HEARING TO RECEIVE TESTIMONY ON
UNITED STATES STRATEGIC COMMAND
IN REVIEW OF THE DEFENSE AUTHORIZATION REQUEST
FOR FISCAL YEAR 2019 AND
THE FUTURE YEARS DEFENSE PROGRAM

Tuesday, March 20, 2018

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

The committee met, pursuant to notice, at 9:24 a.m. in
Room SH-216, Hart Senate Office Building, Hon. James M.
Inhofe, presiding.

Committee Members Present: Senators Inhofe
[presiding], Wicker, Fischer, Cotton, Rounds, Ernst, Tillis,
Cruz, Sasse, Scott, Reed, Nelson, McCaskill, Shaheen,
Gillibrand, Blumenthal, Donnelly, Kaine, King, Heinrich,
Warren, and Peters.
OPENING STATEMENT OF HON. JAMES M. INHOFE, U.S.
SENATOR FROM OKLAHOMA

Senator Inhofe: Our meeting will come to order.

The committee today is meeting to hear testimony on the posture of the U.S. Strategic Command, and we welcome our witness, General Hyten, Commander of STRATCOM.

The Trump administration’s National Defense Strategy prioritizes in reemergence of long-term strategic competition. Nowhere is this reality more evident than in Russia and China intensifying their efforts in the nuclear, cyber, and space domains, which are a focus of a Strategic Command mission.

The Nuclear Posture Review released last month orients our nuclear enterprise to address these strategic competitors. The NPR offers continuity in the U.S. nuclear modernization efforts and wisely advocates developing additional capabilities to achieve our fundamental goal of nuclear deterrence.

Our potential adversaries are not standing still. In his recent state of the nation address, Putin unveiled new nuclear weapons, including heavy, mobile ICBMs and hypersonic glide vehicles. Meanwhile, Russia’s continued violations of both the INF and Open Skies treaties threaten to undermine strategic stability.

And then there is China. China is rapidly expanding
its missile forces, including development of new ICBM
capabilities and advanced ballistic missile submarines. It
recently developed a new nuclear capable strategic bomb,
achieving a nuclear triad for China.

Beyond our strategic competitors threats from North
Korea and Iran persist. In particular, recent North Korean
missile tests suggests that they are capable of striking the
homeland with an ICBM. I would say I am more optimistic now
about North Korea than I was just a short while ago. I
think our response to North Korea’s threat was one that
actually produced some good results. So I think that right
now I really believe that the meeting is going to take place
with Kim Jong-un and our President.

Russia and China are also increasingly active in space,
intent on challenging our domain superiority to achieve an
asymmetric advantage. Both countries invested significant
resources in anti-satellite ISR, direct energy, jamming, and
cyber capabilities. We have got to do more to meet these
challenges.

Thank you for being here, General Hyten.

Senator Reed?
STATEMENT OF HON. JACK REED, U.S. SENATOR FROM RHODE ISLAND

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

And, General Hyten, thank you for your service to the country and for testifying on the posture of the United States Strategic Command as we prepare for the fiscal year 2019 National Defense Authorization Act.

I would like to hear from you about a number of topics based on your office call with me last week. Thank you again for making time.

First and foremost is the administration’s Nuclear Posture Review. It adopts many of the same premises as the 2010 posture review that we will not use nuclear weapons against nations in good standing under the Nuclear Nonproliferation Treaty, but we always reserve the right in cases of extreme circumstances to use nuclear weapons. It affirms the importance of nonproliferation but places an emphasis on the changed threat conditions that exist today versus 2010. It reaffirms the importance of the 2010 review and modernizing the triad of delivery platforms and weapons and their nuclear command, control, and communication, or NC3 systems. But it also proposes two supplemental systems: a low-yield submarine-launched ballistic missile and a sea-based cruise missile which was dropped in the 2010 posture review because it was not being deployed and maintained. I
am referring to the sea-based cruise missile.

While I agree with much of the NPR, I have concerns about the low-yield submarine-launched warhead. It is my understanding that this system is in response to Russia’s military doctrine of using a small-yield nuclear weapon as a means to escalate to deescalate or escalate to win a conventional conflict. The Russian doctrine of escalate to deescalate could easily spin out of control if our response to their low-yield weapon is to use a similar one which could escalate into exchange of larger weapons. We have to devote considerable effort to war-gaming this problem and ensure that existing systems, both conventional and nuclear, cannot meet this doctrinal challenge of escalate to deescalate.

In any case, such a proposal certainly opens up a debate of deeply held opinions. While this debate may be important to have -- I think it is important to have, indeed -- I worry that it may disrupt the bipartisan consensus that presently ensures the modernization of the triad and NC3 system. This process will take decades and I believe it should be our highest priority and sole focus.

Beyond the nuclear mission, General, you also have an increasingly important space mission. I realize much of this is classified, but it is imperative that you communicate in an appropriate format what this budget
Your command proposes and how it addresses the threats we face.

You are also responsible for synchronizing global missile defense plans and operations. I would like to hear your thoughts on the state of our homeland and regional systems, how we need to improve reliability and address advancing threats.

Your command is also responsible for spectrum operations and electronic warfare. I would like to know what your command has been advocating to make this integrated effort across the Department of Defense.

Strategic Command, as its name implies, is about deterrence with near-peer competitors. Today, deterrence is a seamless continuum between land, sea, air, electronic spectrum, and space. You have many issues on your plate, and I look forward to your testimony.

Thank you very much, sir.

Senator Inhofe: General Hyten, you are recognized for an opening statement. Your entire statement will be made a part of the record.
STATEMENT OF GENERAL JOHN E. HYTEN, USAF, COMMANDER, UNITED STATES STRATEGIC COMMAND

General Hyten: Thank you, Senator Inhofe, Ranking Member Reed, members of the committee. I am honored to be here today in a continuing privilege for me to represent the 184,000 Americans, the 184,000 men and women performing the missions of U.S. Strategic Command every day.

I want to start by thanking you for your enduring support to our nation’s defense.

As we sit here today, it is important to note that the appropriations bill funding our military is still awaiting full approval by the Congress. Passage of this bill is essential in ensuring our Department maintains the ability to field the most lethal, capable, and resilient military in the world. I remain optimistic that Congress will pass this bill as the existing continuing resolution expires this Friday. Reliance on continuing resolutions in lieu of stable budgets delays mission-critical modernization, degrades troop morale, and impedes readiness recovery. But I am grateful for this committee’s continued support. But timely budgets are essential in order to ensure our all volunteer force remains fully trained and equipped to address the nation’s existing and emerging future threats.

The first most important message I want to deliver today is that the forces under my command are fully ready to
deter our adversaries and respond decisively should
deterrence ever fail. We are ready for all threats. No one
should doubt this. We just have to make sure that the
future STRATCOM commanders that come after me will always be
able to make this statement.

STRATCOM is a global warfighting command. We set the
conditions across the globe as the ultimate guarantor of our
national and allied security. Our forces and capabilities
underpin and enable all other joint force operations.
STRATCOM forces are dispersed across the globe, under the
sea, on the land, under the land, in the air, across cyber
and into space. The men and women of this command are
responsible for strategic deterrence, nuclear operations,
space operations, joint electromagnetic spectrum operations,
global strike missile defense analysis and targeting and
still cyberspace operations until Cyber Command is elevated.

Today, our country is challenged by multiple
adversaries with an expanding range and capabilities
available to them. To maintain military superiority in this
multipolar, all-domain world, we must out-think, out-
maneuver, our-partner, and out-innovate our adversaries.
Deterrence in the 21st century requires the integration of
all our capabilities across all domains, enabling us to
respond to adversary aggression anytime anywhere.

The bedrock of our nation’s deterrence continues to be
our safe, secure, ready, and reliable nuclear triad. The
surest way to prevent war is to be prepared for it, and
while the current triad continues to provide the backbone of
our national security, we will eventually consume the last
remaining margin from our investments made during the Cold
War. And our modernization programs are critical and
include the B-21 bomber, the Colombia class ballistic
missile submarine, the ground-based strategic deterrent, the
long-range standoff cruise missile, nuclear command and
control, and life-extended nuclear warheads, which will
provide, without a doubt, the nuclear deterrent capability
that our nation needs now and well into the future.

The recently completed 2018 Nuclear Posture Review
reinforces and clearly defines longstanding national
objectives regarding nuclear weapons. From a warfighter
perspective, there is important consistency between the 2018
NPR and its predecessor. The biggest difference, as with
the recent National Defense Strategy, is the return to
threat-based planning and response to great power
competition. We started the NPR with assessment of the
threat -- it was all about the threat -- and based our
approach on what our adversaries are doing today and the
increasing challenges of the future. We have to remember
the strategic environment is dynamic. It changes
continuously. And our approach to deterrence must be equally
dynamic to address these evolving threats.

STRATCOM truly is a global warfighting command, and the strength of its command is its people. The soldiers, sailors, airmen, marines, civilians of this enterprise have the most important mission in our entire Department and our entire nation. Their hard work and dedication ensures our nation’s strategic capabilities remain safe, secure, reliable, and ready. Sustained congressional support will ensure we remain ready, agile, and effective in deterring strategic attack assuring our allies and partners well today and into the future.

So I thank you for the opportunity to be here, and I look forward to your questions.

[The prepared statement of General Hyten follows:]
Senator Inhofe: Thank you.

When a quorum is present, we are going to shift over and do some confirmations, a brief interruption.

As you heard the opening statements from both Senator Reed and myself, there is little difference of opinion in terms of low-yield capabilities. Both China and Russia have a robust nuclear arsenal and a triad of delivery systems, as you said in your opening statement. And I think that China and Russia are identified a little differently than the rest of the threats. I think General Dunford said it the best way. He said we are losing our qualitative and quantitative edge.

The 2018 Nuclear Posture Review calls for the development of a low-yield nuclear weapon in the range of approximately 10 kilotons to counter Russia’s tactical nuclear weapons, weapons that are not controlled by New START.

Now, when you talk about 10 kilotons, sometimes we have to remember what is a kiloton. And I think Hiroshima was 15 kilotons. The Minuteman 3 is around 300-350 kilotons. So you are talking about a capability that is not there right now.

The New START limits both the United States and Russia to 1,550 deployed strategic nuclear weapons. It has been stated policy that since the early 2000s, that Putin could
use a nuclear weapon in a conventional fight to, using his words, escalate to deescalate the conflict by using a tactical nuclear weapon to halt hostilities. Now, I know that some worry that this might lead to increased nuclear proliferation.

