

Stenographic Transcript  
Before the

COMMITTEE ON  
ARMED SERVICES

## **UNITED STATES SENATE**

HEARING TO RECEIVE TESTIMONY ON UNITED STATES STRATEGIC  
COMMAND PROGRAMS

Tuesday, April 4, 2017

Washington, D.C.

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UNITED STATES STRATEGIC COMMAND PROGRAMS

Tuesday, April 4, 2017

U.S. Senate  
Committee on Armed Services  
Washington, D.C.

The committee met, pursuant to notice, at 9:32 a.m. in Room SD-G50, Dirksen Senate Office Building, Hon. John McCain, chairman of the committee, presiding.

Committee Members Present: Senators McCain [presiding], Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Strange, Reed, Nelson, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters.

1           OPENING STATEMENT OF HON. JOHN McCAIN, U.S. SENATOR  
2 FROM ARIZONA

3           Chairman McCain: Good morning.

4           The Senate Armed Services Committee meets today to  
5 receive testimony on the posture of U.S. Strategic Command.

6           We would like to welcome back General Hyten, who is  
7 making his first appearance before this committee as the  
8 Commander of U.S. Strategic Command. We thank you for your  
9 many years of distinguished service, General.

10          Over the last 2 years, civilian and military leaders at  
11 the Department of Defense, from the Secretary of Defense on  
12 down, have warned this committee about, quote, a return to  
13 great-power competition. Nowhere is this reality more  
14 evident than in Russia's and China's intensifying efforts in  
15 the nuclear, cyber, and space domains, which are the focus  
16 of Strategic Command's mission.

17          Russia continues to wield nuclear threats against  
18 allies that stand up to its aggression in Ukraine. It is  
19 well on its way toward completing the modernization of its  
20 strategic nuclear forces and has gone out of its way to  
21 deploy new nuclear capabilities not limited by the New START  
22 treaty.

23          Russia's deployment of a new nuclear ground-launched  
24 cruise missile in violation of the 1987 INF Treaty is a  
25 clear signal of the elevated role of tactical nuclear

1 weapons in Russian military doctrine. Moreover, this  
2 violation leaves the United States as the only country in  
3 the world abiding by treaty limits on its intermediate-range  
4 missile forces, a dangerous asymmetry that has implications  
5 for effective deterrence not only in Europe, but the Asia-  
6 Pacific as well. Merely hoping that Russia will return to  
7 treaty compliance is insufficient to the seriousness of this  
8 threat. That is why Russia's violation of the INF treaty is  
9 so significant because it calls into question basic  
10 assumptions about U.S. nuclear policy, assumptions we must  
11 be prepared to reevaluate given the new realities of our  
12 strategic environment.

13 China has one of the world's largest and most  
14 comprehensive missile forces, continues to modernize its  
15 nuclear capabilities by adding more road-mobile systems and  
16 submarine-carried nuclear weapons, and continues to pursue  
17 counter-space capabilities designed to limit our use of  
18 space.

19 Beyond Russia and China, the breakneck pace of North  
20 Korean ballistic missile and nuclear testing in the past few  
21 years means that a North Korean missile tipped with a  
22 nuclear warhead capable of reaching our homeland is no  
23 longer a distant hypothetical but an imminent danger. And  
24 Iran's continued development and testing of advanced  
25 ballistic missiles suggests that its nuclear ambitions may

1 have been delayed, but they have not been dashed.

2           These growing nuclear threats from great powers and  
3 rogue states indicate that whatever well-intentioned hopes  
4 we had after the end of the Cold War, the United States can  
5 no longer seek to reduce the role of nuclear weapons in our  
6 national security strategy, or narrow the range of  
7 contingencies under which we would have to consider their  
8 use.

9           That is why Congress has demonstrated its support for  
10 modernizing each leg of the nuclear triad, including a  
11 replacement for the air-launched cruise missile, through  
12 annual authorization and appropriations acts. Modernization  
13 is not cheap, but it is affordable: just 2 percent of the  
14 defense budget over the next 10 years, according to the CBO.

15           General Hyten, you told the committee last year that  
16 any program delays or reductions in funding will increase  
17 the risk to strategic and extended deterrence mission  
18 requirements, negatively impacting global stability and our  
19 national security. We look forward to your assessment as to  
20 whether there may be any such delays.

21           Finally, we understand that the Department of Defense  
22 will conduct a nuclear posture review, the first since 2010.  
23 That previous nuclear posture review stated: "Russia and  
24 the United States are no longer adversaries, and prospects  
25 for military confrontation have declined dramatically."

1 What a relief. General Hyten, the committee is interested  
2 in your assessment of how the strategic landscape has  
3 changed since the last review and what assumptions need to  
4 be reexamined.

5 With respect to space, after years of prodding from  
6 this committee, I am pleased and, in some respects,  
7 impressed with Strategic Command's enhanced focus on  
8 responding to Chinese and Russian activities in space. We  
9 have come a long way in the past few years. But the  
10 fundamental fact remains: our space superiority is at risk.  
11 Russia and China are intent on exploiting our dependence on  
12 space to achieve an asymmetric advantage. To that end, both  
13 countries are investing significant resources and achieving  
14 real progress as they pursue, test, and demonstrate a full  
15 range of capabilities such as anti-satellite missiles, co-  
16 orbital weapons, jamming, and cyber.

17 General Hyten, you were the architect of the Space  
18 Enterprise Vision when you were Commander of Air Force Space  
19 Command. I look forward to hearing more from you on what is  
20 required to sustain our space-based military advantage.

21 Senator Reed?

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1 STATEMENT OF HON. JACK REED, U.S. SENATOR FROM RHODE  
2 ISLAND

3 Senator Reed: Well, thank you very much, Mr. Chairman.  
4 Let me join you in welcoming General Hyten to the committee.  
5 We are grateful for your service and for the dedication of  
6 the many men and women who serve with you.

7 General, in a speech you gave earlier this year at  
8 Stanford's Center for International Security and  
9 Cooperation, you talked about the enormous responsibility  
10 you have assumed in ensuring our nuclear deterrent is  
11 capable of deterring threats that are existential to our  
12 homeland. It is a sobering responsibility to be the one who  
13 will give advice to the President on the options before him  
14 and then be the one who must direct the execution of those  
15 options, and we appreciate the skill and the fidelity you  
16 bring to that task. Thank you, sir.

17 The President has directed the Department to conduct a  
18 nuclear posture review to outline our strategy and posture.  
19 I look forward to considering that review when it is  
20 completed. As the chairman noted, the last one was done in  
21 2010 and the threat environment today is considerably  
22 different. The most significant developments are Russia's  
23 nuclear modernization and its bellicose threats about its  
24 nuclear capability and the significant advancements made by  
25 North Korea in its nuclear missile programs.

1           But there are other troubling advances. China is  
2 fielding its own SSBN that will patrol the Pacific, which  
3 will hold most, if not all, of our homeland at risk. In  
4 addition, Pakistan and India continue to develop their  
5 nuclear capabilities with tactical and long-range missiles,  
6 which in some cases reach well beyond their borders,  
7 affecting nations to which we have made security  
8 commitments.

9           In other words, General Hyten, while Russia with its  
10 near-peer nuclear standing is and should be the focus of the  
11 next nuclear posture review, the landscape is quickly  
12 shifting. It has become multi-polar, and how we structure  
13 our deterrence and the military options are changing  
14 rapidly.

15           Finally, we are now coming to grips with our own  
16 nuclear modernization. Because of the existential threat it  
17 deters, there has been bipartisan support for modernization  
18 of the nuclear triad in this committee. I am hopeful that  
19 this consensus continues because this is a 20-year  
20 acquisition program extending well beyond this and future  
21 administrations.

22           Let me touch on a few other topics.

23           In the area of space, we will value your expertise to  
24 develop long-term requirements and plans to counter the  
25 asymmetric threats to our space assets. I assume that will

1 be discussed further in tomorrow's closed session.

2 In the area of missile defense, you are responsible for  
3 synchronizing global missile defense planning and  
4 operations. I look forward to hearing your thoughts on the  
5 state of our homeland and regional systems. The  
6 administration has called for a missile defense review,  
7 which also needs to address the topics contained in a  
8 provision of the fiscal year 2017 Defense Authorization Act,  
9 which include left-of-launch missile defeat capabilities,  
10 cruise missile defense of the homeland, and the role of  
11 deterrence in missile defeat policy. We look forward to  
12 hearing your thoughts on this review and the ongoing  
13 improvements to our interceptors, sensors, and command and  
14 control system.

15 Thank you, Mr. Chairman. I look forward to the  
16 testimony.

17 Chairman McCain: Welcome back, General Hyten.

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1           STATEMENT OF GENERAL JOHN E. HYTEN, USAF, COMMANDER,  
2 U.S. STRATEGIC COMMAND

3           General Hyten: Thank you very much.

4           Chairman McCain: By the way, your complete statement  
5 will be made part of the record.

6           General Hyten: Thank you, Mr. Chairman.

7           And good morning, Chairman McCain and Ranking Member  
8 Reed, members of the committee.

9           Since the end of World War II, strategic deterrence has  
10 underwritten our Nation's security and preserved our way of  
11 life. Our nuclear force has been and always will be the  
12 backbone of our Nation's strategic deterrence.

13           Today the nuclear force of the United States is safe,  
14 secure, reliable, and ready. It is the foundation of the  
15 combatant command I am honored to lead.

16           However, in the 21st century, strategic deterrence is  
17 more than nuclear. It is the integration of all our  
18 capabilities in all domains across all the combatant  
19 commands, other governmental organizations, and alongside  
20 our allies.

21           The global security environment we operate in has  
22 changed. Our adversaries are developing advanced nuclear  
23 and conventional weaponry that rivals our systems and  
24 capability and capacity. They fully understand the  
25 warfighting capability that cyber and space can enable. To

1 maintain technological and operational superiority, our  
2 military must stay ahead of our adversaries. We must adapt  
3 and modernize.

4       The primary focus of our deterrence modernization  
5 efforts must address the entire nuclear infrastructure:  
6 first, the platforms, the ICBMs, the submarines, nuclear  
7 capable heavy bombers with their associated tankers.  
8 Second, the actual nuclear weapons themselves; and finally,  
9 the nuclear command and control architecture that enables  
10 the entire enterprise. They are all essential to this  
11 security of our Nation.

12       At a time when our adversaries have significantly  
13 modernized and continued to upgrade their nuclear forces,  
14 nearly all elements of the nuclear triad are operating  
15 beyond their designed service life. Any recapitalization  
16 program delays will further diminish these capabilities and  
17 affect our ability to execute our mission.

18       Space is a warfighting domain just like air, ground,  
19 maritime, and cyber. We must normalize how we plan and  
20 operate in space. The same concepts that govern other  
21 military operations also apply in space. Efforts taking  
22 place with the interagency, allies, partners, and commercial  
23 industry to develop capabilities, integrate, and execute  
24 operations is beginning to pay dividends. Our integrated  
25 missile defense network continues to disseminate across the

1 globe as a sign of our commitment to our allies and shared  
2 common defense.

3 Ballistic missile proliferation is increasing as more  
4 countries acquire greater numbers of ballistic missiles  
5 while simultaneously advancing technical sophistication to  
6 defeat U.S. defense systems. In response, we must continue  
7 to advance our missile defense capabilities and forces to  
8 assure allies and deter adversary aggression.

9 We are managing the unified command plan elevation of  
10 U.S. Cyber Command, which I fully support and engage with on  
11 a daily basis. Meantime, we also remain engaged with the  
12 Joint Staff and with United States Special Operations  
13 Command as they assume primary responsibilities to previous  
14 STRATCOM missions of joint intelligence, surveillance, and  
15 reconnaissance and combating weapons of mass destruction.

16 U.S. Strategic Command is a global warfighting command.  
17 All of our deterrent forces remain safe, secure, reliable,  
18 and ready. The morale of the force is also very high. They  
19 understand again the critical importance of our missions.  
20 Nevertheless, the U.S. faces significant challenges in  
21 sustaining the critical capabilities that underpin our  
22 strategic deterrent. Our Nation's strategic capabilities  
23 must be a core focus of our national security spending, and  
24 I am sure that sustained congressional support, support from  
25 this committee, combined with the hard work of the

1 exceptional men and women who support U.S. Strategic Command  
2 will ensure we remain ready, agile, and effective against  
3 both current and future threats.

4 So I look forward to engaging with you today and  
5 throughout my time as the U.S. STRATCOM Commander. Thank  
6 you for this opportunity, and I look forward to your  
7 questions.

8 [The prepared statement of General Hyten follows:]

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1 Chairman McCain: General Hyten, as we discussed and  
2 has been made well known, the Russians are in violation of  
3 the INF treaty. Is that true?

4 General Hyten: Yes, Chairman, that is true.

5 Chairman McCain: And what does this mean for the  
6 threat to the United States and our European allies?

7 General Hyten: It is a concern that we have to look at  
8 across the entire spectrum of what Russia has been doing.  
9 Russia has been modernizing their entire nuclear force.  
10 They started an aggressive effort in 2006. They continue  
11 that to this day. This breach of the INF Treaty that caused  
12 the deployment of a ground-launched cruise missile is a  
13 concern to us because we have not seen that for quite some  
14 time. It is another element we are going to have to  
15 consider as we look forward to how we deal with Russia.

