

So I'm trying to be as pragmatic as I can. The vice president, I think the quote yesterday he said, "This will be a hard fight." He talked about that in his speech. I'm paraphrasing but I think that's pretty close to what he said.

He didn't say it was assured. He didn't say it was a done deal. He said, it is the president's vision, and it is and we respect that vision. As the commander in chief, we're going to do what he's asked us to do because that's not only our duty it's our obligation, and I wouldn't want it any other way.

But I don't want to underplay the complexity of what they've asked us to do. I think that's the key and it is absolutely why I have approached this the way I have, and it's why I put number one, do no harm to the fights we're in. Win the fights we're engaged in and make sure that everything we do to stand up a space command and a space force honors the fact that all of our services, our entire joint force, depends on access to the information and to the precision navigation and timing and command and control signals that we get from space.

Everything from my nephew and his Marine platoon to our nuclear command and control depends on that same set of constellations. So I'm pretty wide-eyed about this and I know I'm treading a very careful line and I will continue to do it.

MR. HUESSY: Tony.

MR. TONY CAPACCIO: A year ago in this forum you outlined the four or five technological hurdles that North Korea had to overcome before they had a viable ICBM.

Fast forward now with the pause in testing in place. Has that pause affected North Korea's ICBM capability or program to the point where they haven't been able to accomplish those technological hurdles that you laid out about a year ago?

GEN. SELVA: To my assessment, and I think I'm okay at the level of classification where it is, they would still have to -- if we were going to deploy the same system we would still have to prove two things: a survivable RV and a reliable navigation and re-entry system. It's not clear to me that Kim Jong-un cares about either of those two things. But when we assess the risk of him having what he has, and whether or not deploying the tools actually matters, we have to assume he might shoot one of them.

We also should be fairly confident in our technical assessment that the last two pieces of what we would call the ICBM kill chain have still not been closed. So we would have to be prepared to defend, but we might actually make the choice not to shoot because we assert, based on what we know about the system and its trajectory, that it's not going to hit anything. So we still don't know, is the bottom line, but our assessment is he has not closed those last two pieces of the kill chain. We have not seen a demonstration of a reliable RV and we've not seen a demonstration of a reliable arming, firing and fusing system that would allow the system to survive and actually detonate when he wants it to detonate.

That doesn't mean he can't do it, we just haven't seen any evidence that he has. So freezing, for us in our Western judgment of the viability of a system, would say the system is not ready. What I would ask you is, are you confident that Kim Jong-un has our view of whether the system is ready or not? Might he shoot it anyway?

So as a consequence of the might he shoot it anyway question, we have to be ready, and we do maintain our readiness every single day to defend if he shoots one. We just have no indication --

MR. CAPACCIO: So it has had an impact ?

GEN. SELVA: My assertion, my conclusion is it has had an impact, but we don't know what impact it has had on his logic, on his decision calculus. So we always have to be ready.

MR. HUESSY: With that, General Selva, I want to thank you on behalf of Larry Spencer, our president, and Dean General Dave Deptula, who couldn't be with us today but sends his thanks to you. On behalf of the 140 people here today, thank you for an extraordinary set of remarks.

(Applause).

GEN. SELVA: Thank you all very much.