But I would kind of like to hear from you what your thoughts are. And this is a part of the posture review right now. Do you think we ought to have a low-yield capability?

General Hyten: So I strongly agree with the need for a low-yield nuclear weapon. That capability is a deterrence weapon to respond to the threat that Russia, in particular, is portraying. President Putin announced as far back as April of 2000 that the Russian doctrine will be to use a low-yield nuclear weapon on the battlefield in case of a conventional overmatch with an adversary.

Senator Inhofe: Let us say if we do not have one, the only thing we could do, if we were to use a response, would be a larger one in terms of kilotons.

General Hyten: So two limits in that is Henry Kissinger recently said that if you do not have the right response, you could put the United States in a position where the two choices for the President would be surrender or suicide, suicide if you escalate too high and the escalation comes back at you, surrender if you do not have
the ability to respond.

We do have low-yield nuclear weapons in our arsenal. They are with our aviation capabilities right now, but those aviation capabilities may not be the right response in terms of timeliness and survivability to get to where the threat is. Therefore, to respond to the threat, we need a small number of low-yield nuclear weapons that we can deploy on our submarine-launched ballistic missiles, still in the New START limits.

Senator Inhofe: And I remember the conversation we had, when Kissinger was here, on that.

We talk a lot about the hypersonic threats that are out there. Let us start off by -- give me a definition of a hypersonic threat.

General Hyten: A hypersonic threat is a system that starts out ballistic, and so you will see it like a ballistic missile, but then it depresses the trajectory and then flies more like a cruise missile or an airplane. So it goes up into the low reaches of space and then turns immediately back down and then levels out and flies at a very high level of speed. That is hypersonic. That is a hypersonic weapon.

Senator Inhofe: Do both or either Russia or China have the hypersonic threat capability?

General Hyten: Both Russia and China are developing
hypersonic capabilities. We have watched them test those
capabilities. So both Russia and China are aggressively
pursuing hypersonic capabilities.

Senator Inhofe: If that happens, what kind of defense
do we have against a hypersonic threat?

General Hyten: Our defense is our deterrent
capability. We do not have any defense that could deny the
employment of such a weapon against us. So our response
would be our deterrent force, which would be the triad and
the nuclear capabilities that we have to respond to such a
threat.

Senator Inhofe: And then back to the triad, the
capability that we would have with ours -- when I talk to
people back home who are not really into these issues, but
they have heard of the B-52 and how old it is today and to
use that for the length of time that we anticipate we would
have to use that before we are able to replace that. What
do you think in terms of the age of the three elements of
our triad and their capability relative to those of China
and Russia?

General Hyten: So as you look across our force, you
can start with the B-52. It is such an amazing airplane.
The designers of the airplane were geniuses way before their
time. But it is basically a truck to carry weapons. It is
not a penetrating bomber. It will never be a penetrating
bomber. A penetrating bomber would be the B-21. We only have a small number of B-2’s. We need a larger number of penetrating bombers. That will be the B-21. We will need a new weapon to go on the B-52. We will need the long-range standoff weapon.

I am concerned about our ICBM force about the 2030 time frame and beyond. We replaced the propulsion, the guidance, the electronics on that system 15 years ago or so, and by 2030, all of those capabilities will have aged out. We did a detailed analysis that said the smartest thing we can do is just buy new this time instead of trying to replace all the components. We will have to do that.

The Ohio class submarine. At a certain point, it will not go down under the water anymore. We need a new submarine to replace that, and we need new command and control and we need new weapons as well.

All those things come to fruition in the 2030s.

Senator Inhofe: Yes. Thank you, General Hyten.

Senator Reed?

Senator Reed: Well, thank you, Mr. Chairman.

Again, General, I think this is a very serious debate about the new proposed systems, particularly the low-yield submarine-launched ballistic missile.

As you indicated in your testimony, we have systems that are even lower yield than the one we are proposing.
today. They are generally airborne I believe, platform-launched by an aircraft.

One of the things -- and we talked about this -- is there will be -- my sense -- a reaction and reaction. This will be a dynamic process. If there is a conventional attack, I do not think we will sit back and wait till they threaten to use a nuclear device. We will start positioning our resources immediately. And some of those resources will be low-yield nuclear weapons as a deterrent to their use of weapons.

In that context, why can we not use something like the long-range standoff weapon as a deterrent to the use of small nuke by the Russians?

General Hyten: The answer is basically the reason we have a triad. We have a triad to respond to the different elements of the threat that Russia brings to bear. Russia is going to have, in the unclassified world, at least 11 different delivery platforms for a low-yield nuclear weapon that they can use in different places and different times. Right now, we have one and that is an airplane. The airplane can be positioned in the right place in order to respond to that kind of threat, but an airplane is also difficult. It has to fight through a denied environment. It has to work in different areas.

As we worked through the various gaming of the
responses that the Russians may have to those capabilities, we felt strongly that we needed another delivery option. So a small number of low-yield nuclear weapons on the submarine-launched ballistic missile, still under the 1,550 deployed strategic nuclear weapons under the START treaty. In other words, we will take a big weapon out of a submarine and put a small weapon back in, still the same kind of structure. We believe that will give future adversaries significant pause before they act.

Senator Reed: Again, I think the whole issue -- and you put your finger on it -- is deterrence. And the flip side of that is that even if we have these new systems, if they make, I think, the extraordinary error of using a nuclear device, we respond. There is at least the option on the other side -- as you point out, they have multiple launching devices and multiple nuclear warheads -- is to maybe try a second one which we try a second one. And again, we get into this nuclear escalation scenario, which I think we are concerned about.

And this is an issue I would like to say -- I think it is a point we have to really think very, very clearly about and share with you your thoughts and the gaming that you have done and analysis you have done to see -- again, for the public to vet this. So I look forward to doing that with you.
One of the other proposals is the sea-based nuclear cruise missile. And as you know, in 2010, the prior NPR canceled the submarine-based cruise missile because the Navy literally had it in storage, and NNSA was not modernizing its warheads. So it seemed to be sort of obsolete in effect.

We have got some criticism from our colleagues, our allies, the South Koreans and the Japanese, because they see this as a very effective extended deterrent.

Can you just state the military requirement now for bringing back this system?

General Hyten: Yes, sir.

The threat is from both Russia and China that drives the need for the sea-launched cruise missile. We have not made a decision yet about how to base that, whether it is on a surface ship or a submarine. We will look at that. Part of the 2019 budget request is to start down that process and decide what the best basing for that would be.

I can tell you the details in a classified session of why we believe the threat demands it, but I can tell you the threat is clear and I believe we need that to respond to the threat that is there.

Senator Reed: Thank you, sir.

Just a final question is that we mutually rely upon NNSA to create the nuclear pits and all the other basic
components of our nuclear missile response. Your predecessor, General Keller, indicated that he had some doubts about the ability of NNSA to do this given the ongoing debate about whether production would be in Los Alamos or elsewhere or what kind of production, the big box or the small box. Do you share those concerns?

General Hyten: Well, I still have concerns. Those concerns have not gone away.

However, you should know that the Director of NNSA, Lisa Gordon-Hagerty -- the first day that she took the oath, the first call she made was to me to commit that NNSA and the Department of Energy was fully on to deliver the capabilities that we need. As the STRATCOM Commander, my requirement for a future capability is that we need to build to 80 plutonium pits by 2030 in order to build out the nuclear weapons profile. I think that has been well studied, understood. We can talk about that further later if you desire.

But I still am concerned because the infrastructure is challenged, but the current leadership in DOE has made a commitment to me that they will go after that. I guess the concern that I have left over is we do not have a lot of margin there, and anytime we do not have a margin, I am concerned.

Senator Reed: Thank you, sir.
Thank you, Mr. Chairman.

Senator Inhofe: I ask the committee to consider a list of 2,901 pending military nominations. All of these nominations have been before the committee the required length of time.

Is there a motion to favorably report this list of 2,901 pending military nominations to the Senate?

Senator Reed: So moved.

Senator Inhofe: Is there a second?

Senator Fischer: Second.

Senator Inhofe: All in favor, say aye.

[Chorus of ayes.]

Senator Inhofe: All opposed, no.

[No response.]

Senator Inhofe: The motion carries.

Senator Fischer?

Senator Fischer: Thank you, Mr. Chairman.

Thank you, General, for your service to this country, and I thank you for representing the men and women under your leadership.

The NPR states, quote, if Russia returns to compliance with its arms control obligation, reduces its non-strategic nuclear arsenal, and corrects its other destabilizing behaviors, the United States may reconsider the pursuit of an SLCM. End quote.
However, in the debate, this statement has lost some of its nuance, and some now describe the SLCM as purely a chip to bargain for Russia’s return to compliance with the INF Treaty.

Can you clarify this? And if Russia returned to compliance with the INF Treaty and otherwise maintained its current course with respect to non-strategic nuclear weapons, would it be your best military advice to cancel the deployment of the SLCM?

General Hyten: Senator, I agree with my boss, Secretary Mattis. I do not like the term “bargaining chip.”

The capabilities that we proposed in the Nuclear Posture review are in response to the threat. Everything that we talked about, including the low-yield nuclear weapon and the sea-launched cruise missile, are in response to a threat.

If that threat changes, then my military advice will change. But if that threat does not change, my military advice will stay that we need those capabilities in order to respond to the threat. I am not a diplomat. I am not a politician. Diplomats need to work those issues with our adversaries. I hope that they do, but my job as a military officer is to look at the threat, understand the threat, and propose capabilities to this body to deliver to the military so we can respond to any threat that exists. It is all
about the threat.

Senator Fischer: And while we are on the topic of Russia’s violations of the INF Treaty, your opening statement reads, quote, Russia’s violation of the treaty with the development of the SSC-8 ground-launched cruise missile remains a significant issue as delivery of the treaty-violating system continues.

And when you say delivery of the treaty-violating system continues, do you mean that Russia is continuing to produce and deploy the illegal system in greater numbers?

General Hyten: Yes, ma’am.

Senator Fischer: Since the NPR’s release, some, the Russian Government in particular, deny that Russia genuinely has an escalate to deescalate strategy. And I think you were questioned by a member of the Russian embassy staff on this point during a speech that you gave last month.

Do you agree with the NPR’s assessment that the escalate to deescalate strategy reflects that Russian doctrine?

General Hyten: I guess I will say that I watch very closely what President Putin says, and I watch very closely what the Russian military does in response. President Putin in April of 2000 -- April of 2000 -- almost 18 years ago, President Putin said that the doctrine of Russia will be to use nuclear weapons on the battlefield in a conventional
scenario. And that has been the continuing doctrine of Russia for almost 18 years. This is nothing new.