16 Chairman McCain: How would we deal with the ground-  
17 launched cruise missile itself?

18 General Hyten: A single ground-launched cruise missile  
19 is not a significant threat to the United States or our  
20 allies. It shows the beginning of a deployment of a  
21 structure that could be a threat in the future.

22 Chairman McCain: If it is deployed in a significant  
23 number, what does that do?

24 General Hyten: We have no defense for it, especially  
25 in defense of our European allies. That system can range

1 and threaten most of the continent of Europe, depending on  
2 where it is deployed. We will talk about that in detail in  
3 the closed hearing tomorrow, Senator. But it is a concern,  
4 and we are going to have to figure out how to deal with it  
5 as a Nation.

6 Chairman McCain: There is certainly a compelling  
7 argument for Vladimir Putin's disregard for most norms of  
8 behavior that Russia, post Soviet Union, used to adhere to  
9 or even during the Soviet Union times.

10 General Hyten: I believe that the United States has  
11 only effectively dealt with Russia over the years from a  
12 position of strength. I think the only way we can deal with  
13 them in the future is from a position of strength. And I  
14 think the work of this committee and the work of my command  
15 can help that strength be established so we are in a good  
16 position to have future discussions with the Russians.

17 Chairman McCain: It seems to me to regain that  
18 position of strength, we need to give you some help. Is  
19 that right?

20 General Hyten: Yes, sir. I am asking for help on  
21 modernizing our entire forces and making sure we have the  
22 force structure that is needed to make sure we can deter not  
23 only today but in the future.

24 Chairman McCain: And what would be your priorities?

25 General Hyten: Senator, my priorities are, first, to

1 modernize the platform elements of the triad. I think when  
2 you look across the force --

3 Chairman McCain: Which are?

4 General Hyten: The platform elements of the triad are,  
5 first, the submarine, the Ohio class replacement program,  
6 the Columbia. That is number one. The next is the GBSD,  
7 the ground-based strategic deterrent, the replacement for  
8 our Minuteman ICBMs. The third piece is the B-21 bomber,  
9 which the long-range standoff weapon associated with that.  
10 That is the replacement to the air-launched cruise missile.

11 The second piece of the puzzle is the modernization of  
12 the nuclear weapons. The nuclear weapons themselves have to  
13 be modernized so they can last well into the coming decades.

14 And finally, a very important piece that I am probably  
15 most concerned about right now is the nuclear command and  
16 control modernization that we have to have as we move into  
17 the coming decades.

18 Chairman McCain: Under the present circumstances of  
19 sequestration, do you see any way of achieving all those  
20 goals?

21 General Hyten: Senator, if we do not get stable  
22 budgets -- when I spread all those programs out across the  
23 table -- and I have -- and I look at when they all deliver,  
24 they all deliver just in time. Take one example. The  
25 Columbia submarine. Every year that that program -- if it

1 slips 1 year, then the future commander of STRATCOM is down  
2 one nuclear submarine. 2 years, two nuclear submarines. We  
3 know that because there is a certain time in the future  
4 where the Ohio class submarine just will not go under the  
5 water anymore. Just the pressure on the vessel itself will  
6 not allow it to go down. That has to stay on time. If each  
7 of those programs delivers just in time and we do not have  
8 stable budgets, we know we already have a broken program.  
9 So I am very concerned about the ability to have stable  
10 budgets to support those programs.

11 Chairman McCain: And what does a continuing resolution  
12 do to you and your plans that you just outlined?

13 General Hyten: A continuing resolution makes it very  
14 hard to start new programs, which many of these programs  
15 will be new program starts. Each of these programs will  
16 ramp up in terms of funding over the years as we move from  
17 the development phase into a production phase. Every time  
18 you have a continuing resolution, you cannot ramp up the  
19 funding you need in order to do that. Every time that  
20 happens, you have a delay to the program. Every time that  
21 happens, you have a break to a contract. It is a very  
22 significant issue in terms of cost to the taxpayers, as well  
23 as risk to our national security.

24 Chairman McCain: And the men and women who are serving  
25 under your command?

1           General Hyten: Yes, sir. I talked a while ago about  
2 the improved morale. One of the great things I saw when I  
3 came back to U.S. Strategic Command was the morale in the  
4 submarines and the missile fields and the bombers and the  
5 space capabilities, the cyber capabilities. They understand  
6 how important it is what they do, but they also are dealing  
7 with very old equipment. We have a commitment to them as a  
8 Nation that we need to give them the tools that they need in  
9 order to do their job. Their enthusiasm can only last a  
10 certain amount of time. If we do not follow through on that  
11 commitment, that morale will be brought into question.

12           Chairman McCain: Senator Reed?

13           Senator Reed: Well, thank you very much, Mr. Chairman.

14           Again, General, thank you for your service.

15           In last year's National Defense Act, we asked for a  
16 review of all the options against our potential threats  
17 left-of-launch and right-of-launch. And one of the issues  
18 that I think you will talk about in detail tomorrow but in  
19 public is the very little short time between a warning and a  
20 launch in many of our adversaries. The left-of-launch is  
21 something we have to look at. Right-of-launch, the first  
22 issue is boost phase.

23           And can you give us an idea here of where we are with  
24 respect to boost phase interceptors?

25           General Hyten: I can give more information in the

1 closed hearing tomorrow. But at a general level, we do not  
2 have a significant or really any boost phase intercept  
3 capability. It is a very challenging technology because you  
4 basically have to be properly positioned with the right kind  
5 of weapons capability in order to respond to an immediate  
6 launch. If you look at the North Korean launch on February  
7 the 11th, out of a new location, a new capability, a new  
8 transporter, erector, launcher, all those things bring the  
9 time of warning down to a very small number. So, therefore,  
10 you have to be properly positioned.

11 Now, I will talk tomorrow about some new technologies  
12 that are becoming available that I think can begin to  
13 address that for the first time. But it is not in the near  
14 term, Senator.

15 Senator Reed: But if we can pursue these technologies  
16 successfully, it would provide a significant advantage given  
17 the current deterrence we have.

18 General Hyten: Yes, Senator. I cannot think of a  
19 better thing than if somebody launched a threat missile, to  
20 drop it right back on their head.

21 Senator Reed: The nuclear posture review, as we both  
22 noted, is underway. Can you give us kind of an overview of  
23 the significant threats that this review will deal with and  
24 illustrate for us?

25 General Hyten: So, the nuclear posture review just

1 kicked off a 6-month timing asked for by the administration  
2 and the Secretary of Defense. So we are going at that. The  
3 first thing we will look at is the threat scenario. We will  
4 look at Russia, China, North Korea, and Iran in particular  
5 to make sure we understand what those threats are. Iran is  
6 in compliance with JCPOA right now, which is keeping that  
7 nuclear capability down, but they still have aggressive  
8 missile programs that we need to look at. So we will look  
9 across that spectrum of the threat. We will look at what  
10 Russia is doing in terms of violation of the INF treaty, and  
11 then we will look at military options in order to respond to  
12 what we see in the threat. That is the basic structure of  
13 the nuclear posture review.

14 Senator Reed: One of the disconcerting comments that  
15 the Russians continue to make is that they have a strategy  
16 now of escalate to deescalate with nuclear weapons. And I  
17 think you quite succinctly describe that escalate to  
18 deescalate is not that. It is escalate to win, which forces  
19 us to escalate to stop them from winning. You know, no pun  
20 intended, but it is an escalator to catastrophe in my view.

21 So can you comment upon that statement? You know, how  
22 do we deal with that?

23 General Hyten: So I think it is one of the most  
24 challenging military questions you have. The good news is  
25 that we are addressing it with our geographic combatant

1 commanders in large-scale exercises. We just did one with  
2 the European Command. We will do one with the Pacific where  
3 we actually address what those situations really would look  
4 like. It is important that we look at them seriously,  
5 understand what those pieces are. When we say escalate to  
6 win, what does that really mean? And in order for us to  
7 win, we have two choices: one, to prevent that escalation;  
8 or two, respond in such a way after that escalation that  
9 they would want to stop any aggression that they have going  
10 on. Both of those are challenging situations, and we have  
11 to walk through the various options, which we are.

12 Senator Reed: It would seem to me also that there has  
13 to be some means to communicate to avoid sort of the  
14 misstep, if you will. Is that part of the gaming you are  
15 doing, kind of how do we communicate our intention not to  
16 accept this but to engage again? Is that part of it?

17 General Hyten: I continue to advocate engagement. I  
18 know Secretary Mattis has said we have had a long history of  
19 engagement, not a long history of success. I certainly  
20 agree with that statement. But, nonetheless, I would like  
21 to have an aggressive State Department engagement, an  
22 aggressive Department of Defense engagement that includes  
23 mil-to-mil engagements with my counterparts in Russia, China  
24 in particular. I think it is always better to be able to  
25 pick up the phone and talk to somebody before something bad

1 really happens to have some kind of relationship. Also I  
2 want to look across the table and make sure they understand  
3 I am very serious about this business.

4 Senator Reed: Thank you very much, General.

5 General Hyten: Thank you, Senator.

6 Chairman McCain: Senator Inhofe?

7 Senator Inhofe: General Hyten, I think we would all  
8 ask about the same questions that have been asked by the  
9 previous two members, and it is always a surprise when  
10 people find out that there is some question as to whether or  
11 not we have the capability that we know around this table  
12 and that you know we do not. You have said, of course --  
13 you made it very clear we have the oldest nuclear arsenal in  
14 the world, warheads and bombs produced 30-40 years ago, B-52  
15 and all of that.

16 The last time the 10-year posture review took place,  
17 there were assumptions. The chairman mentioned this in his  
18 opening statement. One of the assumptions -- and this was  
19 for the 2010. Number one, Russia is no longer an adversary,  
20 and number two -- and this is kind of disturbing -- though  
21 the role of nuclear weapons in the United States national  
22 security and U.S. military strategy has been reduced  
23 significantly in recent decades, further reductions can and  
24 should be taken. How do you respond to those two  
25 assumptions? Bring that forward to the current day.

1           General Hyten: So from a military perspective, I think  
2 it is always important that anybody that has the threat to  
3 fundamentally destroy your nation, which is what Russia and  
4 China both have, they have to be considered an adversary. I  
5 think not considering them an adversary causes you to make  
6 decisions that could put the Nation at risk. Therefore, I  
7 have always considered Russia to be an adversary, a  
8 strategic competitor. I think it is important for us to  
9 look at Russia that way.

10           The second piece of the equation. If you look back not  
11 just to the 2010 nuclear posture review, but if you look  
12 back 20 years -- and that is across multiple  
13 administrations, multiple Congresses, change of leadership  
14 in the military -- you see a fundamental de-emphasis of  
15 nuclear weapons in our national security strategy. And then  
16 look at what our adversaries have done in response to that.

17           I think the assumption would be if we lower the  
18 reliance on nuclear weapons and our adversaries do the same  
19 thing, they did just the opposite. Russia in 2006 started a  
20 huge, aggressive program to modernize and build new nuclear  
21 capabilities. They continue that to this day. New  
22 ballistic missiles, new weapons, new cruise missiles,  
23 significant air-launched cruise missile capabilities, now  
24 the ground-launched cruise missile capabilities. China has  
25 done the same thing. Hypersonic glide vehicles on both

1 sides that bring new threats to bear. Our adversaries have  
2 taken the exact opposite view of our de-emphasis and have  
3 emphasized those nuclear capabilities once again.

4 Senator Inhofe: That is right. They say further  
5 reductions can and should be taken. That is where we have  
6 been. It is very disturbing. I think tomorrow in a closed  
7 session, you might be thinking about an answer to the  
8 question because you say that Russia has always operated  
9 from a position of strength. And we need to talk about the  
10 relative strength between us and Russia.

11 The last thing I would mention is we have not spent  
12 quite as much time that I feel would be justified with North  
13 Korea. Admiral Gortney said it was prudent to assume -- now  
14 this is a year ago -- that North Korea could conduct a  
15 nuclear strike on the U.S. despite assessments of a very low  
16 probability of success. Well, that has changed now I think.  
17 They have advanced a long ways.

18 I think in your statement, North Korea are actively  
19 developing ballistic missiles that could range the  
20 continental United States, conducted a nuclear test in  
21 September of last year, and appeared to be preparing to  
22 conduct another test in the near future. It is very  
23 disturbing.

24 If you were to look at Russia, China, and North Korea  
25 and Iran, what would you believe would be the greatest

1 threat? What bothers you the most?

2 General Hyten: I think Russia is the greatest threat.  
3 What I am concerned about most nights is North Korea because  
4 we do have an effective deterrent today that I believe  
5 deters our adversaries, and if you watch the way Russia  
6 acts, every step is slow, but they are taking steps forward.  
7 China. They are acting, but every step is measured. North  
8 Korea. I am not sure exactly what they are going to do  
9 tonight. Every time there is a launch, February 11th, March  
10 the 5th this year, the whole network comes up. We bring the  
11 entire power of my command to bear on the problem, the power  
12 of Northern Command. We are looking at what we have to do.  
13 The Pacific. They are all involved. Those are very  
14 concerning moments to me because every time they launch, we  
15 are not sure if this is a threat missile or not.

16 Senator Inhofe: Well, yes. I think you could probably  
17 say that North Korea is different from the rest in that they  
18 are totally unpredictable. Is that accurate?

19 General Hyten: They are. I guess totally  
20 unpredictable would be a fair statement, sir, because every  
21 time they launch, I am not sure what that launch is going to  
22 be. That would be the definition of unpredictable.