We need the ability to effectively respond to that. We need the ability to deter that. We do not want that to ever happen. There is no such thing as a tactical nuclear weapon in my opinion. There is no such thing as a conventional nuclear weapon. All nuclear weapons are strategic, but you need different kinds to respond to different threats.

Senator Fischer: And would you agree that when we are looking at this continuous threat of a Russian doctrine to escalate to deescalate that is based on the talk of their senior leaders? It is based on the fact that they are building weapons that are designed for this purpose and that they do conduct training exercises.

General Hyten: There is no doubt that they do all of those things. And when I have my intel -- I do not speak Russian, but when I have my intels translate the Russian for me, it is not escalate to deescalate. It is escalate to win. It is escalate to win on the battlefield. And we have to deter that kind of response. That cannot be allowed.

Senator Fischer: General, critics have made a variety of arguments against the deployment of that low-yield ballistic missile warhead on a submarine. In sum, they believe the system is impractical because any use of the weapon would enable the submarine to be detected, destroyed,
and they believe would initiate a full-scale nuclear war.

Can you speak to those arguments, sir?

General Hyten: Those arguments are not true, ma’am. I can tell you in a classified forum how a submarine would survive after launching. I can tell you how the Russians would see it. I can tell you how they would respond to that. I can also tell you that from a U.S. perspective, when we see a launch of a missile, we can characterize that threat. We understand where it is, where it is going. And unless it is a massive attack from Russia, any other scenario, there is actually a lot of time to respond, a lot of time to characterize, and it will be the same way on the Russian side. So each of those arguments are false. It is better to discuss the answers in a classified session.

Senator Fischer: Thank you, sir, for addressing these immense threats that we face.

General Hyten: Thank you, ma’am.

Senator Inhofe: Thank you, Senator Fischer.

Senator Nelson?

Senator Nelson: Good morning, General.

I am not too keen on ripping space out of the Air Force and creating a space corps. Do you want to state your position for the record?

General Hyten: So I think I have stated my position many times. I think that some day we will have a space
corps or a space force in this country. But I do not think the time is right for that right now. But I loved the fact that the President talked about space as a warfighting domain. I loved the fact that he embraces the fact that we need to have a future that looks at this warfighting domain. I am a big supporter of the bill that was passed by Congress last year in the National Defense Authorization Act that talks about looking at a space force and looking at when that would be the right time and what elements would be in place. I think the best example is the budget. The budget that was submitted this year is an 18 percent increase in space. Looking at warfighting, we are going to get after those pieces. And so both the President and the Vice President and Members of this Congress, everybody is aligned with the threat. That is exactly where it should be, Senator. Thank you.

Senator Nelson: So you gave a speech back in December that the days of viewing space as a benign environment are clearly behind us, and we need to maintain our lethal edge in space. And you have said continually since then that in order to maintain the edge, we have to move faster. Do you think this is happening?

General Hyten: I see good signs. The good signs I see is the leadership in the Department right now: Secretary Mattis, Secretary Shanahan, Lord, Mike Griffin in R&E. I
see leadership in the Air Force and AQ that all believe in going fast. I think the budget lays the groundwork for going fast, but Senator, we have not done it yet. We have not done any of that yet. We have not proven to anybody that we can go fast again. We used to be able to do that. We need to be able to do it again. We can do it again. But we have to get out of our own way. But I am excited about the leadership in the Department that has been put in place to help lead that change.

Senator Nelson: General, I dare to touch the politically sensitive topic of the JCPOA. If the President were to unilaterally withdraw, what kind of impact is that going to have on our global security environment?

General Hyten: So my job, Senator, is to look at that treaty, look at what it does to our overall strategic deterrent, work with the intelligence community, as well as the broader interagency to evaluate whether Iran is in compliance with JCPOA. And as I sit here today, Iran is in compliance with JCPOA.

But JCPOA is about nuclear, and from a command that is nuclear, that is an important piece to me because it allows me to understand the nuclear environment better. But it does not say anything about Iran as a global sponsor of terrorism or Iran is building huge numbers of ballistic missiles that threaten their neighbors and potentially us
some day. All of those will be the decision that a
policymaker has to make, but my job is to look at the
nuclear capabilities and make that recommendation, which I
have done.

Senator Nelson: If we were to pull out of the JCPOA,
does that send a message to North Korea?

General Hyten: Any action the United States makes
sends a message to everybody on the planet. So it will send
a message to North Korea. It will send a message to Russia,
China, our allies, Iran, Saudi Arabia. Everybody is
impacted. That is one of the differences in deterrence in
the 21st century is that it is no longer a single country
problem and a single issue problem. It impacts everybody.
So every decision has to be considered in concert with the
entire global environment.

Senator Nelson: General, you already discussed in
detail the threat of the hypersonics. Your answer was that
we need this submarine-based low-yield nuclear capability.
Is that the deterrent to hypersonics not only from Russia
but also China?

General Hyten: So that is where we stand today. But I
believe we need to pursue improved sensor capabilities to be
able to track, characterize, and attribute the threats
wherever they come from. And right now, we have a challenge
with that with our current space architecture and the
limited number of radars that we have around the world.

In order to see those threats, I believe we need a new space sensor architecture. The Missile Defense Agency and the Air Force are looking into that right now. There are $42 million in the fiscal year 2019 budget in the Air Force line to look at that, alongside of MDA as a prototype. I am going to advocate, as I have advocated for the last 30 years that we need to move into space and be able to build sensors to conduct both the characterization of these new threats that are appearing, as well as discriminate better and earlier the mid-course element of the threat that exists today.

Senator Nelson: Mr. Chairman, in conclusion, I will just say I am sure that General Hyten lays awake at night after he has prepared all of this infrastructure up in space to protect us, and then he sees the threat of cyber attacks on that infrastructure, that that must keep you awake at night, General.

General Hyten: All the threats keep me awake at night, sir. I wish they did not.

Senator Nelson: Thank you.

Senator Inhofe: Thank you, Senator Nelson.

Senator Cotton?

Senator Cotton: Thank you, Mr. Chairman.

Thank you, General, for testifying once again in front
of our committee.

I want to return to something you said a few moments ago. You mentioned the Vladimir Putin first started talking about the use of nuclear weapons on the battlefield 18 years ago. Is that right?

General Hyten: Yes, sir. I think it is worth going through that entire history because it goes across multiple administrations. It really talks about where Russia has been for the last 18 years. In April of 2000, he announced that the new doctrine of use of low-yield nuclear weapons on the battlefield was part of the Russian doctrine. He also announced a 50 percent increase that year in the budget for nuclear capabilities. 6 years later, he announced that Russia was going to modernize their entire nuclear arsenal and build new weapons and they were going to be 70 percent done by 2020. Dmitry Rogozin in 2015 came out and said we are not going to 70 percent done. We are going to get 100 percent done by 2020. This has been a continuing pattern of behavior that creates a threat to the United States that we have to respond to. That is the work that we have been doing, and that is what the Nuclear Posture Review does. And I think it is a very measured response to the threat that has been presented to us, much more measured than the speech Vladimir Putin gave on the 1st of March.

Senator Cotton: So it is often perceived that Vladimir
Putin and his senior general staff’s rhetoric on this is a response to U.S. actions, especially post-2014 in their Crimea invasion. But what you are saying is he first started raising this in less than a year after he had taken over leadership in Russia.

General Hyten: Almost immediately upon his first election in 2000, he made this.

Senator Cotton: I think that is very telling. Now, sometimes talk is cheap with politicians, but when that talk is backed up by a substantial commitment of national resources, you can usually accredit it. Would you say that Russia has engaged in a substantial commitment of their national resources to modernize their nuclear force over these last 18 years?

General Hyten: An enormous of their national treasure.

Senator Cotton: And that threat is primarily driving the 2018 Nuclear Posture Review for our country.

General Hyten: The Nuclear Posture Review is very consistent with previous, but it addresses the threat specifically.

Senator Cotton: Let me ask you this broad question before you get into any details. So we have been doing nuclear posture reviews for a while. We have been a nuclear power for 73 years. Is there a single operating concept or capability in the 2018 Nuclear Posture Review that is truly
innovative or not reflective of 73 years of tradition in
this country?

General Hyten: It is all consistent with what we have
been looking at from nuclear capabilities really since the
beginning of the nuclear age in August of 1945.

Senator Cotton: So let us now be specific on a few
points.

First, it has been this country's position for 73 years
that we would not foreswear the first use of nuclear
weapons. Is that correct?

General Hyten: That is correct.

Senator Cotton: And it remains so today.

General Hyten: And it remains so today.

Senator Cotton: Second, we have talked some about the
low-yield submarine-launched warhead. While that specific
capability may not have existed to this point on a
submarine, as you have testified before, we have had lots of
other low-yield weapons and we continue to have low-yield
air-launched or bomb warheads. Correct?

General Hyten: We used to have low-yield submarine-
launched weapons too. As I think Senator Inhofe talked
about, we did not maintain those going into the previous
Nuclear Posture Review.

Senator Cotton: Is that low-yield submarine-launched,
or is that sea-launched cruise missiles?
General Hyten: It was low-yield submarine-launched at that time.

Senator Cotton: But we have also had sea-launched cruise missiles before.

General Hyten: We have had sea-launched cruise missiles before. None of those capabilities are new. They are reintroducing previous capabilities that we felt were needed to deter our adversaries and we believe we need to deter those adversaries again.

Senator Cotton: Again, driven primarily by the threat that Russia has posed by both the rhetoric and the reality of their nuclear modernization, as you have testified today, not just in the last year, not just in the last 9 years, but going back 18 years across three prior administrations, the Clinton administration, the Bush administration, and the Obama administration.

General Hyten: That is true, but it is also important to add China and North Korea into that equation because they drive the threat as well.

Senator Cotton: I think that is an important point. Almost all strategic discussions, certainly strategic arms control negotiations revolve around the bilateral threat between the United States and Russia. China is rapidly modernizing its nuclear forces. Much of that happens in a very clandestine fashion. So it is hard to say just how
dire that threat has become. Certainly when you add Russia and China together, we do face the potential threat of nuclear overmatch in the future.

And I have to say we do not have a good history of estimating nuclear weapons programs. We usually, in the last 73 years, have gotten it wrong when you look at countries like the Soviet Union, like China, like India, like Pakistan, and erred on the side of caution saying that it would take them longer to develop those threats.

So I think it is very important what you are doing at Strategic Command, what the entire administration has done with this new Nuclear Posture Review to counteract those threats that we face and to keep this country safe from ever having to face a nuclear war. And the best way to do that is to have nuclear overmatch against all of our adversaries.