23 Senator Inhofe: Thank you, General.

24 General Hyten: Thank you, Senator.

25 Chairman McCain: Senator Shaheen?

1 Senator Shaheen: Thank you, Mr. Chairman.

2 And thank you, General, for being here today.

3 I want to follow that line of thinking because in your  
4 statement, you have been clear with us that our nuclear  
5 capabilities are the foundation and the bedrock of our  
6 defense. And certainly we saw that deterrence model during  
7 the Cold War, and you talked about it just now in terms of  
8 China and Russia. But do we have any reason to believe that  
9 North Korea is deterred at all by our nuclear armaments?

10 General Hyten: I would have to say that they are  
11 deterred to a certain extent because fundamentally the  
12 existence of their nation is threatened by our strategic  
13 deterrent capability. So there is a deterrent value.

14 But their actions clearly show that the deterrent is  
15 fundamentally different when we think about North Korea.  
16 What impacts Kim Jung-un, what impacts the North Korean  
17 actions is a very difficult thing to understand, to get  
18 after. But the thing about North Korea is that given where  
19 it is on the globe, it is very important that our actions  
20 are in line with our allies, especially South Korea and  
21 Japan, because talk about in your back yard, it is in the  
22 back yard of South Korea and Japan.

23 Senator Shaheen: And so as we look at what options we  
24 have to respond to what North Korea is doing, clearly  
25 sanctions are one, and we have imposed those and there is an

1 effort to look at even stricter sanctions. What other  
2 options do we have in response to what North Korea is doing?

3 General Hyten: I think any solution to the North  
4 Korean problem has to involve China. I am a military  
5 officer. My job is to provide military options to the  
6 President, and along with the other combatant commanders, I  
7 will always have military options ready for the President if  
8 he deems, in association with Congress, that there is  
9 something that we have to do. I will provide those military  
10 options. So that is my job.

11 But I look at it from a strategic perspective, and I  
12 cannot see a solution that does not involve China.

13 Senator Shaheen: But China has suggested they do not  
14 have as much influence as we think that they do. Do you  
15 think that is accurate?

16 General Hyten: Again, if you talk about in your back  
17 yard, China is the definition of North Korea's back yard.  
18 So the trade that North Korea has really goes north across  
19 the Chinese border and south from China into North Korea.  
20 That is a significant element. But I am a military officer,  
21 not a State Department official or an economic expert. But  
22 I just look at the world and it is hard for me to see a  
23 solution without China.

24 Senator Shaheen: You briefly touched on cybersecurity  
25 in your opening statement. More and more we are seeing that

1 cyber is being used as a weapon by our opponents. I have  
2 asked this question to several generals and have not gotten  
3 a very clear answer about how we better coordinate our cyber  
4 activities and whether we have a cyber strategy that  
5 involves not just responding but also being aggressive about  
6 how we use cyber. How should we be thinking about that?  
7 And do you think that is an accurate assessment, or am I  
8 missing something?

9 General Hyten: So I think it is still an element that  
10 is the subject of significant discussion. So I will try to  
11 clarify it from my perspective, and hopefully that is  
12 helpful to you.

13 From my perspective, there are two elements of cyber.  
14 One is the military element, and the other is the broader  
15 civilian use of cyber. And they require two different sets  
16 of authorities. But when I look at the cyberspace domain,  
17 the authorities that I think we need as a nation are no  
18 different than any of the authorities that we have in space,  
19 and air and land and maritime. We need to have the  
20 authorities that if there is a bad actor, a bad guy that is  
21 in the cyberspace domain, the focus of our military has to  
22 be to attack and eliminate the bad actor. But we cannot do  
23 that in a way that impacts the domain that we are operating  
24 in. But we should not be restricted on following that  
25 actor, wherever that actor goes.

1           Senator Shaheen: Well, in fact, do we not have blurred  
2 lines when it comes to cyber today because we have -- or at  
3 least based on what I have read, it appears that we have  
4 cyber actors that are doing the work for nation states, but  
5 they may not be in the military. So how do we address those  
6 kinds of threats?

7           General Hyten: So to me, if the question is what  
8 effect are they trying to create, if the effect they are  
9 trying to create is a military effect, then it is the  
10 responsibility of U.S. Cyber Command to be able to respond  
11 to that. If it is a criminal effect, it is not the  
12 responsibility of Cyber Command. It is the responsibility  
13 of the Department of Homeland Security, working with the FBI  
14 and other elements to work with those kind of pieces. We  
15 need to draw those lines clearly and focus on the effect and  
16 the target not on the domain itself. When we just focus on  
17 the domain itself, that is when we get all the confusion  
18 because cyber is everywhere. Why should we stop a military  
19 action because a server happens to be located in a specific  
20 territory, including the United States? We have to look at  
21 it as an operating domain. The effect and the target are  
22 the key.

23           Senator Shaheen: Thank you very much.

24           General Hyten: Thank you, ma'am.

25           Chairman McCain: Senator Wicker?

1           Senator Wicker:  General Hyten, thank you for your  
2 service and for your testimony today.

3           Mr. Chairman, I would like to add into record at this  
4 point an article in DOD News by Jim Garamone, published  
5 March 31st of this year.

6           Chairman McCain:  Without objection.

7           [The information follows:]

8           [COMMITTEE INSERT]

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1           Senator Wicker: General, in this article, you state  
2 that we need to spend roughly 6 percent of the defense  
3 budget to modernize our country's nuclear arsenal. That  
4 would be an increase from 3.5 percent currently. Over what  
5 period of time do we need to increase from 3.5 percent to 6  
6 percent of the defense budget?

7           General Hyten: In broadest terms, it is 30 years, but  
8 that is not perfectly accurate because there will be a peak  
9 and a valley. So it will peak as we go into significant  
10 production levels. That will happen in approximately 10  
11 years. That production peak will continue for roughly  
12 another decade as we deploy the new capabilities across each  
13 of the platforms I discussed earlier. And then it will drop  
14 off again over the last. But roughly, it is a 30-year time  
15 frame.

16           Senator Wicker: Well, how about for the next few  
17 years?

18           General Hyten: For the next few years, there will be a  
19 significant plus-up, but it will not grow to 6.5 percent  
20 until we actually get into the development programs, which  
21 are a couple years away.

22           Senator Wicker: You quote approvingly the Air Force  
23 Chief of Staff General Goldfein in this article. Is this a  
24 position of General Goldfein?

25           General Hyten: That is the position of the United

1 States Air Force and General Goldfein and the Acting  
2 Secretary Disbrow.

3 Senator Wicker: Is it the position, to your knowledge,  
4 of the Secretary of Defense?

5 General Hyten: To my knowledge, the Secretary of  
6 Defense supports -- I know he supports modernizing the  
7 triad. He testified in front of this committee to that  
8 effect. But we will address all those issues in the nuclear  
9 posture review with the new administration. Just to  
10 emphasize that point again, I think it is a point to  
11 remember. The new administration will take a look at the  
12 entire threat posture, the entire modernization plan, but  
13 the Secretary of Defense, the Air Force leadership, and the  
14 Navy leadership have all pledged support to modernizing the  
15 triad.

16 Senator Wicker: Now, in mentioning your priorities in  
17 response to an earlier question, you mentioned five  
18 priorities in modernization, and the first one you mentioned  
19 was submarines, the Ohio replacement or the Columbia class.  
20 So I was interested to see that you listed that first.  
21 Would it be correct to say that not only is the first thing  
22 you mentioned, but it is your first priority?

23 General Hyten: So the first priority is the triad.  
24 Inside the triad, the first priority is the submarine. But  
25 it is important to note that the triad as a whole has to be

1 modernized. Nonetheless, if we do not get after the  
2 submarine, then we run a very precipitous risk in about a  
3 decade as the Ohio class reaches end of life.

4 Senator Wicker: That was going to be my next question.  
5 You painted a painted a pretty grim picture of the future of  
6 the Ohio class if we do not start moving. And I think you  
7 said that it will be dangerous to actually put it under the  
8 water.

9 General Hyten: You can probably tell from my uniform I  
10 am not a naval officer.

11 Senator Wicker: I do see that.

12 General Hyten: But I do have good friends who are  
13 naval officers, who are submariners, and they have gone  
14 through the analysis with me in detail, including my deputy,  
15 Vice Admiral Chas Richard. We have gone through that in  
16 detail, and they can tell me that each submarine is built to  
17 go down under pressure a certain number of times, and once  
18 you reach the end of life, you know when that is and you can  
19 predict very accurately when that is. And once you reach  
20 the end of life, it cannot go down anymore. A submarine on  
21 the top of the water is not an effective deterrent.

22 Senator Wicker: And that end of life might occur as  
23 soon as when?

24 General Hyten: It starts towards the end of the next  
25 decade. I can go into the details of when that would be in

1 the closed hearing tomorrow, but it is towards the end of  
2 the next decade.

3 Senator Wicker: What can you tell us in this venue  
4 today about the modernized features of this new Columbia  
5 class submarine?

6 General Hyten: I think the most significant element of  
7 the modernized feature is the actual nuclear reactor. The  
8 nuclear reactor on the Ohio class systems basically required  
9 refuel and refit midway through its service life. The  
10 Columbia class will have a 42-year reactor. So once it goes  
11 in service, besides the normal maintenance and routine  
12 servicing, it will not have to come back for a refueling of  
13 the reactor, which will allow us to operate with 12 Columbia  
14 submarines versus 14 of the Ohio class.

15 Senator Wicker: What about advanced materials in these  
16 new subs?

17 General Hyten: There will be significant advanced  
18 materials, but I cannot talk about that in detail in this  
19 hearing. But it will be materials that will increase the  
20 survivability and performance of the submarine in a threat  
21 environment.

22 Senator Wicker: Thank you, sir.

23 Chairman McCain: Senator Kaine?

24 Senator Kaine: Thank you, Mr. Chair.

25 Thank you, General Hyten.

1           For the hearing last year, this posture hearing, the  
2 written testimony had this quote in it. There is continued  
3 adherence to the new strategic arms reduction, New START, by  
4 both nations. That is a quote, and that meant the U.S. and  
5 Russia. Is that still the case?

6           General Hyten: That is still the case, Senator. The  
7 next key date is 2018. That is when we have to meet the New  
8 START limits. We are on track to do that. As far as we can  
9 tell, the Russians are on track to do that. But that 2018  
10 date, early 2018, we will watch that very closely.

11          Senator Kaine: That testimony was also in the  
12 testimony from last year. We are on track to achieve New  
13 START limits of 1,550 deployed warheads and 700 deployed  
14 delivery systems by February 2018. And as far as you know,  
15 we are on track and the Russians are on track for their  
16 obligations as well.

17          General Hyten: I know we are on track, and the reports  
18 I get from the intelligence community and from the State  
19 Department is the Russians are on track as well.

20          Senator Kaine: Have you been directed to review the  
21 agreement or in any change our plans for compliance with the  
22 agreement?

23          General Hyten: I have not been directed to review the  
24 New START agreement. I am reviewing the INF agreement based  
25 on the recent --

1 Senator Kaine: Russian activity.

2 General Hyten: Russian activity.

3 Senator Kaine: But in terms of compliance with the New  
4 START agreement, you have not been directed to review or  
5 offer advice about changing strategies on compliance with  
6 New START.

7 General Hyten: No specific direction on that, Senator.

8 Senator Kaine: In your opinion, would it be in the  
9 U.S.'s strategic interests to increase our nuclear weapons  
10 stockpiles?

11 General Hyten: I have stated on the record multiple  
12 times -- I will state it on the record again today -- I  
13 support the limits that are in the New START treaty. I also  
14 look out to the future and understand there are non-  
15 accountable weapons especially in the Russian side that we  
16 need to start addressing. But from a strategic weapons  
17 perspective, I support the limits that are in the New START  
18 treaty.

19 Senator Kaine: Senator Wicker was asking you about the  
20 Columbia class. Will the Columbia class require a change in  
21 the design and plans for the Trident missile, kind of a  
22 design change?

23 General Hyten: It will not require a design change.  
24 We will be able to walk into that. But Admiral Terry  
25 Benedict, the Director of Strategic Programs in the Navy,

1 has begun to look at the Trident to make sure that we have a  
2 plan for how we would modernize that capability sometime in  
3 the future. But that is not on the near term list or on my  
4 priority list to worry about right now.

5 Senator Kaine: Thank you for that.

6 You have a brief section of testimony at page 13 of  
7 your written testimony about cyber. I applaud the direction  
8 signed into law in the fiscal year 2017 National Defense  
9 Authorization Act and remain committed to the elevation of  
10 U.S. Cyber Command to a unified command as soon as possible.

11 Could you talk a little bit about what is the status of  
12 efforts to do that? Are there milestone dates that have  
13 been set, and what is our progress towards those milestones?

14 General Hyten: Admiral Rogers, the Commander of U.S.  
15 Cyber Command -- we have submitted our plan to the  
16 administration. It is now going through their evaluation.  
17 The administration gets a vote. The Secretary of Defense  
18 gets a vote. I will just say that both Admiral Rogers and I  
19 would like that to happen sooner rather than later just to  
20 normalize that command and make sure that we can kind of  
21 develop normal command relationships between Cyber Command  
22 and all the combatant commanders, including U.S. Strategic  
23 Command.

24 Senator Kaine: And this is a consensus set of  
25 recommendations that you have delivered to the

1 administration.