Thank you.

General Hyten: Thank you, sir.

Senator Inhofe: Thank you, Senator Cotton.

Senator Shaheen?

Senator Shaheen: Thank you, Mr. Chairman.

General Hyten, thank you for being here and for your constant vigilance.

I want to go back just quickly to a question that Senator Nelson posed about Iran’s nuclear capabilities, recognizing that you are looking at it only from the nuclear
perspective, and I share your concern about their other destabilizing activities. But in your assessment, are we not better off with an Iran that does not have nuclear weapons than we would be with an Iran that does have nuclear weapons?

General Hyten: I would prefer nobody had nuclear weapons. That would make my job a whole lot easier.

Senator Shaheen: I certainly agree with that. But on the issue of Iran --

General Hyten: Would I prefer Iran without nuclear weapons? Absolutely. I would prefer Korea without nuclear weapons.

Senator Shaheen: Thank you.

General Hyten: I do not think nuclear weapons will ever go away. But I believe in nonproliferation, and the more nuclear weapons proliferate, the more difficult the world is.

Senator Shaheen: Thank you very much.

I want to go back to something you said at a hearing in 2017 when you were before this committee because I asked you about cyber efforts and specifically whether you think we have a strategy that incorporates both a defensive and offensive strategy with respect to cyber attacks. And I wonder if you can discuss whether we have made any progress since that hearing in 2017 on these issues.
General Hyten: So, ma’am, we have made progress.

Senator Shaheen: Can you talk a little bit about what that is?

General Hyten: We have made progress in moving forward and taking the fight to the adversary that is in the Middle East right now. But in my opinion, we have not gone nearly far enough. I think we have to go much further in treating cyberspace as an operational domain. Similar to the discussion we were having earlier about space as a warfighting domain, cyberspace needs to be looked at as a warfighting domain. And if somebody threatens us in cyberspace, we need to have the authorities to respond.

I always find it odd that we will give young soldiers, sailors, airmen, and marines lethal authority to operate far from home in harm’s way to apply lethal force against an adversary using a set of rules of engagement, but we will hesitate to give a four-star admiral the authority to conduct cyberspace operations because we are concerned he will not follow the rules of engagement. We need to have specific rules of engagement in cyber that match the other domains that we operate in, but then we need to delegate that authority all the way down so we can deal with threats that exist that challenge the United States.

Senator Shaheen: Well, I agree with that. So what do we need to do in Congress to make that happen? Do we need
to give you express legislative authority? Do we need to
delineate who has got those authorities?

General Hyten: I always hesitate to advise Congress on
what you should do. That is your responsibility.

But I will tell you when I look at, what would be
helpful to me is statements like we have had the last 2
years in space where space is a warfighting domain, and we
need to develop responses to the warfighting domain. What
that has done is it allowed us to push the envelope inside
the Department. We are not there yet. We are going to be
coming back in space with a number of different things about
declassification of certain capabilities, additional
authorities, those kind of things. But stating it is a
warfighting domain similar to land, sea, and air was a huge
step forward for us to move forward. I think we need
similar things in cyberspace.

Senator Shaheen: Well, does, to some degree, the
Nuclear Posture Review not do that because it suggests that
a response to a massive cyber attack might be the use of
nuclear force? I mean, I do not agree with that, but it
does sort of lay that out, that that is a potential
response.

General Hyten: I think it is clear that you could have
catastrophic attacks on the United States through space or
cyber and that we need to have the ability to respond to
that and a means of our choosing in a domain of our choosing. People always ask me in space and cyber, how do you deter in cyber? How do you deter in space? How do you fight and win a war in space or cyber? You do not. War, conflict, deterrence is against an adversary, not against a place. You have to take the place out of it and focus on the adversary. What is the adversary doing? How do I deter that adversary? That is the piece that we have to go down, focusing back on an adversary.

And that is what you see in the Nuclear Posture Review, focusing on adversary threats. How do we respond to that? And then hopefully that allows room for our diplomats to sit down with our adversaries and say is this the world you really want to live in.

Senator Shaheen: Well, thank you. I am out of time. Can I just ask one more question, Mr. Chairman?

You talked about the progress, so to speak, that Russia has made in nuclear weapons and their military might. And this is a country with an economy that I think is about the size of Italy that has been under sanctions for a number of years since they invaded Ukraine. And that has done all of this military buildup despite those things. So what are they doing right to allow them to do this, and what lessons can we take from that?

General Hyten: Well, “right” is in the eye of the
beholder.

Senator Shaheen: Right. You are right. I do not really mean to say “right.” But what have they done to be successful in this arena?

General Hyten: So they have decided that that is the most important investment they have to make as a nation, and they have put the vast majority of the resources they have left into that. Oh, by the way, North Korea has done the same thing. That is a prioritization in Russia and North Korea.

Senator Shaheen: Thank you.

Senator Inhofe: Thank you, Senator Shaheen.

Senator Rounds?

Senator Rounds: Thank you, Mr. Chairman.

General, first of all, thank you for your service to our country and thanks for the opportunity to visit with you today on some of these key issues.

I would like to follow up a little bit with where Senator Shaheen was going. I want to talk about our policy versus the policies of our near-peer competitors.

Let us just start out with the treaties that we have in place right now. With regard to INF, are we in compliance with the INF today?

General Hyten: We are in compliance with the INF today.
Senator Rounds: Would you say that Russia is in compliance with the INF today?

General Hyten: They are not.

Senator Rounds: Would you say that we have not only Russia to be concerned with with regard to similar weapons but also a near-peer competitor in China as well?

General Hyten: I agree that all weapons have be looked at on the global perspective.

Senator Rounds: Do you see any limitations on China with regard to the INF?

General Hyten: They do not have any limitations in the INF, and they have built significant numbers of intermediate-range ballistic missiles that if they were in the INF, they would be contrary to that treaty.

Senator Rounds: So with regard to our near-peer competitors, we have a deal with Russia. We do not have a deal with China. We are bound by the deal with Russia. We are honoring it; they are not. China, on the other hand, has no obligations to comply with it, and so they are free to move forward with their weapons development and deployment in place.

Is it fair to say that that puts us at a competitive disadvantage, similar to having one hand tied behind our back?

General Hyten: I think Admiral Harris testified to a
similar thing the other day. It makes his job much more
difficult.

But there is no one-size-fits-all when it comes to
deterrence. There is no one-size-fits-all. You have to
look at all the adversaries separately and then you look at
the impacts of any decision with those adversaries. I
believe that we are better off if Russia would come into
compliance with the INF and we would be in compliance with
the INF in the overall scheme of the world. However, we
have to make a decision in the near term. If they do not
come into compliance with the INF, how long will we continue
to, as you said, tie our hands?

Senator Rounds: And I think that is being recognized
in your posture position at this time.

Let me go on from there because what we have talked
about now -- we discussed the triad, the air, land, and the
sea. I think you made a very clear statement about both
cyber and also about space.

With regard to cyber, do you believe that our near-peer
competitors in cyber -- that they have the same
identification of what the norms are with regard to how we
operate in cyberspace as we do?

General Hyten: No, sir, they do not.

Senator Rounds: In other words, if I could shortcut it
a little bit, they do not see any problem with attacking us
in cyberspace today while we probably do not take as active a role in attacking their infrastructures they do in attacking our infrastructures today?

General Hyten: I think that the restrictions on Russia and China in particular are much less than the restrictions we put on ourselves.

Senator Rounds: And that is a policy decision on our part. Is it not?

General Hyten: That is a policy decision on our part.

Senator Rounds: What about with regard to space? Clearly any one of our weapon systems right now is dependent upon our ability to see and to hear and to monitor what other people are doing. Do they have the same norms with regard to operations in space as we do?

General Hyten: There are no such things as norms of behavior in space.

Senator Rounds: So are they more aggressive with regard to the deployment of militarily designed or systems that are designed with military purposes as we are?

General Hyten: So I do not want to talk about that in an unclassified session. I would be glad in a classified forum to go into details of what they are doing, but all I can tell you is that they are being very aggressive in establishing what they perceive as norms that we see that I cannot talk about in here at the current time.
Senator Rounds: Would it be fair to say that the eyes and ears that we have in space are at risk today from our near-peer competitors?

General Hyten: Today they are not at risk, but I am concerned in the near term they would be at risk. Today we have such an enormous capacity that the capabilities that our adversaries are building cannot challenge it just because of the sheer capacity that we have. But in the not too distant future, they are going to build the capabilities that will allow them to challenge that across the board, and we have to make sure we stay ahead of that threat.

Senator Rounds: Let me go to one other line of questioning for just a minute. The Air Force has recently announced their plans to retire the B-2 by the early 2030s, sustain the B-52 through 2050, and move forward with procurement of 100 B-21’s. Were you involved -- was STRATCOM involved in making the determination of the overall bomber requirements?

General Hyten: I was involved in the discussions.

Senator Rounds: Do you believe that 75 B-52’s and 100 B-21’s will be sufficient to conduct a nuclear deterrence mission while supporting conventional bomber missions as well?

General Hyten: I believe that is the minimum capability required.
Senator Rounds: Has the Department begun planning for basing the B-1’s -- I am sorry -- the B-21’s.

General Hyten: The B-21’s? I know that the basing process is underway. I think that is an Air Force issue. That is something that they will come to me, STRATCOM, when they come to the Congress as well. But that is an Air Force issue that they have to work. But I know that process is underway because, well, I am an Air Force officer. So I do stay in touch with my service.

Senator Rounds: I understand. Thank you, sir.

Thank you, Mr. Chairman.

Senator Inhofe: Thank you, Senator Rounds.

Senator Heinrich?

Senator Heinrich: Thank you, Chairman.

Welcome, General Hyten.

I want to say that I appreciate that you have long expressed your frustration about our inability as both government and military to move more quickly in terms of acquisition, as well as in terms of decision-making. And I certainly agree that we need to be more agile and responsive across the board. I think that applies to space systems. It applies to helicopters. It applies to our nuclear programs.

Does it concern you that the NNSA conducted an analysis of alternatives on pit production that chose to ignore the
Nuclear Weapons Council’s previously endorsed plan to meet our nation’s nuclear stockpile requirements and that it also took 3 years for that analysis to move forward?

General Hyten: It does not concern me they conducted an analysis of alternatives. I think that is a smart thing to do. But it does concern me it took 3 years. I do not think any AOA should take 3 years. We take 3 years in the Department of Defense a lot too. I do not know why that is, Senator. I do not know why we spend so much time. It used to be we could build something in 3 years, but now we like to study things for 3 years.