2 General Hyten: We have.

3 Senator Kaine: The last question is this. Anti-  
4 access/area denial systems are more commonplace now. Does  
5 that render weapons like the B-61 sort of becoming obsolete,  
6 and is there a need for additional systems like gravity  
7 bombs as part of a future deterrent to take care of the  
8 A2/AD systems?

9 General Hyten: I think from the air perspective of the  
10 triad, the three elements: a stealth bomber, which is the  
11 B-21 that can penetrate air defense systems; a gravity bomb  
12 that could provide flexible options because that provides  
13 the most flexible element of the triad because that gives  
14 the President the most time to make a decision; and then the  
15 air-launched cruise missile, which basically improves the  
16 flexibility of the B-21 because really the last thing you  
17 want to do is have a bomber that is only able to attack a  
18 target right below it. You want it to be able to reach out.  
19 So those three elements together create the most flexibility  
20 in the air leg of the triad, and that is our recommended  
21 program that the Congress has supported.

22 Senator Kaine: Thank you.

23 Thank you, Mr. Chair.

24 Chairman McCain: Senator Fischer?

25 Senator Fischer: Thank you, Mr. Chairman.

1 Welcome, General. It is a pleasure to see you again.

2 We have had some discussion on this in previous  
3 questions about the different geopolitical landscape that we  
4 are living in today, and some describe it as a return to the  
5 great-power competition. Russia and China are deploying far  
6 more capable nuclear systems than they were in 2010.

7 What implications do you think that this has on our  
8 nuclear forces? And specifically, do you believe it  
9 increases their importance and the need to modernize them?  
10 You have touched on this, but I would like to hear your firm  
11 answer.

12 General Hyten: So the key element is always having a  
13 ready, reliable strategic deterrent. And we have that  
14 today. So even though our adversaries have modernized their  
15 nuclear capabilities, we still have an effective deterrent.  
16 The question will we have an effective deterrent 10 years  
17 from now and 20 years from now. The answer to that has to  
18 be yes. That is why we have to modernize, and that is why  
19 it has to be a significant priority for this country.

20 Deterrence is going to be expensive, but war is always  
21 more expensive than deterrence.

22 Senator Fischer: The chairman asked you about the  
23 platforms and the need to modernize those. And you were  
24 referring to the B-1 and the GBSD, the LRSO, the Columbia  
25 class, and the need to continue on and meet those deadlines

1 and meet them in a timely manner to make sure that we do  
2 have the resources necessary.

3 When we look at the new posture report that is going to  
4 be coming out, do you believe that that report should  
5 validate those programs?

6 General Hyten: I do, and I have stated that to the  
7 administration. I have stated that to my boss. But the  
8 nuclear posture review should look at the entire enterprise.  
9 It should also look at things beyond what is in the triad.  
10 We should look at what do we have to do to respond to the  
11 INF breakout. What do we have to do to respond to now a  
12 ground-launched cruise missile? Hypersonic glide vehicles  
13 are threats that both Russia and China are building now.  
14 They are very significant in terms of our ability to see  
15 them and provide warning. We need to figure out how to deal  
16 with those. But I think the baseline is the triad, and the  
17 baseline is modernizing the triad.

18 Senator Fischer: And in response to Senator Inhofe,  
19 you were talking about the escalate/deescalate in our  
20 relationship with Russia. And a former Secretary of Defense  
21 Harold Brown said in 1979 that the Soviet spending has shown  
22 no response to U.S. restraint. When we build, they build.  
23 When we cut, they build.

24 From your comments, I would assume that you agree with  
25 those remarks from Secretary Brown.

1           General Hyten: Well, I look at the evidence, and the  
2 evidence is when we de-emphasize nuclear weapons, both our  
3 primary adversaries, Russia and China, have both increased  
4 their focus on nuclear weapons. Advanced capabilities.  
5 They also looked at now threatening space and threatening  
6 cyberspace. They went a significant direction and a  
7 different deterrent element than we did. So I believe you  
8 always have to look at your adversaries and understand what  
9 they do and then make sure you are in a position of strength  
10 relative to your adversaries. That is what deterrence is  
11 all about.

12           Senator Fischer: The chairman also asked you about  
13 Russia's violation of the INF treaty. Do you believe that  
14 we need to respond to that violation? The previous  
15 administration talked about counterforce options and  
16 countervailing capabilities, active defenses, but ultimately  
17 took no action to develop those. Do you think that we need  
18 to now?

19           General Hyten: I think every step that Russia takes  
20 has to be responded to. This is just the next step, and we  
21 have to figure out as a Nation how to respond. It is not  
22 necessarily a military response, but the Nation has to  
23 figure out how to respond.

24           Senator Fischer: And in this setting, can you tell us  
25 which options you believe would be the most effective?

1           General Hyten: No, ma'am, not in this setting. Those  
2 choices are my boss' choices as well. But I will be glad to  
3 talk to that in a closed hearing tomorrow.

4           Senator Fischer: Thank you.

5           In your opening statement, you note the unauthorized  
6 flights of unmanned aerial systems over Navy and Air Force  
7 installations. Can you discuss this in greater detail? And  
8 are these incidental activities, or do you believe they are  
9 deliberate actions?

10          General Hyten: So I think so far they have been  
11 incidental activities, but the fact that they are occurring  
12 and then if you watch what is happening overseas in the  
13 CENTCOM theater with the use of lethal UAVs and the use of  
14 UAVs for surveillance on the part of a terrorist adversary,  
15 I am very concerned that those same kind of UAVs could be  
16 employed against our weapon storage facilities, especially  
17 on the nuclear weapon storage facilities.

18          So just in the last week, I have signed out guidance to  
19 my forces to give them kind of parameters on how they should  
20 respond if they see a threat UAV or a surveillance UAV and  
21 to give them specific guidance. So a young marine at King's  
22 Bay or an airman at F.E. Warren does not have to worry about  
23 what should I be doing when I see that. So I provided very  
24 specific guidance that is classified guidance, but I would  
25 be glad to share that with the committee.

1 Senator Fischer: Thank you, sir.

2 Chairman McCain: Senator Warren?

3 Senator Warren: Thank you, Mr. Chairman.

4 And thank you, General Hyten, for your leadership and  
5 for your generosity with your time yesterday visiting my  
6 office.

7 I just quickly want to ask you about the importance of  
8 our non-military foreign assistance and other civilian  
9 instruments of national power to your mission. General, is  
10 it accurate to say that you work with the State Department  
11 and other civilian partners on nuclear nonproliferation and  
12 other efforts to detect and deter strategic threats to the  
13 United States?

14 General Hyten: We have a very active role with the  
15 State Department not just on the nuclear side but on space  
16 and cyber as well because each of those is a very  
17 international set of issues, and the State Department has  
18 been very aggressive in working those issues along with U.S.  
19 Strategic Command and the other combatant commands as well.

20 Senator Warren: Thank you.

21 And the budget proposal put out by the Trump  
22 administration calls for about a 29 percent cut to the State  
23 Department and significant cuts to other agencies with  
24 international responsibilities.

25 General, I want to ask you a narrower question. Would

1 funding cuts to agencies that conduct diplomacy and other  
2 civilian functions make your job easier or more difficult?

3 General Hyten: So I am not an expert on the budgets --

4 Senator Warren: I am not asking you to be one.

5 General Hyten: But I can tell you that I feel I  
6 desperately need and all the military commanders need an  
7 active foreign engagement process that uses the Department  
8 of State. We need that kind of partnership. We need the  
9 State Department reaching out into the international  
10 community. It cannot be left to the military to do those  
11 kind of pieces. The State Department does. I have had  
12 great relationships with men and women in the State  
13 Department that have helped us significantly over the years.  
14 We need to have that continue into the future, as well as  
15 other departments that reach out.

16 Senator Warren: And I take it from what you are saying  
17 -- I am sorry to interrupt, but I just have limited time  
18 here -- that significant cuts would make it more difficult  
19 for you to do your part of your job.

20 General Hyten: I would have to look at where the cuts  
21 are, and I have not looked at where the cuts are. But I  
22 need that support.

23 Senator Warren: You need that support.

24 So let me ask you another question, General. As you  
25 know, the nuclear command, control, and communications, NC3,

1 system is critically important to providing secure and agile  
2 communications between our field forces and the President in  
3 case of a nuclear attack or other nuclear-related emergency.  
4 And you expressed concern before this committee last year  
5 about the aging capabilities of the NC3 system and the need  
6 to modernize it. And as Chairman McCain noted earlier, you  
7 publicly said just last month that, quote, any delay,  
8 deferment, or cancellation of NC3 modernization will create  
9 a capability gap potentially degrading the President's  
10 ability to respond appropriately to a strategic threat.

11 I assume you still feel that way. Is that right?

12 General Hyten: I do. It is my biggest concern on the  
13 modernization effort.

14 Senator Warren: Biggest concern.

15 So let me ask you, are you confident that the  
16 Department is providing the funding and staffing necessary  
17 to keep NC3 on track?

18 General Hyten: I am confident that the Department has  
19 taken the right steps. The funding is now rolling in the  
20 right place. The staffing is not quite there yet,  
21 especially on the Air Force side. We had a hiring plan that  
22 was delayed slightly by the hiring freeze. We were given  
23 authority to waive that for critical nuclear missions. We  
24 have done that through the Air Force. The Air Force is now  
25 beginning to hire those folks.

1           But the challenge is once you start hiring those  
2 people, it is not like overnight that all of a sudden the  
3 problem is solved. They have to come on board, become  
4 experts. That takes a matter of time. So even though the  
5 funding is flowing, we have a good plan, people are coming,  
6 it is not an overnight solution to the problem which is why  
7 it requires constant attention.

8           Senator Warren: I appreciate that.

9           We need to have a secure and reliable NC3 capability,  
10 which is why I agree that NC3 modernization without delay  
11 should be a top priority. We have the most potent nuclear  
12 triad on earth, but it becomes much less useful if NC3 ages  
13 out and does not work effectively.

14           I have just under a minute left, but I would like to  
15 ask you very briefly about the resiliency of the satellite  
16 constellations that we rely on for civilian and military  
17 communications. Do you have confidence in the ability of  
18 our communications satellites to withstand jamming? And how  
19 are you thinking about integrating our satellites into the  
20 Department's overall operational plan?

21           General Hyten: So I have not been happy with how we  
22 are structured from a resilient perspective with satellite  
23 communications. So there are two elements. Number one, I  
24 think we need to change our architectures and build a more  
25 resilient architecture so that we can more effectively fight

1 in the future. And the second piece of that is that we have  
2 to figure out how to use the capabilities we have today in a  
3 better way. We have actually built significant anti-jam and  
4 warfighting capability into many of our satellites, but we  
5 do not have the means to effectively command and control it  
6 at the time of a fight. We need to work both of those  
7 things, Senator, in the future.

8 Senator Warren: Thank you, and we can do more follow-  
9 up on this later. Thank you.

10 Thank you, Mr. Chairman.

11 Chairman McCain: Senator Rounds?

12 Senator Rounds: Thank you, Mr. Chairman.

13 General Hyten, first of all, thank you for your service  
14 to our country.

15 In the Defense Science Board's February of 2017 task  
16 force report on cyber deterrence, two recommendations are  
17 provided to improve the cyber resilience of the U.S. nuclear  
18 forces. One recommendation was that the Secretary of  
19 Defense direct you to conduct an annual assessment of the  
20 cyber resilience of the U.S. nuclear deterrent, including  
21 all essential nuclear components. These would include  
22 nuclear command, control, and communications, as Senator  
23 Warren was alluding to, the platforms, the delivery systems,  
24 and the warheads. Specifically, you would be directed to  
25 state your degree of confidence in the mission assurance of

1 the nuclear deterrent against a top tier cyber threat.

2 What do you consider to be a top tier cyber threat to  
3 our Nation's nuclear systems?

4 General Hyten: So I see a top tier cyber threat being  
5 Russia and China in particular because they have the ability  
6 to threaten the existence of this Nation. And so one of the  
7 reasons you have to be able to protect the nuclear command  
8 and control capability is that is fundamental to deterrence.  
9 If that is ever brought into question, that lowers our  
10 deterrent posture to top tier threats, and we have to make  
11 sure we never allow that to happen.

12 Senator Rounds: What can Congress do to help you  
13 mitigate this threat to our nuclear systems?

14 General Hyten: I think the Congress can be very  
15 demanding of the services to make sure that as we modernize  
16 our nuclear command and control capability, we just do not  
17 modernize a 20th century architecture, in other words, move  
18 from 8 and half inch floppy disks to 5 inch floppy disks.  
19 That is really not of interest. We have to modernize the  
20 entire architecture. And so as you see the modernization  
21 plans coming in, make sure, number one, it is a 21st century  
22 information architecture, and number two, make sure that we  
23 are cyber secure as we go through that because we will  
24 introduce cyber vulnerabilities as we walk into that. But  
25 if you work it right from the beginning, you can make sure

1 that that threat is mitigated as we go forward.

2           Senator Rounds: The Defense Science Board also  
3 recommended that the DOD acquisition executive oversee  
4 immediate establishment of a program of action with  
5 milestones to support cyber certification of U.S. nuclear  
6 forces, as well as nuclear command, control, and  
7 communications. This certification process would assume  
8 considered adversary attack against nuclear systems based on  
9 extensive preparation. Examples are attacks via the supply  
10 chain, insider threats, and physical sabotage or attack, in  
11 addition to remote cyber attacks.

12           Are you confident that the timeline for initial and  
13 full operational capability of the cyber mission teams that  
14 are tasked to support your command are proceeding at a pace  
15 that would enable you to meet such a certification? I  
16 noticed that you indicated that perhaps the Air Force is a  
17 little bit behind in their time frame.

18           General Hyten: So the answer is yes and no, Senator.  
19 Yes, I am happy with where the cyber mission force is going  
20 right now, but the no part is that I do not think the cyber  
21 mission force currently has the capacity necessary to meet  
22 all of the requirements that we have across the Department.

23           We have also divided the cyber mission force, you know,  
24 assigned to different combatant commanders. So I have  
25 certain assigned elements of the cyber mission force.

1 General Scaparrotti does. Admiral Harris does. I think we  
2 have to start looking at cyber like we look at special  
3 operations, as a high-demand, low-density element that we  
4 need to allocate to the highest priority, and we have to  
5 look at that from the top level down. And I will work  
6 inside the Department to advocate for those kind of  
7 capabilities because the demand signal is going to go  
8 nowhere but up and the capacity is not sufficient to meet  
9 all of the demand.

10 Senator Rounds: As you know, until now, DOD has  
11 envisioned a force of up to 100 combat-coded B-21 bombers.  
12 I am very concerned this number may be a budget rather than  
13 strategy-driven determinative. Also I have heard discussion  
14 within the Air Force circles of the need for a larger number  
15 of these aircraft based purely on operational requirements.  
16 Do you think we may need more than 100 of these aircraft?

17 General Hyten: So I have not seen the bomber vector  
18 road map yet from the Air Force. I put a demand signal out  
19 from my command to the Air Force to let me see that plan  
20 because I want to be able to support that plan, but I have  
21 to see it. I have to see the details to understand it.

22 From the top level, I think 100 is sufficient from an  
23 operational perspective, not a budget perspective. And the  
24 reason I think it from a top level is that I have a certain  
25 requirement in the New START for a certain number of nuclear

1 capable bombers, and then we have an additional capacity on  
2 the conventional side. And when you put that together, you  
3 come to about 100.

4 Nonetheless, I have not seen the details yet from the  
5 Air Force. I will see the details shortly. I know it is  
6 done. General Rand and General Goldfein have both told me  
7 it is about done. But I need to see that so I can better  
8 answer that question, Senator.

9 Senator Rounds: Thank you, General.

10 Thank you, Mr. Chairman.

11 Chairman McCain: Senator Peters?

12 Senator Peters: Thank you, Mr. Chairman.

13 And, General Hyten, thank you for being here. Thank  
14 you for your leadership as well.

15 General Hyten, in your response to advance questions  
16 that you submitted to this committee last September, you  
17 agreed that additional analysis is needed before making a  
18 decision on whether to deploy an additional missile defense  
19 site, including an analysis of the missile threat  
20 specifically from Iran. You have also indicated that you  
21 believe the response to missile threats must consider,  
22 quote, the entire package of capability from additional  
23 interceptors to supporting sensors and command and control.

24 In your testimony today, you identify three necessary  
25 missile defense upgrades including upgrading the kill

1 vehicle of ground-based interceptors, continued development  
2 of long-range discriminating radar, and improving regional  
3 missile defense capabilities. And I understand that some of  
4 these investments would improve a potential additional  
5 missile defense site. It would also be a part of that  
6 package and may make sense to make that investment.

7 But in a March of 2015 briefing to the Subcommittee on  
8 Strategic Forces, Lieutenant General Mann, former Commander  
9 of the U.S. Army Space and Missile Defense Command, affirmed  
10 that the ground-based mid-course defense system remains our  
11 Nation's only defense against an ICBM attack.

12 So without making a judgment -- the question is without  
13 making a judgment on deploying an additional missile defense  
14 site -- I do not expect that today. But if the decision is  
15 to deploy a new missile defense site, how long do you expect  
16 that construction would take? How long would it take to  
17 come online?

18 General Hyten: So the specific question is once you  
19 make a decision on an additional site, you are many years, 5  
20 to 10 years, away from that site being able to come online.

21 So based on my confirmation hearing and my lack of full  
22 depth into it, I met with Admiral Sering, the Director of  
23 the Missile Defense Agency a few times now. We have gone  
24 through his programs. We can talk about that in a little  
25 more detail in the closed hearing. But fundamentally I see

1 a need to have a reliable kill vehicle, a multi-object kill  
2 vehicle, better sensors, including a space-based layer for  
3 the mid-course discrimination, and then additional capacity.

4 But I want to make sure that those priorities are  
5 understood to the committee because those priorities are  
6 important to me because if we just go for the additional  
7 capacity, I am not sure we are going to be making the right  
8 architectural decisions about how we deal with the pending  
9 threat in the future. I want to make sure we do that right.  
10 And we have some time, not a lot of time, but we have some  
11 time to make those decisions.

12 We will have a ballistic missile defense review in this  
13 administration in addition to the nuclear posture review.  
14 That will be another 6-month study that is not yet to kick  
15 off but will soon.

16 Senator Peters: I want to expand a little on the "some  
17 time." So as you mentioned, you have to make the decision  
18 first to go forward with the site, but then you are looking  
19 to anywhere from 5 to 10 years before that site actually  
20 becomes operational. And my concern is that if we wait  
21 until a country like Iran, for example, develops missiles  
22 that threaten the homeland, we may be too late given that  
23 long timeline. That is why I know the work on an  
24 environmental impact study for potential sites is already  
25 underway.

1           But maybe your assessment -- are you confident that  
2 even if we started today, over 5 years or the 10 years, we  
3 would be able to construct these sites, that the missile  
4 threat from Iran and elsewhere will not continue to grow or  
5 eventually outpace our ability to bring these defenses  
6 online?

7           General Hyten: So I am always concerned about  
8 timelines because our acquisition system has not been very  
9 effective in the last 10 years in delivering things on time.  
10 So when I give broad statements like 5 to 10 years, it is  
11 broad because the acquisition system is not very reliable in  
12 terms of defining what those pieces are. It is broad  
13 because there are policy debates that have to happen. But I  
14 think we are going to have to make that decision pretty soon  
15 about where we are going to go.

16           I think we have the data we need, and we will feed that  
17 into the ballistic missile defense review. And I would  
18 expect coming out of the ballistic missile defense review  
19 some very specific recommendations about what we have to do  
20 that will probably come from the Missile Defense Agency.

21           Senator Peters: Thank you, General.

22           General Hyten: Thank you.

23           Chairman McCain: Senator Ernst?

24           Senator Ernst: Thank you, Mr. Chair.

25           And thanks for your testimony today, General Hyten. I

1 appreciate your candid comments, the comments that we had in  
2 our discussion yesterday in the office. And I am grateful  
3 that we can have an open session so the folks in the Midwest  
4 can hear how important STRATCOM is to our global safety.  
5 And the fact that STRATCOM is only 45 minutes from my  
6 hometown of Red Oak makes it even that much more important  
7 to the folks living in southwest Iowa. So I look forward to  
8 hearing more on your answers today.

9 We did talk a little bit about the Emerging Threats and  
10 Capabilities Subcommittee that I chair. And I do appreciate  
11 your comments about STRATCOM and its contribution to  
12 developing the third offset strategy. That is very  
13 important in our discussions in that subcommittee.

14 And yesterday in the meeting, you highlighted the need  
15 to also incorporate the concept of operations associated  
16 with the third offset strategy as we look towards defining  
17 it. From our nuclear triad to the stealth capabilities, it  
18 is vital to national security that the United States  
19 continues to stay ahead of its adversaries. And you have  
20 talked about a number of those today.

21 Can you explain the importance of developing a third  
22 offset strategy specifically as we watch our adversaries  
23 develop capabilities that match our own?

24 General Hyten: So I think the third offset strategy in  
25 its most simple terms is what is the next fundamental step

1 that we have to take as a Nation to jump ahead of our  
2 adversaries. That is what the first two offsets basically  
3 were when you look back in time. I think the opportunity we  
4 have right now is how do we fundamentally change the human-  
5 machine interface. How do we change the whole command and  
6 control structure? How do we actually get to new  
7 capabilities?

8 But as we look at these technologies and we look at the  
9 technologies both in Silicon Valley and Cambridge and a  
10 number of places where the Department of Defense is  
11 engaging, we have to put that in an operational context.  
12 You just cannot take a commercial technology and say, boom,  
13 there is your magic third offset. You have to figure out  
14 what is the operational construct that we are going to use  
15 in order to do that.

16 In space, the Deputy Secretary of Defense has said that  
17 the interagency space operations center, which we just  
18 renamed the National Space Defense Center, so that everybody  
19 can understand finally what it is -- it is a national space  
20 defense center -- was the first operational element of that  
21 because basically we put a bunch of smart people in the room  
22 with a bunch of capabilities and said figure out how to go  
23 faster. And it is amazing how fast they have been able to  
24 go when you break down all the barriers. This Nation can go  
25 fast. That is what the third offset is really about.

1           But our acquisition process likes to go slow. So that  
2 will be the challenge. How do we go fast in defining what  
3 the third offset is? How do we define those things and  
4 build them quickly, how to deploy it in the force to stay  
5 ahead of our adversaries and not become too bureaucratic  
6 about the next step?

7           Senator Ernst: I appreciate that.

8           And you mentioned breaking down the barriers. And we  
9 had a great conversation, a little off topic, but a great  
10 conversation about acquisition yesterday in the office. And  
11 do you think our failing acquisition system is impacting our  
12 ability to develop and procure the new technologies that are  
13 necessary for that third offset?

14          General Hyten: I think the challenge that we have is  
15 it is not the people that do the acquisition. They are  
16 still spectacular people. But we have not delegated them  
17 the authority and responsibility, and we do not hold them  
18 accountable for making the decisions to deliver  
19 capabilities. All those decisions are brought up into this  
20 town into the Pentagon, into the Capitol, and it hurts the  
21 ability of a program director to actually make the  
22 decisions, work with the industry, and deliver those  
23 capabilities. They spend all their time trying to get a  
24 program through the Pentagon, not trying to deliver the  
25 capability we need as a Nation. I think fundamentally we

1 have to change that focus to let those great people that do  
2 that business every day focus on delivering those  
3 capabilities and then hold them accountable because I grew  
4 up in that business as a young lieutenant and a captain and  
5 my bosses were held accountable. And there were some  
6 spectacular failures. But I always remember there are 10  
7 people in line to step and take those jobs because they  
8 wanted the authority and responsibility.

9 Senator Ernst: I absolutely agree, and I think that is  
10 something that this committee should work on. Thank you,  
11 General Hyten, for your time.

12 Thank you, Mr. Chair.

13 Chairman McCain: Senator Blumenthal?

14 Senator Blumenthal: Thanks, Mr. Chairman.

15 I know that you recently toured the 37th Helicopter  
16 Squadron at Warren Air Force Base, and my question really  
17 concerns the fleet that protects the ICBM fleet and the  
18 national capital region. In early February, the Air Force  
19 announced their anticipated request for proposal for the  
20 Huey replacement program -- as you know, that was to be  
21 released at the end of February -- would not occur until  
22 this summer because none of the companies offering a  
23 replacement helicopter were able to meet all the threshold  
24 requirements. The Huey replacement program has been  
25 discussed in some form or fashion since, I think, 2001. The

1 most recent acquisition strategy had the first operational  
2 helicopter delivery scheduled for the first quarter of  
3 fiscal year 2020, and it is now another year delayed by Air  
4 Force estimates to the second quarter of fiscal year 2021.

5 In my view, we can ill afford this kind of delay. I  
6 have written numerous letters to the previous administration  
7 urging that they expedite this replacement.

8 Do you have any opinions as to what can be done to  
9 expedite this program? Do you agree that it should be  
10 expedited I guess is the first question.

11 General Hyten: So of all the things in my portfolio, I  
12 cannot even describe how upset I get about the helicopter  
13 replacement program. It is a helicopter, for gosh sakes.  
14 We ought to be able to go out and buy a helicopter and put  
15 it in the hands of the people that need it, and we should be  
16 able to do that quickly. We have been building combat  
17 helicopters for a long time in this country. I do not  
18 understand why the heck it is so hard to buy. I wrote the  
19 requirements document for that helicopter when I was  
20 Director of Requirements at Air Force Space Command in 2007,  
21 and now it is 2017, 10 years later, and we are still arguing  
22 about a helicopter.

23 We had a request for forces in to provide a temporary  
24 replacement. I pulled that request for forces from STRATCOM  
25 because I want all hands on deck to get a new helicopter

1 into the force that we should -- as soon as possible. All I  
2 can tell you, Senator, as the Commander of Strategic  
3 Command, I will put every influence I can on the United  
4 States Air Force to deliver that capability sooner rather  
5 than later. And I cannot tell you how upset I was when I  
6 pulled the RFF and shortly thereafter was told that there  
7 would be a delay in the program. That is just unacceptable  
8 to me.

9 Senator Blumenthal: Well, your very forthright and  
10 valuable response has just eliminated a whole line of  
11 questions that I was going to have for you.

12 [Laughter.]

13 Senator Blumenthal: But I do have one more question  
14 which concerns the Columbia class.

15 And by the way, very seriously, I welcome your focus on  
16 this issue, and if there is anything I can do or I hope the  
17 committee can do -- I do not mean to speak for the  
18 committee, but it is a simple but profoundly important  
19 problem to safeguard the ICBMs in the north capital region.