But like I said earlier, Lisa Gordon-Hagerty, the new Administrator of NNSA -- she called me day one and said we are going to get you the answer. I do not have the answer yet on where we are going to go. As a member of the Nuclear Weapons Council and as the STRATCOM Commander, my job is to state the requirement. The requirement is 80 pits. And, oh, by the way, the first element of that is 30 pits at Los Alamos. That is regardless of whatever the AOA comes out. We have got to get to 30 pits at Los Al first.

Senator Heinrich: Do you think it would have been appropriate and smart for them to at least have considered the pathway that was chosen a few years ago as a response to the fact that NNSA was not moving fast enough at the time?

General Hyten: So I think they are doing that in part
of their engineering analysis now. I have not seen the results of that yet. I will see that shortly. I think Lisa Gordon-Hagerty has committed to this body to come back in the near future.

Senator Heinrich: I have had some productive conversations with her.

Can you talk a little bit about what any additional slip would mean in terms of our life extension programs?

General Hyten: I am very concerned about any because basically all the new weapons that we just talked about, Columbia, sea-launched ballistic missiles, which is Trident, the GBSD, the new ICBM, the LRSO -- all of those require weapons. Plutonium pits that are 100 years old are not a good thing for this country. We do not know how to characterize that. We do not know the material interaction of all those pieces. We have to make sure that we have a modern -- if we are going to be a nuclear nation, we have to have plutonium pit production.

So I am concerned that we have now pushed that just like everything else so everything will deliver just in time. Anytime we have something that delivers just in time, I get very nervous.

Senator Heinrich: Well, I share your concern.

And the NDAA, Mr. Chair, that was just signed into law actually requires the Nuclear Weapons Council to certify no
later than May 11th of this year that NNSA’s recommendation actually meets requirements. So we have certainly got to get this thing back on track and get it on track quickly.

I want to shift gears for just a minute to some of the developments around what was formerly called Operationally Responsive Space. It is now the Space Rapid Capabilities Office. It certainly received significant priority in resources in this year’s budget request.

Can you talk a little bit about the importance of responsive space in general and describe how the newly designated Space Rapid Capabilities Office will contribute to our nation’s resilience in that domain?

General Hyten: So the key, when you look at the budget, especially when you look at all the elements, including the classified side, is the beginning finally of building a resilient warfighting architecture for space. That is the path we are starting down to right now. The Space Rapid Capabilities Office will be a key piece of that because there will be certain elements that will be small, resilient that we need to go fast with. They will be the perfect place to do that. We have to give them the authority and responsibility, the funding, and let them go do that. But like I talked about with Senator Nelson before, that is the good news.

The challenge we have now is we have not done it. We
have not done anything. It is just sitting right there. And I think, Senator, you have been involved in that discussion with me for at least the better part of a decade. And we have never quite got there. Everything is lined up now. It is right there. Everybody understands the need. The administration, the Congress, the Department understand the need. We have put a budget in place that starts down that starts down that path. Now we have to do it.

Senator Heinrich: I could not agree more. I think for the first time we actually have that alignment. So let us take advantage of it.

General Hyten: Yes, sir.

Senator Heinrich: Thank you, sir.

General Hyten: Thank you.

Senator Inhofe: Thank you, Senator Heinrich.

Senator Ernst?

Senator Ernst: Thank you, Mr. Chair.

And, General Hyten, very good to see you. Thank you for your leadership of Strategic Command, and for the men and women that serve with you in STRATCOM, we thank them for their service as well.

You have acknowledged over and over again today that space is becoming an increasingly contested and militarized domain. And while we continue to hold that technological advantage in space, our adversaries are rapidly catching up
to us. They are modernizing and developing their own space capabilities.

So I do appreciate your efforts to streamline the Air Force’s space acquisition process, which has significantly hampered our ability to rapidly develop and deploy our critical capabilities. I do believe more needs to be done to ensure the U.S. can overmatch our near-peer competitors and adversaries in space.

So the only way to solve a problem is to understand exactly what we are up against. And you have discussed what you can today in an open setting. But would you agree that the threats that we see in space are greater and more complex than they were in the year 2011?

General Hyten: Significantly greater. And I think tomorrow you will see in the closed hearing how all of that comes together because in the closed hearing, you will see the budget played out into the future against the threats that are now coming out. And you will understand the integration of all those pieces together. So weather permitting, I sure hope we get together tomorrow so you can see that.

Senator Ernst: Absolutely. And given that the last national security space strategy was developed in 2011, do you believe it would be worthwhile for the DOD to develop a modernized strategy to face today’s threats?
General Hyten: So if that is a yes or no question, which it sounded like, I will say yes. But I will tell you that the Air Force, the services, the National Reconnaissance Office and my command have worked together to build what I think is an integrated strategy. The challenge with it is it is so classified we can share it with only a very few people. We will be able to share it with you tomorrow.

I think the work we have to do is actually figure out what really needs to be classified in the future, how do we do that because we need to be able to plan with the other combatant commands, plan timing and tempo of our operations. All those pieces have to come together, and unless we have things that we can talk about in forums like this, it is a very difficult problem to do. So I think we have a very good strategy now. The problem is not that many people know it. So we are going to have to work that issue.

Senator Ernst: And I do appreciate that. You can see the level of concern that is coming from those of us on the Armed Services Committee here in the Senate. We do hear it from our public as well. While they might not have access to the same level of information, they do have a concern about it. So we look forward to getting that information.

On to the Nuclear Posture Review. The 2018 NPR stresses the importance of nuclear command, control, and
communications, so our NC3 modernization, promising
upgrades, new technology, and better governance and planning
across the commands. What are the greatest challenges to
sustaining and modernizing the Department’s NC3
capabilities?

General Hyten: So the biggest challenge is the
integration of all those new weapons platforms I was
describing before. Our nuclear command and control today is
secure and reliable, but it operates on the old weapon
systems, the old platforms, the old structure. We talked
about in 2030, the new submarine, the new bomber, the new
ICBM, new capabilities are going to come on line and they
are going to have to fit into a new nuclear command and
control architecture. And we have not directly defined that
for the Congress or for our nation yet, and we are going to
have to do that. And if you think about 2030, it sounds
like a long time away, but it is only 12 years. And so this
year, we have to make some critical decisions on
governments. The Chairman and the Secretary are involved in
that right now. And we have to get after defining what that
issue is.

Senator Ernst: So you would characterize this as that
we do not have sufficient and capable acquisition prepared.

General Hyten: So I would say that the nuclear command
and control today is fine. We can talk about that in a
classified forum, but it is good. But we have to have an acquisition plan that delivers the nuclear command and control in 2030 that will match all the weapon systems. And we have not matched that yet. The Air Force has done a good job in establishing the right structure. The Navy has done a good job establishing the right structure. But there is another element, which is the national piece, that is not as well defined yet, and how all those pieces are going to come together is probably the biggest question. So we understand the problem. We have clearly understand what the problem is. Now we have to explain to ourselves and then to you the approach to get there in the future.

Senator Ernst: I appreciate that. My time is expired but, General, I do want to thank you again for your leadership in this area and appreciate the fact that you are very forward thinking. We really do need that at such a critical time. So thank you to you and for the men and women that serve with you. Thank you.

General Hyten: Thank you, ma’am.

Senator Inhofe: Thank you, Senator Ernst.

Senator Warren?

Senator Warren: Thank you, Mr. Chairman.

And thank you, General Hyten, for being here.

General, we just passed a significant deadline for the New START treaty which requires both the United States and
Russia to limit the number of deployed nuclear warheads and platforms. And according to the terms of the agreement, both Russia and the U.S. were required to certify by February 5th of this year that we have met those caps.

General, are you confident, based on the verification mechanisms we have in place, that the Russians have lived up to their end of the agreement so far?

General Hyten: Again, a yes or no question. The answer is yes. There are some caveats. There are still disagreements on both the Russian and American side about certain elements of their bomber force, our bomber force. But we certified on the 5th. They certified. We believe, given the current mechanisms, that we are in compliance.

Senator Warren: All right, good. Thank you, General.

Last year, you told Senator Kaine that you continue to support the New START limits, and I understand that New START applies only to strategic weapons not to the entire nuclear arsenal. And I share your concerns about Russian verification in the INF Treaty that there are some areas where we have concerns. The Nuclear Posture Review calls for two new low-yield warheads to be developed in our own nuclear arsenal.

General, you said that you do not support increasing the number of strategic weapons. As part of developing these two new low-yield options, do you support increasing
the overall size of the nuclear arsenal?

General Hyten: No, ma’am. So here is what we will do. We will take each of the sea-launched ballistic missiles, the Ohio class submarines that we have. We will pull a missile out. We will take the large warhead off. We will put a small warhead on, put it back on the submarine, and put it out to alert. So the total numbers of weapons that we have will be greater, which is kind of an interesting piece is that we will have the same number of weapons, lower total yield, and somehow that is creating a destabilizing structure which is an interesting dynamic.

Senator Warren: Thank you, General. I appreciate the detail on this.

And if I can, just one more question on this. New START expires in February of 2021, but the agreement includes an option for a 5-year extension. What conditions would you want to see in place for us to extend New START?

General Hyten: So that is a question for the State Department. Again, I am not a diplomat. I am not in the White House.

My desire and what I present to the State Department and to my leadership in the White House is that if we can create conditions for stability across nuclear weapons across the board, that makes my job easier. My job is to defend the nation against nuclear threats, space threats,
all the threats that we have. And knowing what our
adversaries have and being able to verify that is hugely
important. I would like to be able to do that across the
entire spectrum of capabilities. But the most critical is
the strategic limits that are in the New START treaty.

Senator Warren: Good. Well, I appreciate that,
General. I have no illusions about Vladimir Putin. I think
he is a thug and a bully. And I think we will continue to
disagree with him more than we agree, including on nuclear
issues. But Russia and the United States still control
strategic nuclear arsenals capable of blowing up the world
many times over. So if it is possible to continue to make
progress and, as you say, more stability in this one area,
then I think we need to continue to have that conversation.

With my remaining time, I would like to ask one other
question and pick up on Senator Ernst’s point and ask you
about plans to modernize the nuclear command, control, and
communications system, the NC3. Last month, Senator Reed
and I visited Hanscomb Air Force Base in Massachusetts to
meet with the program executive office for NC3. We have got
some really talented people up there doing critical work.
But I am worried because everyone I have talked to agrees
that the Air Force Materiel Command, which is responsible
for acquisition side of NC3 recapitalization, is
understaffed for this mission.
So can I just ask, General? Will you commit to working with me and with this committee and with General Pawlikowski to advocate that NC3 is appropriately staffed so that it can move forward as it needs to?