20 General Hyten: Hugely important.

21 Senator Blumenthal: Thank you.

22 On the Columbia class, are you satisfied with the pace  
23 of development of the Columbia class, which is so important,  
24 as you mentioned earlier, to the triad program?

25 General Hyten: I am. I am very appreciative of the

1 United States Navy for making it the number one program in  
2 the United States Navy. I certainly agree with that  
3 priority. But there are a lot of challenges in the Navy  
4 portfolio, and the fact that they have made that the number  
5 one priority and the fact that the Chief of Naval  
6 Operations, Admiral Richardson, is going to be looking at  
7 that very closely gives me confidence that we will get  
8 there.

9 Nonetheless, we require a stable budget, stable  
10 funding, aggressive approach by the United States Navy in  
11 order to do that. All those things are challenging in  
12 today's environment. But I am comfortable with where the  
13 Navy is right now.

14 Senator Blumenthal: Thank you very much.

15 Thank you, Mr. Chairman.

16 Chairman McCain: Senator Cotton?

17 Senator Cotton: I would like to associate myself with  
18 the remarks of Senator Blumenthal on the helicopter program.  
19 And I appreciate that you take the issue so seriously,  
20 General.

21 Some claim that the long-range stand-off cruise  
22 missile, a new air-launched cruise missile, would be  
23 destabilizing. Do you believe the LRSO would be  
24 destabilizing, and if so, why? If not, why not?

25 General Hyten: Senator, I do not believe it is

1 destabilizing. I believe it is a critical element of our  
2 architecture. We have had air-launched cruise missiles,  
3 nuclear cruise missiles since 1960. The current fleet was  
4 first declared operational in 1981. An element of our  
5 architecture that our adversaries have significant numbers  
6 of like and modernized air-launched cruise missiles that can  
7 bring a threat to the United States tells me that we have to  
8 be able to have that capability as we look to the future.  
9 So I do not believe it is destabilizing. I think it is a  
10 critical element of the architecture, and it has been an  
11 element of the architecture for many, many decades.

12 Senator Cotton: So your recommendation is that we  
13 proceed with an LRSO program.

14 General Hyten: I think it is essential to the  
15 modernization of the triad.

16 Senator Cotton: You touched briefly earlier on the  
17 concept of having a stealth aircraft that has to be directly  
18 over the target. You are referring to the B-21 I presume.

19 General Hyten: Yes, sir.

20 Senator Cotton: And without a new air-launched cruise  
21 missile, you foresee a future in which that B-21 might have  
22 to penetrate into advanced air defenses rather than being  
23 able to use a stand-off cruise missile?

24 General Hyten: So I can show you the details tomorrow.  
25 I will bring a map tomorrow to show you why we need a mix of

1 capabilities, B-21, gravity bombs, as well as the air-  
2 launched cruise missiles, so you can see the details. But  
3 those three elements are a critical part of the  
4 architecture. You want a bomber to be able to range beyond  
5 single point targets. It is not the survivability of the  
6 bomber. It is the ability of the bomber to access targets.

7 Senator Cotton: But in an unclassified setting, it  
8 stands to reason if you do not have an air-launched cruise  
9 missile and the bomber has to be essential over the target,  
10 which means --

11 General Hyten: It has to be over the target.

12 Senator Cotton: -- over the air defense systems.

13 General Hyten: Which is over the air defense systems  
14 in many cases. But it also means that I am limited to the  
15 number of targets I can access.

16 Senator Cotton: Stealth technology has advanced  
17 considerably over the last 30 years. Are our adversaries'  
18 radars advancing as well to counteract our advances in  
19 stealth technology?

20 General Hyten: They are, and it is a game of point and  
21 counterpoint. We make an advance; they make an advance.  
22 The B-21 will stay ahead of those advances. We have to  
23 continue to stay ahead of those advances. That is another  
24 reason why the B-21 is an important element of the  
25 architecture.

1           Senator Cotton: And another reason why the long-range  
2 stand-off cruise missile is an important development because  
3 we have to expect our adversaries' radars will continue to  
4 improve?

5           General Hyten: And there is always the opportunity of  
6 a breakout too. So you do not want to be stuck in a one-  
7 solution game when you have the opportunity to have multiple  
8 solutions.

9           Senator Cotton: I want to turn to the Intermediate-  
10 Range Nuclear Forces Treaty. You touched on that briefly  
11 earlier. General Selva has stated to the House Armed  
12 Services Committee that now Russia has deployed in  
13 operational mode a ground-launched cruise missile that  
14 violates the INF Treaty.

15           How destabilizing is it to Europe and how threatening  
16 is it to our citizens and troops and interests in Europe for  
17 Russia to have that capability?

18           General Hyten: The single missile is -- and I will  
19 show you were it is deployed tomorrow. A single missile is  
20 not that destabilizing. The action of breaching that treaty  
21 and moving into that area and if they deploy large numbers  
22 and they move them into the west of Russia, that creates a  
23 very significant threat to our European allies. And that is  
24 why I believe we need to address it right up front. As a  
25 whole of government, how do we respond to that decision by

1 the Russians to break out of that treaty?

2 Senator Cotton: Is it fair to say the INF Treaty is a  
3 treaty that is more beneficial to the United States than it  
4 is to Russia or was for the Soviet Union since we do not  
5 have many enemies on our borders who want to fire ground-  
6 launched cruise missiles at us?

7 General Hyten: So we have notified Congress and the  
8 administration that we are going to do a detailed assessment  
9 of the INF Treaty from all military aspects. We will do  
10 that as part of the nuclear posture review. But we are also  
11 going to do that as a -- provide our military judgment to  
12 the political leadership of what that INF Treaty really  
13 means to the United States.

14 Senator Cotton: And when you say a whole-of-government  
15 effort, your point there is that the Department of State and  
16 the various international and economic agencies and  
17 organizations in our government have some role to play as  
18 well in determining what the American response to these INF  
19 Treaty violations will be?

20 General Hyten: Especially the Department of State.

21 Senator Cotton: From a military standpoint, is it  
22 threatening to U.S. interests to have potential Russian  
23 ground-launched cruise missiles counteracted only by 30-  
24 year-old aircraft and aging warheads in Europe?

25 General Hyten: It is a concern to the European

1 theater, a concern to NATO. We have to work it as well  
2 inside the NATO alliance. Again, I am not in NATO. I do  
3 not have a NATO hat. I am not a diplomat. But  
4 fundamentally all of those elements have to look at the  
5 problem of a ground-launched cruise missile again which we  
6 have not seen in that part of the world for quite some time.

7 Senator Cotton: Thank you, General. My time has  
8 expired.

9 General Hyten: Thank you, Senator.

10 Chairman McCain: Senator King?

11 Senator King: Thank you, Mr. Chairman.

12 I would appreciate it, General, if you scientists could  
13 figure out a way that we could be in two places at once.  
14 This morning ironically there is a hearing upstairs in the  
15 Energy Committee where I just went and came back on cyber  
16 and our vulnerability.

17 Let me ask a couple of questions. CYBERCOM is being  
18 elevated to a full combatant command, and you have talked  
19 about how that is proceeding. The next question is  
20 splitting CYBERCOM and NSA of the dual hat role. What has  
21 to happen for that to occur? In other words, where is the  
22 benchmark where we can start to talk about it? Because a  
23 full combatant command in CYBERCOM is a big responsibility.

24 General Hyten: I will describe that in kind of two  
25 levels. We can have a more detailed discussion in the

1 closed hearing tomorrow.

2 But at the broadest level at the unclassified side,  
3 before we separate Cyber Command from the National Security  
4 Agency, we need to have Department of Defense service-owned  
5 cyber platforms to operate on. So again at the broadest  
6 unclassified terms, one of the reasons that Cyber Command  
7 and the National Security Agency are combined today is  
8 because they use the same platform. We need to have a  
9 different set of platforms.

10 Now, there are acquisition programs of record being  
11 instituted to build those capabilities. Once those  
12 capabilities are built, I would be supportive of separating  
13 the two. But I will not advocate separating the two until  
14 we have a separate platform in the services that Cyber  
15 Command can operate on.

16 Senator King: I appreciate that, and we can go into  
17 that in more detail.

18 This is an interesting hearing because we are talking  
19 about cyber. We are also talking about nuclear. When we  
20 talk about nuclear, all the discussion is about a deterrent.  
21 That is what you have been talking about all morning. And  
22 yet, as near as I can tell -- I have been going to these  
23 hearings for 3 or 4 years now -- there is no coherent cyber  
24 deterrent strategy or doctrine. Do you agree that that  
25 should be a priority for our country to develop that

1 strategy and doctrine and to make it public so our  
2 adversaries know that there will be consequences to results  
3 from a cyber attack?

4 General Hyten: I think what is missing is a broader  
5 discussion of what 21st century deterrence really means.  
6 That involves the nuclear capabilities as the backstop, but  
7 fundamentally space, cyber, conventional, all the other  
8 elements as well.

9 When we talk about deterrence, we tend to fall back 50  
10 years ago to the deterrence model of the 1960s, 1970s, and  
11 1980s when it was a very broad nuclear deterrence discussion  
12 where we had mutually assured destruction --

13 Senator King: It was a binary analysis.

14 General Hyten: It was a binary analysis. Now it is a  
15 multi-variable analysis. And each of those has to be put in  
16 context. And the context has to be the fact that we are  
17 actually not deterring cyber. We are not deterring space.  
18 We are deterring an adversary that wants to operate and do  
19 damage in those domains. That is what we have to deter.

20 Senator King: We are deterring aggression, which may  
21 come in a variety of forms, one of which could be cyber.

22 General Hyten: Yes, Senator. That is exactly right.  
23 At STRATCOM, we have created an academic alliance now with  
24 35 academic FFRDC partners to look at what 21st century  
25 deterrence really means and trying to stimulate that debate

1 in the Nation because I think it is an important discussion  
2 to have inside this Nation. What do we really mean by  
3 deterrence in the 21st century? I think it is fundamentally  
4 different, but we have not fully defined it, thought through  
5 it, and had that public date.

6 Senator King: I agree with you, but I agree that we  
7 need to have that public debate sooner rather than later.

8 General Hyten: Yes, sir.

9 Senator King: These attacks are occurring virtually  
10 daily.

11 General Hyten: Yes, sir.

12 Senator King: One other point on the CYBERCOM  
13 elevation. When you are talking about EUCOM or NORTHCOM,  
14 you are talking about bombers and tanks and submarines and  
15 aircraft carriers. One of the different parts of cyber, it  
16 seems to me, is the interrelationship with the private  
17 sector, and that a cyber attack most likely will come on the  
18 private sector. The hearing we are having upstairs is about  
19 cyber in the energy sector. So CYBERCOM cannot be simply  
20 military. There has got to be some, it seems to me,  
21 structural relationship to the private sector, particularly  
22 critical infrastructure. Would you agree?

23 General Hyten: So I think when it comes to cyber, we  
24 need to focus on the effect that is being created. There  
25 has got to be a common shared situational awareness in the

1 cyber domain of what is going on. But the action to respond  
2 to whatever the issue happens to be has to be what the  
3 threat is and what that threat is trying to create in terms  
4 of harm to the United States. If it is criminal, then that  
5 is the Homeland Security side. If it is a military action  
6 against the United States, then it is the Cyber Command  
7 side. But the situational awareness has to be common.

8 Senator King: But the defensive side of it may often  
9 take place within the private sector.

10 General Hyten: The defensive side may be in the  
11 private sector. It may be in the private-public sector. It  
12 may be in a number of different places. But the situational  
13 awareness is the key.

14 Senator King: I am just suggesting that the new  
15 CYBERCOM, when it is elevated, needs to think more broadly  
16 than simply within the Pentagon. It has to think in terms  
17 of relationships to these private sector critical  
18 infrastructure. It is not a typical guns and tanks analysis  
19 because you are dealing with so many of these -- the threats  
20 are in the private sector.

21 The nuclear posture review that is going on -- I am  
22 looking forward to the results of that. Are there things we  
23 could and should be doing now on nuclear command and  
24 control? That seems to me one of the most serious  
25 vulnerabilities.

1           General Hyten: It is. We have been a little slow in  
2 stepping up the hiring for the NC3 center inside the United  
3 States Air Force. That is now proceeding. But we have the  
4 resources going to the right place. We are hiring the right  
5 people, but it is not going to be an overnight solution  
6 because once you hire new people, they still have to figure  
7 out what they are going to do so they can move forward.

8           But we need to be aggressive and have very tight  
9 oversight of what is going on there to make sure that that  
10 does not slow down. I think both the Air Force and the Navy  
11 have taken it seriously now, but it is building up from a  
12 very deficient state.

13          Senator King: I just do not want command and control  
14 to be lost when we are talking about submarines and bombers.

15          General Hyten: Absolutely. It is my number one  
16 concern from a modernization perspective.

17          Senator King: Thank you, General.

18          Chairman McCain: Senator Perdue?

19          Senator Perdue: Thank you, Chairman.

20          General, thank you for being here.

21          I want to echo Senator Blumenthal's comments about your  
22 forthrightness. It is very refreshing. Thank you, sir.

23          I want to pursue the nuclear development in Russia just  
24 a little bit. General Robinson in February of this year  
25 told the Toronto Star -- and I quote -- today Russian cruise

1 missiles can reach us from ranges we are not used to. No  
2 longer do they have to enter or come close to North American  
3 airspace. That is a game changer. Do you agree with that  
4 observation, sir?