General Hyten: I will commit to do that, Senator.

If I could, just one addition to that is that we actually have really good people assigned to that job right now. The problem really is that you can create the slots and put people in those slots, but this is such a complicated problem, that it takes years to build the expertise that you have. So just because you get a smart person and put him in the chair, it does not mean you have solved the problem. We actually have to get training for them and build that expertise up because we took our eye off that expertise, and now we have to rebuild it.

Senator Warren: Well, I understand that. And your point about we took our eye off this is absolutely spot on. The systems that comprise NC3 are aging, and they are far too critical to be left to chance. We need to make sure that this system is secure and that it is resilient, and we need the best acquisitions approach to it to make sure that we can get this done on time. And I hope we can continue to work together on that.

General Hyten: Yes, ma’am.

Senator Warren: Thank you, General.
Thank you, Mr. Chairman.

Senator Inhofe: Thank you, Senator Warren.

Senator Tillis?

Senator Tillis: Thank you, Mr. Chairman.

General, thank you for being here and for your decades of service and dedication.

One question I would like to start with -- it was maybe an NDAA or two ago that we had a discussion about retiring some of the outdated weapons in our arsenal. How are we doing with that, and is there anything more that we need to do for some of the outdated weapon systems, some that are just either outmoded or potentially dangerous?

General Hyten: So the stockpile -- you are talking about the nuclear weapons here. The nuclear stockpile is secure. But as you said, a few years ago, we started looking at some of the old weapons, and slowly and surely started removing those from the stockpile. In order to get to what we have actually done, we have to go to a classified forum.

But I think that is a smart thing to do because we need to make sure that the stockpile is there for two reasons: to support the fielded forces that we have but to also support a potential violation of the New START treaty or a breakout of that treaty so that we have the ability to go forth. I mean the Minuteman missiles today, for example,
only have one warhead on top of each of the missiles that we have deployed but has ability to put three on top. We need to have those extra weapons in case there is a problem with our adversaries in Russia or China that we need those capabilities. So we have to make sure we maintain the stockpile at the right level, but we should not maintain anything greater than that. So we have been making good progress on that.

Senator Tillis: The 2-year spending bill. How is that affecting -- what kind of time horizon do we really need for you? You have got some long-term execution horizons for your work. The 2-year spending bill helps, but can you tell me specifically in an open setting how that has been helpful to your command?

General Hyten: We do not have the bill yet. That is the biggest concern I have. But assuming that we do, what we will do for the first time is we will have stability for 18 months, and stability is the most important thing. You know, all the things we --

Senator Tillis: 18 months seems like a long time around here, but it is amazing that you consider that positive. But we all know that is not enough time for your line of business.

General Hyten: The most important thing is a budget is a budget on the first of every year. That is the most
important thing. Whether that budget comes through a 2-year
budget or an 18-month, but having a budget on the first of
the year. And when I look back at the history and the folks
that used to go fast, the Shrevers, the Rickovers, the
biggest thing -- they always started with a budget on the
first of the year, and because of that, they had the ability
to make decisions and flex accordingly. And when you do
not, not only do you not go fast but you actually waste huge
amounts of money. Both of those things bug me.

Senator Tillis: So is it not fair to say -- I know you
do not want to give Congress advice, but if we come up short
on these spending decisions, then some of the dates that you
have talked about and some of the capabilities that will
come on line will also shift to the right?

General Hyten: And since I have almost no margin in
some of those programs, that scares the ever-living heck out
of me.

Senator Tillis: On the INF with Russia, the ideal
world would be that Russia is actually complying. But if
they do not, at what point -- is there a sufficient level of
compliance where, even though they are cheating in certain
areas, it is worth having, or at what point do we have to
say we have got to take the handcuffs off?

General Hyten: Well, you have seen in the budget for
fiscal year 2019, we have proposed starting research and
development on the ground-launched cruise missile. Research and development is not in violation of the treaty, but testing and deployment of that capability would be. But nonetheless, we have said it does not look like they are going to come back in compliance, and we are going to start down that path.

President Putin yesterday said he did not want an arms race. Of course, on the 1st of March, he showed nuking Florida. So I am not sure exactly what the message is there, but I can tell you that if we have to build intermediate-range missiles to respond to the threat, I have no doubt that this country knows how to do it. We have done it before. We can do it again. And we proposed starting the research and development in 2019 to start down that path.

Senator Tillis: Do you agree that if we do not take that threat seriously, that some have testified before the committee they put us in a position of -- I think the phrase was used -- we could be in a position of either surrender or suicide?

General Hyten: That is the Kissinger quote, and I agree with that. I think we need a low-yield nuclear weapon, very small numbers. I can tell you how many we need in a classified session. It is not many. But I think we need that to deter our adversaries to make sure we do not
get into that point where the only decision for the
President is suicide or surrender.

Senator Tillis: Well, thank you, General. And I for
one will be doing everything I can to make sure that we
provide you funding so that you can do your job the way I
know you can do it. Thank you.

General Hyten: Thank you, Senator.
Senator Inhofe: Thank you, Senator Tillis.
Senator Peters?
Senator Peters: Thank you, Mr. Chairman.
And thank you, General Hyten, for being here today and
for your testimony. And as always, thank you for your
service as well.

We have heard from several members here today questions
related to the low-yield submarine-launched ballistic
missile, as well as the nuclear-capable sea-launched cruise
missile. So my question relates to the discrimination issue
that some people have raised, that with these particular
capabilities, an adversary may not be able to identify that
a low-yield SLBM is actually a low-yield weapon that has
been fired and it could possibly trigger escalation thinking
something more is coming at them.

In fiscal year 2007, the Navy considered a conventional
Trident modification where Trident submarines would carry
conventional warheads, as well as nuclear warheads. And at
the time, Congress rejected funding for that modification. Former Ted Stevens, a former Senator here, said -- and I quote -- a country that picks up or identifies a launch might legitimately worry whether the weapon carries a nuclear or conventional payload. This could be a provocative action if taken, which was part of his comments in rejecting that idea.

So my question to you is, with a low-yield warhead, is the discrimination problem not still there? Is it more dangerous? What should we do about that?

General Hyten: So there are a million ways to go down that. It is a very complicated answer. I will try to be brief.

The first thing is that from detection to creation of the explosion is less than 30 minutes. It is a very short period of time. If somebody does detect that launch, they will see a single missile or maybe two missiles coming. They will realize it is not an existential threat to their country and therefore they do not have to respond with an existential threat. That is what I would recommend if I saw that coming against the United States.

But I think the first thing you have to realize is that, first of all, it is a deterrence weapon. The first use of that weapon is to make sure that nobody use that kind of weapon against us.
The second piece is that if we do have to respond, we want to respond in kind and not further escalate the conflict out of control. And so an adversary, Russia in this case, will see a weapon coming perhaps -- I can talk about that in a classified forum as well. They will see it coming, but they do not have to respond right now and they will not have time to respond because they will not want to commit suicide.

So all of those pieces, when you look at all the pieces coming together, actually if you are talking about a rational actor, will not be an issue in terms of it. So deterrence weapon first and then a response weapon like in kind to keep the conflict from escalating worse. It actually makes it harder for an adversary to use the weapon in the first place, and if it does use it, it allows you to respond appropriately.

Senator Peters: The key is a rational actor.

General Hyten: The key is a rational actor. A rational actor is the basis of all deterrent policy.

Senator Peters: Right.

There have also been a number of questions related to NC3 systems that you have answered. My question is about the priorities. Where does modernizing NC3 fit in with the modernization efforts of our broader nuclear enterprise? It seems to me that it is essential that we have secure and
reliable command and control in place prior to new weapons, but how would you balance those priorities?

General Hyten: So the way I have talked about it, it used to be the big four. The big four were bomber, ICBM, cruise missile, submarine. It is now the big six, bomber, ICBM, cruise missile, submarine, plus NC3, plus nuclear weapons. Those six elements have to come together for our nuclear infrastructure and for our nuclear deterrent to continue to be viable in the future. All six of those have to come together in the 2030 time frame for the future. They all come together today. We are fully ready today, but to make sure it comes together in the future, we have to be working all six.

Senator Peters: Simultaneously.

General Hyten: Simultaneously.

Senator Peters: Earlier you testified that the sea-launched cruise missile is not a bargaining chip. But last month, Secretary Mattis testified at the House Armed Services Committee that the submarine-launched cruise missile will -- I quote him -- give our negotiators something with which to negotiate. Could you clarify that for us, please?

General Hyten: Absolutely. I think the Secretary said it exactly right. I do not like calling anything a bargaining chip. That capability is against the threat.
However, that capability also gives our negotiators something to talk about. If you do not have something to talk about, it is very hard to sit down and negotiate. But it is not a bargaining chip because it is to counter the threat. I think the only thing he did not like and I do not like is using the term, “bargaining chip.” But it does give our negotiators things to work with, which is a good thing.

Senator Peters: Thank you, General.

Senator Inhofe: Thank you.

Senator Scott?

Senator Scott: Thank you, Mr. Chairman.

Good morning, General. Thank you for your service to the country as well.

General Hyten: Thank you, sir.

Senator Scott: Russia’s strategy to escalate to dominate is something this committee has heard about over the last 3 weeks several time. Senator Fischer mentioned it this morning. General Scaparrotti talked about it in my office when we met a few weeks ago as well. And to me, it is chilling to think that Vladimir Putin sees the preemptive opportunity as a real one and a way to cement the gains that he is making as he tries to grab more territory and frankly intimidate as many of his neighbors. Eastern Ukraine comes to mind as does the possibility of Russia seeking to build a land bridge through Lithuania to its enclave Kaliningrad.
I am confident the administration will use all available resources, whether it is diplomatic, military, and economic means, to counter such a strategy if we find ourselves or our allies in need of assistance.

What we have learned, though, is that Russia truly respects strength. I am interested in what kind of strength we should have to put Russians’ ambitions in check, and that being the recently completed Nuclear Posture Review proposes returning two capabilities you have already talked about with Senator Peters, both the sea-launched ballistic missile, as well as the cruise missile.

My question for you is do you have all that you need in order for us to develop a complete low-yield nuclear program for missiles?

General Hyten: So, first of all, as the Commander of U.S. Strategic Command, I have everything I need today to deter Russia from doing anything against the United States of America. We are fully ready against any threat that exists today, without a doubt.

Senator Scott: Very good.

General Hyten: What my concern is will that be the case for the commander after commander after commander after me as we go down looking in the future. And in that case, we have a lot of work to do in order to make sure that those capabilities come on line. We believe that in order to
deter Russia from using nuclear weapons on the battlefield, we should deploy a low-yield nuclear weapon on our ballistic missile submarines. We believe, to respond to a number of threats both in Russia and China, that we should have a sea-launched cruise missile capability in order to respond to that. We know how to do all of that stuff. It is not new. It is work that we have done before both in the Department of Defense and the Department of Energy. We know exactly how to do it. We just have to go do that work.

But the most important thing -- and I think Senator Reed said it earlier. The most important thing is the continuing modernization of the triad because that is the foundation of our nation’s defense, and that is the strength that will continue to deter Russia into the out-years.

Senator Scott: As we look at the potential of those who succeed you or come after you, is congressional authorization as it relates to low-yield nuclear weapons essential or not necessary?

General Hyten: That is really a question for lawyers not for a combatant commander because it is so important to me I talk to lawyers. And they have told me that congressional authorization is required. Therefore, the Nuclear Weapons Council and I have talked to the Office of Management and Budget. The Department of Energy is working with them. I think they will have an approach to come look
for authorization to begin that right away so we can start
down that path. It is already in our 2019 budget
submission. It was not in the 2019 Department of Energy
budget submission. That is the Department of Energy piece
that will require authorization, and I think that will come
in a fairly timely way.

Senator Scott: Senator Tillis mentioned it earlier and
you commented on it very clearly that the continuing
resolutions that have presented real hurdles for our
military are measurable in real dollars. I met with the
Secretary of the Navy, and he said that over the last
several CRs, it has cost the Navy in quantifiable dollars
about $9 billion. That to me seems astounding that as tight
as things have been -- and frankly, we are hopeful for the
$165 billion that we are looking for to being deployed to
help our men and women in uniform. The fact of the matter
is that short-term budgeting has got to be an obstacle that
is preventable, number one, and number two, a major source
of angst for folks in your position.

General Hyten: So I worry about it for a number of
reasons. I cannot even describe the impact on morale to the
workforce because when it happens, the message that is sent
-- I know it is not intentional because I talk to each and
every Member of Congress, and they all respect the military.
But the message that is sent is they do not care, is that
the Congress does not care, the nation does not care when they do not get a budget. When the civilians employees have to sign a piece of paper that says, yep, I will go home, I will do no work, it is so deflating to the workforce that it is hard to describe what the impact of that is. And then the inefficiencies that we put into the overall conduct of the B-21 program, any new program that comes up that has a funding increase required that we cannot do, we incorporate all kinds of inefficiencies into that process.

And then I still do not have a problem today conducting my mission, but I really worry about the long-term impact for continuing to do that. And I know that if we do not get routine budgets, that the schedules now that deliver just in time will not deliver in time because we will not have an efficient program delivering them.

So I worry about that in a lot of ways. I know each of the members here do, but as a body, it is so essential that the Congress come together and pass a defense appropriations bill.

Senator Scott: Thank you. Certainty and predictability are absolutely essential for the success of our military.

Senator Inhofe: Thank you, Senator Scott.

Senator Donnelly?
Senator Donnelly: Thank you, Mr. Chairman.

Thank you, General, for being here.

In your written testimony, General, you highlight the need to prioritize and accelerate development of hypersonic capabilities, and I could not agree more with you. Is the U.S. leading the way in development of hypersonic glide vehicles or are we behind the curve relative to Russia and China?

General Hyten: We are ahead in some areas, behind in other areas. So as a whole, I would say it is a competition, and it is a competition I believe that we should have a goal of winning that competition, not tying, not losing, but winning the competition. So that means the areas we are behind in -- and I can talk about those in a classified setting -- the areas they are ahead in we should accelerate further. We need to make sure that that becomes a priority for our nation to understand what that is, and then we have to figure out how to respond to it. And the first way to respond to it is to be able to see the threat, which right now is challenging. So we have to build capabilities to see what the threat is as well.

Senator Donnelly: Thank you.

In terms of that competition, as you look at Russia and China, is it that as we look forward, are we moving further ahead or are they closing in on us in terms of capabilities?
General Hyten: They are closing in. I think we are still ahead. We are ahead significantly on the conventional side. I think we have stability with Russia on the nuclear side. We have an advantage with China on the nuclear side. But they are gaining ground quickly, especially when you look at space and cyber.

Senator Donnelly: The Navy successfully demonstrated a conventional prompt strike missile last year that could become a sea-based capability in the future. What are the next steps for the development of a sea-based CPS capability?

General Hyten: The next step -- you have seen it in the budget. The Navy has been given the program now. The Navy has to decide who is going to lead the program. So there is a joint task force underway involving the Navy, the Joint Staff, my command to look at the future of that program and to define it in 2019 so that we can execute the budget that we have put together. That work will be underway this summer and we will report out. Admiral Richardson, the CNO, is the lead on that. I talked to him about it the other day. He is committed to make sure that that comes across right because STRATCOM and other combatant commands have a valid need for that capability.

Senator Donnelly: General, we have a new bomber, a new air-launched cruise missile, the life extension of our
current ICBMs, a new ICBM, a new SSBN, warhead life extensions in our nuclear command and control systems. The Nuclear Posture Review adds to this potentially another warhead modification, a new submarine-launched cruise missile, any necessary modifications to the subs carrying the SLCM, and any warhead modifications necessary to arm it.

Can you give us a list from first to last of how you rank these because our concern is we do not have a budget that can accomplish even the portion that we all see as absolutely essential? And so we know there are things we need to do, and I was wondering if you have a list of how you put these in place.

General Hyten: I do not have a list, Senator.

Senator Donnelly: Is it that they are all critical?

General Hyten: They are all critical. The most critical is the modernization of the triad, the big six that I talked about with Senator Peters a while ago. That is the most important piece of it. But everything in the Nuclear Posture Review that we talk about, everything that is in the budget is in response to a threat. So I cannot sit in front of the Senate, I cannot sit in front of Congress, I cannot sit in front of the President and say, yes, sir, because of that threat, we do not need this capability because the threat exists.

The only way I can change my recommendations to you is
if we can change the threat, and I hope some day that threat changes. I hope it changes in Russia, China, North Korea, Iran. I hope those threats change, but if they do not change, I will sit in front of you next year and advocate for those capabilities because they are all in response to an existing threat to this nation.

Senator Donnelly: In light of how critical all of those are and the budget challenges that we have as well, now more than ever we need to be sharing information, services, and parts across the services to control cost and risk in this undertaking. Can I secure your commitment to find commonality between the services and industry to try to reduce that cost and risk, that we are not reinventing the wheel in effect?

General Hyten: So I am a combatant commander. So I need the capability. However, I am also a taxpayer. So I look for any way we can come up with commonality. And I think there are ways to do that. But I will also point out that we have to be careful not create single point failures in the nuclear enterprise. So if we have everything common on the ICBM side and the SLBM side, that is actually not a good thing because now if one thing fails, we have lost two legs of the triad. So we have to be careful as we walk through that.

But I am working with Strategic Systems Program and
Admiral Benedict and Admiral Richardson to try to figure out with the Air Force where elements of commonality should be. And we have an effort going on inside the Nuclear Weapons Council to define the strategy for modernization in the future so we understand what those pieces are.

Senator Donnelly: General, thank you for your service.

Thank you, Mr. Chairman.

Senator Inhofe: Thank you, Senator Donnelly.

Senator Kaine?

Senator Kaine: Thank you, Mr. Chair.

Thank you, General Hyten. I appreciate your being here today and your great service.

I was looking in your written testimony because I saw a phrase that interested me, and now I cannot find it.

General Hyten: I am sure it was brilliant.

[Laughter.]

Senator Kaine: It was brilliant. It said there is no cyber war, there is no space war, there is just war.

General Hyten: That is correct. It is one of the few things I get frustrated about is when I get a question how are you going to fight and win a war in space. How are you going to fight and win a war in cyberspace? It occurred to me a couple of years ago there is no such thing. There is just war. In war, there may be an element of it that extends into space. There maybe an element that extends --
but war is against an adversary. And so if you have to deal with the adversary and if we get attacked in space, for example, is the United States’ response going to be a response in kind in space? In many cases, that might be the exact wrong response. We may want to respond in another domain.

Senator Kaine: But we ought to respond.

General Hyten: But we ought to respond, but it should be focused on the adversary and what the adversary holds dear. And if we hold space dear, maybe we will respond in some way that holds something the adversary holds dear.

There is just war. There is just conflict.

Senator Kaine: General, on page 3, you go over in your testimony global security environment, and you have this phrase in your paragraph about Russia. In June 2017, as part of an effort to destabilize Ukraine, the Russian military launched the most destructive and costly ever cyber attack in history. The effects of this attack spread globally and included devastating damage to U.S. businesses.

Is that war?

General Hyten: I believe it is. I believe that war extends into cyberspace. I believe that our adversaries have figured out that that is part of the structure. War is against a nation state, and you attack the thing the nation state holds dear. And certainly I would hope that everybody
in America holds our economic structure dear and holds our
ability to live comfortably dear, holds our power grids
dear, all those kind of things that could be attacked
through cyberspace.

Senator Kaine: Should we hold our election systems as
dear as we hold our economic capacity?

General Hyten: I believe that any attack against our
nation should be considered an attack that we have to
respond to.

Senator Kaine: Including the Russian attack of 2016
against the election.

General Hyten: I actually have talked to Admiral
Rogers. I understand I believe it was. But I do not know
exactly the relationship inside Russia about how that
happened. All those kind of pieces are still to be worked.

Senator Kaine: If it was attributed to the Russian
Government rather than just rogue elements, is it an act of
war? We are not talking about cyber war, space war is an
act of war.

General Hyten: So it is the job of the United States
Congress to declare war.

Senator Kaine: What if somebody takes action against
us? We have not declared war on Russia. We had not in
2016. But when they took that action against the Ukraine,
which you said was an act of war -- I just asked you about
that -- because it effected the attack of a sovereign
nation, on a sovereign nation, how about -- I agree we had
not declared war on Russia, but was Russia’s effort to
undermine the American electoral system, if it can be shown
that it was with governmental imprimatur rather than rogue
elements, would that be an act of war?

General Hyten: So it would be an act of war by
definition, but would we declare war? I would think not. I
would think, however, that the United States would want to
respond in some way to an attack on our nation.

Senator Kaine: So it would be an act of war by the
Russians against us. Obviously, the administration,
Congress has the ability to decide what to do. I think that
is important.