5 General Hyten: I do agree with that.

6 Senator Perdue: Sir, in 2012, the National  
7 Intelligence Council report stated, quote, nuclear ambitions  
8 in the U.S. and Russia over the past 20 years have evolved  
9 in totally opposite directions. Reducing the role of  
10 nuclear weapons in the U.S. strategy is a U.S. objective  
11 while Russia is pursuing new concepts and capabilities for  
12 expanding the role of nuclear weapons in its security  
13 strategy.

14 Do you identify with that observation, sir?

15 General Hyten: I do, and I cannot help but look at  
16 history and say when we started to de-emphasize nuclear  
17 weapons, our adversaries, not just Russia, but all our  
18 adversaries, started to modernize and build up their nuclear  
19 capabilities.

20 Senator Perdue: There is some correlation to the North  
21 Korean development and Iran and China.

22 General Hyten: And China.

23 Senator Perdue: Yes, sir. What we have seen in Russia  
24 then, by 2020 it is projected, I think, that Russia's  
25 nuclear triad -- 70 percent of its nuclear forces will be

1 replaced by new systems. Sir, if we continue on the current  
2 path without a major radical change, what percentage of our  
3 triad will be supported by new systems?

4 General Hyten: By what date?

5 Senator Perdue: By 2020, which is the estimate in  
6 Russia. 2020, 70 percent of their triad will be new.

7 General Hyten: We will not be modernized by 2020.

8 Senator Perdue: Right.

9 General Hyten: Then I look at the INF Treaty to  
10 develop nuclear -- these are all things they are doing just  
11 in the last 4 years. They violated the INF Treaty. We  
12 talked about that. Their expanded deployment of air- and  
13 sea-launched nuclear cruise missiles not limited by the New  
14 START treaty -- you know, what they did in Crimea. They are  
15 threatening our allies with nuclear attack. They are  
16 actually using it in rhetoric openly now about intermediate-  
17 controlled nuclear acceleration to -- accelerated to get a  
18 deceleration in aggressive posture. But they have also  
19 developed things in the sea, the underwater nuclear drone,  
20 the new nuclear submarine.

21 So my question is all of this rhetoric, the buildup in  
22 cruise missiles, intermediate-range nuclear-tipped cruise  
23 missiles, and their modernization of their nuclear force --  
24 what does all this suggest about the role of nuclear weapons  
25 in Russia's nuclear or their total national security

1 strategy?

2 General Hyten: It suggests that the nuclear weapons  
3 are a primary element of their overall national security  
4 strategy. You have to look at their investment. You look  
5 at their finances and how much money they are spending in  
6 this capability and the vast majority of their capability is  
7 going at strategic forces. And that is primarily nuclear  
8 but also space and cyberspace to a smaller amount. But when  
9 you put those pieces together, you cannot help but say that  
10 that is their strategy for national security.

11 Senator Perdue: And what does that say to us in terms  
12 of our strategy of de-emphasizing this deterrent that we  
13 have had for 70 years?

14 General Hyten: Well, I believe that the last 20 years  
15 we have de-emphasized nuclear weapons, and that has created  
16 an imbalance in the approach of our adversaries that we have  
17 to address. That is why we need to modernize our  
18 capabilities across the board. We have to meet strength  
19 with strength. I never want to be able to have to sit down  
20 with a potential adversary and have a negotiation from a  
21 position of weakness.

22 Senator Perdue: I agree, sir.

23 General Hyten: Ever.

24 Senator Perdue: Given that, how long will it take us,  
25 given the current procedures of acquisition and development

1 to modernize the ICBMs over the entire triad?

2 General Hyten: Sir, we are talking about a 30-year  
3 modernization program. We are talking about 15 years of  
4 development and production, and then modification and  
5 support as we go into --

6 Senator Perdue: So what we are really saying -- I know  
7 that we are not in a classified environment, and I look  
8 forward to that conversation. So what we are saying is from  
9 the reality today, given our past practice, is that from  
10 2020 going forward, Russia is in a much more modernized  
11 position of acuity than the United States, and that will  
12 occur over the next 20 to 30 years. Is that correct?

13 General Hyten: And then we will modernize and then we  
14 will have a modernized capability.

15 But the thing about a deterrent capability is it does  
16 not matter how old it is. It just matters whether it works.

17 Senator Perdue: And you are confident today that the  
18 triad is --

19 General Hyten: The stuff that we have today will work.  
20 The question is will it work 10 years from now, 15 years  
21 from now, 20 years from now. And that is where the risk  
22 comes in. That is why modernization has to be a priority.  
23 But we are ready today. The force is ready today. The  
24 force is motivated and understands they are the critical  
25 element of our Nation's security.

1 Senator Perdue: And that is comforting.

2 I have one last question in my time remaining. You  
3 addressed it earlier about the helicopter, and I appreciate  
4 your anger about that, to be candid, sir.

5 But we have also got a situation where in modernizing,  
6 you have to go through 60 stakeholders basically. And I  
7 think that has been documented. And you have said we do not  
8 move fast enough from concept to capability. What can we do  
9 to help you? What can you do to help us accelerate our  
10 ability to be fast?

11 General Hyten: To me, the fundamental change that has  
12 to be is we have to put somebody in charge and just hold  
13 them accountable and let them go do their job. And if they  
14 fail, get somebody else to go do that job. But we have so  
15 many people that make decisions. That takes forever to get  
16 through the process and get everybody to dot the I's and  
17 cross the T's and make sure everything is okay. It is  
18 almost impossible with the structure that we have created to  
19 go fast.

20 That structure was created because of problems in the  
21 acquisition business. It was created because we had  
22 overruns and problems in the past. So the way we fixed the  
23 problem is we did not hold somebody accountable. We created  
24 a new oversight mechanism to make sure that whether it is  
25 test or development or whatever it is, we have an oversight

1 mechanism to look at everything and make sure that it is  
2 right. We have got to get back to the point where we put  
3 somebody in charge and hold them accountable.

4 Senator Perdue: Well, that is very refreshing,  
5 General. Thank you for your testimony and your service.

6 Thank you, Chairman.

7 Chairman McCain: I would point out we made some  
8 progress in that direction by putting the service chiefs in  
9 the position of responsibility, but we certainly have a lot  
10 more to do.

11 Senator Heinrich?

12 Senator Heinrich: Thank you, Chairman McCain.

13 And welcome, General Hyten.

14 So for starters, I want to ask, given the very real  
15 budget pressures that we find ourselves in, in your  
16 professional opinion should our priority at this point be  
17 modernization of our nuclear forces through completion of  
18 our life extension programs or should we be prioritizing the  
19 expansion of our nuclear forces with brand new weapon  
20 designs at this juncture?

21 General Hyten: Are you talking about the nuclear  
22 weapons themselves or the --

23 Senator Heinrich: Not the personnel. The weapons  
24 themselves.

25 General Hyten: The weapons themselves. I think the

1 focus has to be always ready, reliable weapons. And so the  
2 priority has to be the service life extension before we get  
3 to new weapons. But fundamentally at some point in the  
4 future, we have to be able to transition to those new  
5 weapons. And the labs are very engaged in making sure we  
6 know exactly what the status is. I think the lab directors  
7 are some of the most incredible people that I have probably  
8 ever met, and they give me very good advice about how to do  
9 that. But the priority has to be the life extension first  
10 because you always have to be ready, and then when and if do  
11 we have to modernize and change the structure.

12 Senator Heinrich: Well, I share your sentiments about  
13 the lab directors. We had a good briefing with them  
14 recently.

15 Do you want to say anything else about the sort of  
16 sequence of the LEPs to ensure that we continue to have the  
17 near-term risk mitigated, or would you rather save that for  
18 another setting?

19 General Hyten: I think I would like to save that for a  
20 closed session.

21 Senator Heinrich: That is fine.

22 Let us go on to talk a little bit about New START.  
23 What are the defense and intelligence benefits of the  
24 inspections, the database, the unique identifiers of  
25 Russia's strategic nuclear forces that we have secured

1 through that arrangement? And what would be the  
2 implications if those provisions went away?

3 General Hyten: So I cannot give you the details of  
4 what we learned in this forum, but what I can say at an  
5 unclassified level is that we get huge value from a  
6 bilateral verifiable treaty that allows us to see exactly  
7 what our adversaries are doing from a strategic weapons  
8 perspective. Now, the thing about a bilateral verifiable  
9 treaty is they also get that kind of insight from us. So  
10 that always has to be part of the calculation as you go  
11 through.

12 But we have an understanding of exactly what those  
13 capabilities are. They have those understandings of what  
14 our capabilities are. I think when they look at them, they  
15 get an assessment of the readiness of our force and the  
16 ability to provide a deterrent. I think that is a powerful  
17 message, and we get a message in return.

18 Senator Heinrich: Do you think that both sides  
19 obviously get a little bit of a window into intent and  
20 posture that mitigates risk so that unintended consequences  
21 do not lead to an unnecessary escalation?

22 General Hyten: Absolutely. And I think every time  
23 that -- well, I will just say when you walk in and you see a  
24 nuclear weapon for real and you see the readiness of the  
25 force to do that, you do not want that to be employed

1 against you. That is an element of deterrence that is I  
2 think one of the most powerful elements of deterrence there  
3 is. You actually have to see it to embrace it. And when  
4 the Russians see it, when we see it when we go there, that  
5 helps the deterrent posture across the globe.

6 Senator Heinrich: Yes. I have to say I think that is  
7 a very insightful comment, and I would encourage all of my  
8 colleagues to make the effort to see our deterrent up close  
9 and personal. It is a very sobering impact that that has,  
10 and as somebody whose father lived through some of the test  
11 phases, I think the closer people can come to seeing the  
12 reality of that, I think the better their decisions will be  
13 made down the road.

14 I want to ask you one last question before my time  
15 expires. Los Alamos Lab is the designated center of  
16 excellence for plutonium research. In your view, does our  
17 current strategy maintain the critical facilities and the  
18 capabilities for plutonium technology? And are we on  
19 schedule to meet the required production of plutonium pits  
20 by the late 2020s?

21 General Hyten: So the answer is yes, but I have  
22 concerns about the requirement in the late 2020s. I cannot  
23 remember if the number is classified. So I just will not  
24 say the number.

25 Senator Heinrich: That is fine.

1 But the focus on those facilities needs to be acute.

2 General Hyten: The focus on that facility has to be  
3 there all the time. In the near term, I am very comfortable  
4 with where we are. It is really 10-15 years from now that I  
5 have concern about maintaining the necessary capability to  
6 generate what we need for weapons.

7 Senator Heinrich: Thank you, Mr. Chairman. I will  
8 yield back.

9 Chairman McCain: Senator Tillis?

10 Senator Tillis: Thank you, Mr. Chairman.

11 General Hyten, thank you for being here, and thank you  
12 for wearing that Carolina blue shirt. The Tar Heels wore it  
13 last night when they won the national championship or a  
14 similar color.

15 General Hyten: I am glad I could help you out,  
16 Senator.

17 Chairman McCain: It is breaking news.

18 [Laughter.]

19 Senator Tillis: I wanted to really follow on to some  
20 questions that I think Senator Perdue got to at the end of  
21 it and it really made me think about asking you when you  
22 responded to the question from Senator Blumenthal regarding  
23 the helicopters. You know, we have got an acquisition  
24 environment now across all of DOD that thinks it is okay to  
25 take 10 years and 700 pages to spec the next generation

1 handgun, fairly simple. The kind of weapons you are talking  
2 about are slightly more complicated.

3 So I would like to talk more about things that you  
4 would like for us to consider in terms of authorities or  
5 constraints that we have placed on you or the Department to  
6 really get to the root causes of some of these problems and  
7 delays that are very costly and, at the end of the day,  
8 threaten our national security.

9 General Hyten: So it is interesting for me. So I  
10 started off in the acquisition business and then I went into  
11 operations, and I was happily an operator for almost 2  
12 decades. And then the Air Force called me back in to be in  
13 acquisition again as a two-star.

14 So I came back in, and there were all these things that  
15 were broken. And so the first thing I did is I read the  
16 federal acquisition regulations. I actually read them. It  
17 was quite painful, but I read them. And then I read the  
18 JCIDS process for requirements, the DOD instruction that  
19 talks about -- the chairman's instruction that talks about  
20 how you do requirements.

21 And what struck me as interesting is the law, the  
22 regulations, and the policy that has been put in place for  
23 requirements and acquisition actually allows you to be as  
24 streamlined as you want to be. It is all written right  
25 there. It is legal. You can do all those things. We just

1 have chosen to implement a process that is not responsive.

2 Senator Tillis: How do we fix that?

3 General Hyten: I think what we have to do is you have  
4 to eliminate a lot of the bureaucracy that is in the middle.

5 Senator Tillis: Who is that on?

6 General Hyten: I think most of it is in -- well, I  
7 will just describe from my perspective the way it was built.  
8 The way it was built was first we said we are going reform  
9 acquisition with the Defense Acquisition Workforce  
10 Improvement Act, and that was about 25 years ago. And we  
11 said we are going to have a streamlined authority from a  
12 program director to a program executive officer to a service  
13 acquisition executive to a defense acquisition executive.  
14 And at that time, those staffs were very small. In fact,  
15 the PEO staffs, the program executive officer's staffs, were  
16 in some cases 9 to 14 people.

17 But then the OSD staff grew, and then the service staff  
18 had to grow to match the OSD staff. And then the PEO staff  
19 had to grow to match the service staff. And then the  
20 program office had to grow in order to match those pieces.

21 So to me, you have to take every one of those and cut  
22 it out and go back to what was the intent of the law 25  
23 years ago, which is the chain of command is the program  
24 director to the PEO, to the SAE, to the DAE, and nobody else  
25 can get in between.

1           Senator Tillis: Do you see any evidence that that is  
2 being addressed seriously?

3           General Hyten: No, sir.

4           Senator Tillis: And without that, then our  
5 modernization, the things that we are doing for service  
6 extension, they all suffer because there is an inherent cost  
7 in delay in new capabilities. Is that correct?

8           General Hyten: That is correct.

9           Senator Tillis: Somebody needs to own that. Actually  
10 somebody somewhere in these organizations -- they need to  
11 own it. And it is remarkable to me in just the 2 years that  
12 I have been here that we are having the same circular  
13 discussions at the expense of you being able to do your job  
14 even better than you are already doing it.

15          General Hyten: The other thing I will point is we also  
16 need stable budgets.

17          Senator Tillis: Well, I agree. That is where I think  
18 we have become the root cause of the problem because if you  
19 are making long-term investments and we are living paycheck  
20 to paycheck through 1-year CRs and we consider that success,  
21 we are a part of that problem.

22          But it would really help us I think to get some incites  
23 into exactly what you talked about. We will follow up with  
24 your office.

25          The last question I had -- and it just reminded me

1 based on something you said earlier about you have certain  
2 weapons that have reached their end of life or appear to.  
3 There were some people in the prior administration who were  
4 concerned that that maybe we were moving too quickly to  
5 decommission certain weapons. And I thought I heard from  
6 you all that in fact they had reached their usable life, and  
7 if you did not decommission them, that there was just going  
8 to be additional cost and risk in maintaining them. Is that  
9 still a problem?

10 General Hyten: I do not think it is a problem. We  
11 have a significant weapons inventory. When we get down to  
12 1,550 accountable warheads, we have significant warheads in  
13 the inventory to allow us to do that now and for the  
14 foreseeable future. So I supported the decommissioning of  
15 those weapons. My predecessor did as well just because we  
16 have a number that we have to meet and we have the  
17 capabilities that were needed to meet it. We do not have to  
18 walk down any further.

19 Senator Tillis: Thank you. I look forward to the  
20 hearing tomorrow.

21 Chairman McCain: Senator Sullivan?

22 Senator Sullivan: Thank you, Mr. Chairman.

23 And, General, thank you for your testimony and your  
24 service and your frank assessment on some of these issues.

25 I appreciate your written testimony focusing on missile

1 defense, and I would like to dig into some of those issues  
2 this morning.

3 It is when, not if that North Korea is going to be able  
4 to range the continental United States with an  
5 intercontinental ballistic nuclear missile. Is that not  
6 correct?

7 General Hyten: I believe it is, sir. I think they  
8 already have the capability to deploy an intercontinental  
9 ballistic missile. The question is when will they be able  
10 to mate a nuclear weapon to it.

11 Senator Sullivan: So it is going to happen. We have  
12 classified estimates of when it is going to happen, but you  
13 can say publicly that is going to happen.

14 General Hyten: Yes. And I will show you the dates the  
15 intelligence community predicts that it will happen when we  
16 talk tomorrow. It is fairly broad, but I will show you  
17 those dates.

18 Senator Sullivan: So one of my concerns has been if we  
19 know that that is going to happen, which we do, and the day  
20 that that does become public that they can do that, I think  
21 there is going to be a big demand that will be on the front  
22 page of all the newspapers and magazines that the leader of  
23 North Korea can range Chicago or Miami or New York City with  
24 a nuke. There will be a lot of demands to do something  
25 immediately because of that.

1           So if we know that is happening, it is my view that we  
2           should be focusing a lot on missile defense to make sure  
3           that we will have a 99.9 percent chance of shooting one or  
4           two or three of those down and be able to say publicly if  
5           you do do that, we will retaliate massively. That will buy  
6           whoever is in the White House some time.

7           We talk about sooner. I think it is sooner rather than  
8           later. Can you give the committee a sense of why the date,  
9           February 11th, was so important in terms of this very  
10          troubling issue?

11          General Hyten: So, thank you, Senator. I am a big  
12          supporter of missile defense. I have been for my whole  
13          career.

14          But February 11th was a very important date because  
15          that is the date --

16          Senator Sullivan: February 11th of this year.

17          General Hyten: Of this year. The North Koreans  
18          launched a new, solid, medium-range ballistic missile off a  
19          new transporter-erector-launcher. They published pictures  
20          for the entire world to see out of a place we had never seen  
21          before. That showed a new technology, a new North Korean  
22          capability to employ a very challenging technology for us  
23          because a liquid missile has --

24          Senator Sullivan: Liquid fuel you are talking about.

25          General Hyten: A liquid fueled --

1 Senator Sullivan: Versus solid fuel.

2 General Hyten: -- versus solid has to be stacked,  
3 fueled. It takes time and we can watch. A solid rocket can  
4 be rolled out and launched at a moment's notice. And if you  
5 noticed our history of building ballistic missiles, in the  
6 early days we built liquid fueled rockets, and we had some  
7 challenges because liquid fuel is a dangerous thing to try  
8 to keep ready and on alert. A solid is a much better  
9 solution. So all of our inventory now is solids.

10 Senator Sullivan: So that was a major advancement by  
11 North Korea.

12 General Hyten: It was. They moved what was  
13 demonstrated at sea onto land, onto a new launcher, and did  
14 it in a very quick way.

15 Senator Sullivan: Let me ask you a related question.  
16 You talked about the history of our programs in terms of  
17 rockets. Do you think there is a culture that we have now  
18 with regard to missile defense? We had a provision in the  
19 NDAA last year that required the Missile Defense Agency to  
20 test at least once a year -- try to test at least once a  
21 year. Do you believe we have a culture that focuses too  
22 much on always having successful operations in terms of  
23 testing? Why is it important to also allow us to fail?

24 General Hyten: I think I have become part of that  
25 problem too because when Admiral Sering tests, I am either

1 on the phone or waiting for that email that said did it  
2 work, did it work, did it work. And that fundamentally  
3 creates the wrong kind of test environment.

4 If you look at what North Korea is doing, test/fail,  
5 test/fail. And I look at what I did when I was a younger  
6 officer in the space business. That is how you go fast.  
7 Von Braun in the early days of the rocket business -- he had  
8 a 60 percent failure rate, maybe the greatest rocket  
9 scientist of all time. Can you imagine, if Admiral Sering  
10 in the Missile Defense Agency had a 60 percent failure rate,  
11 what the newspapers would say? In reality, we should be  
12 asking was that a successful test. Did we learn what we  
13 needed to do to advance the system? And are we testing fast  
14 enough? Because North Korea is going fast, test/fail,  
15 test/fail, test/succeed, and they are learning. And you can  
16 see them learning because that is the way you do the rocket  
17 business.

18 Senator Sullivan: So you think we should be doing at  
19 least testing once a year? And can we help with regard to  
20 that narrative and culture to make sure you are learning but  
21 not always having to make sure it is, quote/unquote, a  
22 successful test? Can a test that does not hit the target  
23 still be a successful test?

24 General Hyten: In many case, we will create conditions  
25 where we do not want to hit the target, and then somehow it

1 will still be portrayed as a failure. But we need to  
2 understand how long the interceptor can fly. We need to  
3 understand various things about a test. A test program is  
4 not just about hitting the target. Ultimately, the system  
5 is about hitting the target, and we have to learn fast as we  
6 go through that.

7 Senator Sullivan: Thank you.

8 Thank you, Mr. Chairman.

9 Chairman McCain: Senator Cruz?

10 Senator Cruz: Thank you, Mr. Chairman.

11 General, it is good to see you. Thank you for your  
12 service. Thank you for being here. I enjoyed our visiting  
13 last month about the priorities for strategic deterrence and  
14 how to improve our capacities going forward.

15 I want to focus a few minutes on questions involving  
16 space, which is one of the topics you and I discussed. Last  
17 week, your deputy, Vice Admiral Richard, testified before a  
18 Space Security Conference about offensive space capabilities  
19 and weapons that are being developed by China and Russia.  
20 He said that, quote, while we are not at war in space, I do  
21 not think we can say we are exactly at peace either. With  
22 rapidly growing threats to our space systems, as well as the  
23 threat of a degraded space environment, we must prepare for  
24 a conflict that extends into space.

25 General, in your judgment, how significant is the

1 threat to our space-based assets, and what would the impact  
2 be to our operations if they were degraded?

3       General Hyten: So it is significant and it is growing.  
4 You have to ask yourself why we have adversaries that are  
5 building weapons in space, weapons that can deploy into  
6 space, weapons that can jam our satellites, weapons that can  
7 jam GPS. Why are they building that entire infrastructure?  
8 It is not because they are interested in the peaceful use of  
9 outer space. It is because they are looking to threaten the  
10 United States, and they have watched us for the last 20-plus  
11 years, ever since Desert Storm. They have watched us employ  
12 space to create a fundamental asymmetric advantage on every  
13 battlefield we are in. And they understand if they are ever  
14 in a conflict with us, if they cannot challenge that  
15 advantage, they have a significant potential to lose. That  
16 is why they are committing such a huge amount of their  
17 national treasure to building those kind of weapons and  
18 capabilities.

19       Our job is to make sure that we can always respond,  
20 always defend ourselves, always make sure that the  
21 asymmetric advantage that we have built over the years can  
22 be maintained in any conflict. We have to do that.

23       Now, we hope to deter that conflict by demonstrating  
24 that to our adversaries, but nonetheless, if it does extend  
25 into space, we have to be ready to fight it.

1           Senator Cruz:    To what extent does our weapons  
2   targeting and navigation depend upon active GPS and live  
3   satellites?

4           General Hyten:  You know, it is interesting.  The first  
5   space war is often referred to as the Desert Storm, the  
6   first Gulf War.  But in that war, very few precision  
7   munitions -- in fact, no precision munitions were dropped  
8   with GPS guidance.  The only precision munitions were laser-  
9   guided munitions.  And everybody remembers the video on  
10  television from that.

11          But now almost every weapon we drop is a GPS-guided  
12  weapon.  Almost our entire force structure is built on GPS  
13  guidance as we go through that.  Our dropping of logistics  
14  off of aircraft are GPS-guided air drop systems now.  The  
15  timing system for many of our weapons is GPS.  Our artillery  
16  systems are guided by GPS.  The guided multiple launcher  
17  rocket systems, the MLRS, is a GPS-guided system in the  
18  Army.  The Navy systems are GPS-guided.  We have basically  
19  taken that huge advantage.

20          So in the future, we have to look at precision  
21  navigation and timing as a mission and build a resilience  
22  into that architecture, as well as defending GPS on orbit.

23          Senator Cruz:  What failsafes are there in the event  
24  of GPS or other satellite systems going down for our weapon  
25  systems still being able to operate, or for that matter, to

1 what extent are our troops drilling in a no-satellite  
2 environment regarding navigation or weapon systems or  
3 otherwise?

4 General Hyten: So about 6 years ago, the Air Force did  
5 a study called a Day Without Space, and in that, they  
6 basically went to Nellis and on the range took GPS and  
7 satellite communications away from the aviators. And it was  
8 not good. We were not ready to do that.

9 But since that time, we have basically relearned how to  
10 operate in a GPS-denied environment, in a SATCOM-denied  
11 environment. We actually have a lot of those capabilities  
12 built in. We have the ability to use inertial navigation  
13 systems. We have the ability to use a compass and a map.  
14 Maybe we were spoiled because space was a benign  
15 environment. GPS was always there, and so we just assumed  
16 that it was going to be there.

17 We cannot assume that anymore. We have to train for  
18 that. We have to train in all services and then build  
19 resilient systems to make sure that we have the capability  
20 to fight in any situation.

21 Senator Cruz: Russia's aerospace forces are  
22 potentially working to deploy an anti-satellite weapon on  
23 its interceptor aircraft. A VKF squadron commander was  
24 quoted as saying, quote, a new missile is being developed  
25 for this aircraft capable of destroying targets in near

1 space.

2 General, how realistic is the threat to our satellites  
3 from Russia, and how should the U.S. respond to that threat?

4 General Hyten: So the threat from China is actually  
5 more near-term than Russia. I will show you the specifics  
6 tomorrow in the closed hearing of what those threats are.

7 But I can tell you that it is real and they would not  
8 be committing resources to building that if they did not  
9 have some intent to use it in a conflict. And so when you  
10 see statements by Russian officers and Russian leaders about  
11 building capabilities to do that, I mean, why would they do  
12 that unless they were sending a message?

13 Senator Cruz: So what should we be doing about it?

14 General Hyten: Number one, we have to always defend  
15 ourselves. So we have to build the ability to defend  
16 ourselves against any of those threats. And number two, we  
17 have to build an offensive capability to challenge their  
18 capabilities in space as well. And we will talk about what  
19 we are doing in that in the closed hearing tomorrow as well,  
20 Senator.

21 Senator Cruz: Very good. Thank you.

22 Thank you, Mr. Chairman.

23 Chairman McCain: General, thanks very much, and we  
24 look forward to tomorrow. And thank you for a very  
25 informative and helpful and important hearing. Thank you.

1 We are adjourned.

2 [Whereupon, at 11:26 a.m., the hearing was adjourned.]

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