We had a hearing with Cyber Command, a very strong
hearing with Admiral Rogers, a couple weeks back, and we
were grappling with this. One of the worries that I think
we have with a broad portfolio not only in Armed Services
but we serve on other committees -- we are dealing with the
American election system. We are dealing with power grid.
We are dealing with all kinds of things -- is how do we
protect the country. Admiral Rogers said, well, the
protection of the election system really is more about
States run elections. And Senator McCaskill said, you
cannot expect the Secretary of State of Missouri to go head
to head against the nation state of Russia if they want to
attack the American election.

So we are depending upon our defense, DHS, and others
to protect us, but we also have to be clear because if we
are unclear what it is, then we will likely be unclear what
our response should be.

General Hyten: I think that is the challenge we have
in cyberspace today. So I have given you my best military
advice, my personal opinion. But as a nation, we have not
made that decision yet.

Senator Kaine: Well, I would just say you call it out
pretty clearly about what an attack on Ukraine is. I looked
in that paragraph to see any reference to Russian attacks
directly against the United States, and I did not see any.
The one I saw was an attack against the Ukraine in June 2017
that affected American businesses. When I asked you about
it, you said you thought that kind of attack of nation
against nation vis-a-vis Ukraine was an act of war. And I
agree. We have to decide how seriously we will treat it.

On our side there has been some ambiguity about it, and
I will say on the side of the last administration and this
administration, there is real ambiguity. I do not know of a
mayor or a governor who believes that the Federal Government
is really going to have their back to protect their
electoral system in 2018. They have not seen the signal
sent that we are going to have their back. And I think it something we should send.

Mr. Chair, I am over my time. Thank you.

Senator Kaine: Thank you, Senator Kaine.

Senator Cruz?

Senator Cruz: Thank you, Mr. Chairman.

General, welcome. Thank you for your service. Good to see you again.

In your written testimony, you stated that, quote, we cannot be successful in this endeavor by investing solely in active missile defense capabilities. We must strengthen and integrate all pillars of missile defense, including the capability to defeat adversary missiles before they launch.

Building on this point, as you know, currently America’s missile defense systems are limited to ones that intercept missiles during the mid-course when the missile is coasting in outer space and in the terminal phase, once it has entered back into the atmosphere. But the Missile Defense Agency has noted, quote, intercepting a missile in its boost phase is the ideal solution for a ballistic missile defense since destroying a missile during this phase of its flight precludes the deployments of any countermeasures and also prevents the missile warhead from attaining the velocity necessary to reach its intended target.
As you know, the greatest challenge in targeting during boost phase is that a missile is only in boost phase for a very few short minutes at the beginning of the flight. This requires sensors that are able to quickly detect a missile launch and relay targeting information. A study conducted by the Hudson Institute and a senior review group comprised of two former Missile Defense Agency directors, two former NORTHCOM commanders, the former Under Secretary of Defense for Policy, among others stated that, quote, an SBI capability would dramatically augment U.S. terrestrially and sea-based defensive capabilities, reduce the demand on current systems, and provide the United States with the optimal vantage point for destroying enemy missiles regardless of their launch or target location, whether on land, at sea, in the air, or in space.

Given the metastasizing nuclear threat from North Korea, given Iran’s relentless pursuit of nuclear weapons, the growing development of anti-access/area denial capabilities in the Persian Gulf and the South China Sea, and great power competition in space, the case for urgently pursuing a space-based intercept capability has never been stronger.

Recent investments from China and Russia in missile technology like hypersonic glide vehicles that circumvent our current missile defense architecture further underscore
the potential value of a space-based layer for the boost
phase.

General, understanding that the MDR is forthcoming, can
you share some of your views on the path forward for
developing the architecture necessary to make boost-phase
defense a reality here?

General Hyten: So as the Commander of STRATCOM, I have
been on the record as supporting the requirement for boost-
phase intercept for the entire time I have been in command,
and I have supported that for many years now. I would love
to drop a missile back on somebody’s head that launched it.
It is really that simple. I think there are multiple ways
to do that.

I think the most important piece of the puzzle that you
described is the sensor architecture that you need in order
to target it. I am a huge supporter of building space-based
sensor elements to be able to target against all of those
capabilities, as well as hypersonic capabilities, other
capabilities in the boost phase to get after a number of
those issues.

The actual technical solution I am agnostic for. In my
past, I have worked space-based interceptor solutions and
spaced-based sensor solutions. I am convinced that space-
based sensors are absolutely required. I am not convinced
at this time that the space-based interceptor is required,
but the requirement is there. I will advocate for that requirement. I think there are technologies that we can talk about in a classified session that can meet that. I think space is an element of that overall architecture, but the most important thing is the requirement for boost phase and left-of-launch. And I think the missile defense review will talk about that in more detail.

Senator Cruz: What specifically is required? What is needed to get this accomplished, to make boost-phase intercept a reality?

General Hyten: So I think that the Department has to decide to integrate the number of different programs that are out there. I think the leadership in the Department right now is the perfect leadership to do that. I know Dr. Mike Griffin. I know that he has looked at that technology in the past. He has only been in office now a few weeks, but that has been important to him for a long time. I think Secretary Lord, Secretary Shanahan, I think the Secretary of Defense support the boost-phase construct.

So I think what we are going to have to do this year is we are going to have to align all of the elements that are out there and make sure we realize it is not just the interceptor -- it is coming up with the entire approach to dealing with boost-phase intercept -- and get after that. And like I said the missile defense review will get to it in
Senator Cruz: So what can or should this committee do?

General Hyten: I think the key is look at the missile defense review. The missile defense review will describe the approach of the nation and the Department on how to do that. And then we will have a discussion about, okay, what is good, what is bad, where do you disagree, and we will have that discussion as we go through the year. But we really need the missile defense review to start that discussion.

Senator Cruz: Very good. Thank you, General.

Senator Inhofe: Thank you, Senator Cruz.

Senator Blumenthal?

Senator Blumenthal: Thanks, Mr. Chairman.

Talking about the boost phase intercept, you think this technology is doable and feasible and should be pursued.

General Hyten: Senator, I think the technology is actually pretty straightforward. I think the policy discussions are much more complicated because in order to attack a missile in the boost phase, you have to commit to dropping something on adversary territory. Now, if we are in the middle of a war or the middle of a conflict, that is really not a complicated decision. But if we are not and we want to make that decision, that is a very complicated policy discussion. And we have not had a lot of discussion
about the policy impacts of making a decision like that.
But from a technical perspective, I think the technology is
there.

Senator Blumenthal: Thank you, General.

I have a question about helicopters. This issue is one
that you and I have discussed.

General Hyten: Yes, sir.

Senator Blumenthal: In fact a year ago, as you may
recall, I asked you about your frustrations with the Huey
replacement program, and you said -- and I am quoting -- of
all the things in my portfolio, I cannot even describe how
upset I get about the helicopter replacement program. It is
a helicopter, for gosh sakes. We ought to be able to go out
and buy a helicopter and put it in the hands of the people
that need it, and we should be able to do that quickly. We
have been building combat helicopters for a long time in
this country. I do not understand why the heck it is so
hard to buy the helicopter.

Do you still have the same frustrations with the Air
Force’s continued delays in fielding a replacement
helicopter?

General Hyten: I had a feeling somebody was going to
quote me on that today, and I had a feeling it was going to
be you.

So I have been working to try to get a helicopter in
the hands of the folks in the missile fields for over a
decade. That is where my frustration comes from. And so
that frustration will not go away until the helicopter is in
the hands of the people.

But the good news is the leadership, Dr. Roper, Dr.
Griffin, Ms. Lord, Secretary Shanahan -- they have taken it
very seriously. We are in the middle of a source selection
now. I hope contractor war is not imminent. There is a
protest going on inside the source selection which limits
how much I can talk about it. But the leadership of the Air
Force, the leadership of the Department has taken it very
seriously, and we are in the middle of a source selection
now which is a good thing.

Senator Blumenthal: Can you give us a date when you
think it will be done?

General Hyten: I cannot give you a date because of the
protest right now. That is the piece that is still
frustrating me. I would like to sit in front of you and
give you a date saying here is where it is going to be.

The good news is that my air component commander,
General Robin Rand, has put a number of adjustments into the
Huey force in terms of fuel, in terms of armament, in terms
of arms to allow them to do the job until that helicopter
comes into being. So the operational risk that I was
concerned about significantly last year has really been
eliminated in the near term. But I do not have a date where I can tell you, Senator, and I wish I did.

Senator Blumenthal: But that is still a concern that this aircraft, even with that short-term measure, still is incapable of meeting requirements to protect our ICBM fleet. Correct?

General Hyten: Well, especially the movement of nuclear weapons. That is the key. I can tell you in a classified session what we have done in terms of arming, in terms of fueling to allow us to adequately protect the weapons. And so I am comfortable with that protection system that is in there right now. But the Huey is still ancient and it has got to be replaced. And it has got to be replaced, and the sooner we can replace it, the better.

So I will continue to be demanding of my Air Force to deliver that capability. And I can tell you the Chief, the Secretary, and the acquisition leadership have all committed to getting there as fast as we can. I hope that contract award is soon.

Senator Blumenthal: I am concerned about the triad and American naval superiority. I attended the commissioning of the USS Colorado over the past weekend, a proud moment as all these commissionings and christenings are. And our undersea superiority is more important than ever for all the reasons that you have outlined so well in your testimony.
I am concerned about the ramping up, which I think has to come in the construction of both the Ohio class replacement, the Colombia, and the Virginia class, which requires the defense industrial base to be strong, worker training, and worker skills.

Would you agree that the worker training grants that are provided by the Federal Government play an important role in our national strategic superiority, that industrial base has to be trained, and the Federal Government has a role in funding it?

General Hyten: The shipyards are a critical national asset to America. It is one of our strengths. And that workforce is essential to us being able to build Colombia, to be able to build Virginia. And I think it is the responsibility of all of us, including the Federal Government, to make sure that that workforce, which is a strategic asset, is supported across the board.

Senator Blumenthal: And when people talk about spending on our military security and our military budget, really our national security depends on that defense industrial base, as you just said.

General Hyten: Every worker that is at a shipyard that is working on the Colombia is part of our national security infrastructure.

Senator Blumenthal: Thank you.
Thanks, Mr. Chairman.

Senator Inhofe: Thank you, Senator Blumenthal.

And thank you very much, General Hyten, for your patience and your straightforward answers. We appreciate you very much.

With that, we are adjourned.

[Whereupon, at 11:16 a.m., the hearing was adjourned.]