HEARING
ON
NATIONAL DEFENSE AUTHORIZATION ACT
FOR FISCAL YEAR 2022
AND
OVERSIGHT OF PREVIOUSLY AUTHORIZED
PROGRAMS
BEFORE THE
COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES
ONE HUNDRED SEVENTEENTH CONGRESS
FIRST SESSION
SUBCOMMITTEE ON STRATEGIC FORCES HEARING
ON
FISCAL YEAR 2022 STRATEGIC FORCES
POSTURE HEARING

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OPENING STATEMENT OF HON. JIM COOPER, A REPRESENTATIVE FROM TENNESSEE, CHAIRMAN, SUBCOMMITTEE ON STRATEGIC FORCES

Mr. COOPER. The hearing will come to order.

First, I apologize to the witnesses for the late start.

I would like to thank each one of you for being here today.

We look forward to hearing from the distinguished witnesses, Ms. Melissa Dalton, Acting Assistant Secretary of Defense for Strategy, Plans, and Capabilities; Admiral Charles Richard, Commander of U.S. Strategic Command; and General James Dickinson, Commander of U.S. Space Command.

In view of the shortness of time, I will dispense with an opening statement, but let me just record my worry about the personnel impacts of moving the headquarters to Huntsville, Alabama, and the fact that some of our colleagues in Congress don’t feel the urgency that I feel to recapitalize all three legs of our strategic triad.

Let me turn to the ranking member, Mr. Turner.

[The prepared statement of Mr. Cooper can be found in the Appendix on page 33.]

STATEMENT OF HON. MICHAEL R. TURNER, A REPRESENTATIVE FROM OHIO, RANKING MEMBER, SUBCOMMITTEE ON STRATEGIC FORCES

Mr. TURNER. I am just going to make a few comments.

Thank you, Mr. Chairman, for your statement concerning the triad. I know that our witnesses before us today will be echoing the same sentiment.

As we enter into moving forward with the NDAA [National Defense Authorization Act], it is going to be incredibly important for your testimony today to help us lay a foundation for the work that is necessary in funding the modernization of our nuclear enterprise.

As you know, we have allowed our nuclear deterrent to atrophy. There are those who would like to pursue stall-and-delay alter-
natives. We need your understanding of the importance of the path that we have set in front of us and completing it.

I know that you are going to give us some understanding of what we are seeing with our adversaries. China is more than doubling, according to reports, their nuclear inventory.

We know that Russia has undertaken the exotics with Skyfall, the nuclear-powered cruise missile that is supposed to orbit the Earth; with Poseidon, that is supposed to pop up from the water; and with other hypersonics and other nuclear weapons.

Your testimony of validating the threat, the diminishing nature of our deterrent, and the critical aspect of our pursuing modernization is going to be very important today, and I look forward to that testimony.

Thank you, Mr. Chairman.

Mr. COOPER. Thank you, Mr. Turner.

I ask unanimous consent that my and your opening statement, written statement, be inserted for the record.

And now we will hear from our witnesses.

Ms. Dalton.

STATEMENT OF MELISSA G. DALTON, ACTING ASSISTANT SECRETARY OF DEFENSE FOR STRATEGY, PLANS, AND CAPABILITIES, U.S. DEPARTMENT OF DEFENSE

Ms. DALTON. Chairman Cooper, Ranking Member Turner, and distinguished members of the committee, thank you for the opportunity to testify before you today.

May I request permission to submit my written statement for the record and provide brief opening remarks?

Mr. COOPER. Without objection, so ordered.

Ms. DALTON. Thank you.

Today, the United States faces a complex global threat environment characterized by increasingly sophisticated and militarily capable strategic competitors, destabilizing regional dynamics, and accelerating technological changes that pose significant dangers.

The U.S. capabilities that we will discuss today offer critical advantages that are essential to deterring adversaries so that we can protect the American people, our homeland, and our allies and partners.

As Secretary Austin has stated, nuclear deterrence is the Department’s highest priority mission. Our nuclear forces remain essential to ensure no adversary believes it can ever employ nuclear weapons for any reason, under any circumstances, without risking devastating consequences.

As the Department undergoes a set of strategic reviews that will include its nuclear policy and posture, DOD [Department of Defense] is committed to maintaining a safe, secure, survivable, and effective nuclear deterrent that accounts for the challenges posed by Russia, China, North Korea, and Iran.

These reviews will account for adversary nuclear forces and doctrine, possible strategy posture and policy adjustments, program execution risk, arms control opportunities, and strategic stability and nuclear risk reduction, all with the goal of maintaining a strong and stable deterrent. Importantly, the views of allies will inform these reviews.
Secretary Austin has stated that we must sustain and modernize the nuclear triad to maintain credible deterrence in the face of today’s threats. The President’s FY [fiscal year] 2022 discretionary request supports ongoing nuclear modernization programs while ensuring that these efforts are sustainable.

As missile technology matures and proliferates, the threat to the U.S., our allies, partners, and deployed forces is steadily growing, both from intercontinental and regional missile developments in North Korea, Iran, China, and Russia. We will review our missile defense policies, strategies, and capabilities to ensure they align with our broader National Defense Strategy to protect the Nation and our interests abroad from missile threats.

Recently, the Department initiated the development of the Next Generation Interceptor, which will improve the overall reliability and performance of the Ground-Based Midcourse Defense system.

The Department will continue to bring a more integrated approach to air and missile defense that not only assists with the defense of our forces and allies against multiple types of ballistic missiles, but also addresses the evolving spectrum of airborne and missile threats that seek to inhibit U.S. operations.

It will be critical to invest in the right missile defense technologies in a cost-effective and responsible manner to retain our regional and strategic edge long into the future.

While space-based capabilities are an inextricable component of the daily workings of modern life, space is also an arena of strategic competition. The United States remains the world’s leader in space, but we must recognize the growing role that space plays in enabling China’s increasingly assertive challenges to the international system and in Russia’s disruptive role on the world stage.

The Department is grateful for this committee’s strong bipartisan support for initiating and sustaining important organizational reforms and ensuring we have the necessary means to realize our Nation’s strategic goals in space.

For the United States, hypersonic strike systems are an emerging conventional capability that is central to the broader goal of modernizing the joint force to ensure it can deter and, if necessary, defeat competitors in a high-end conflict.

China and Russia are making concerted efforts to develop capabilities that are increasingly eroding traditional U.S. warfighting and military technological advantages, including hypersonic weapon systems. Such systems, including those that are nuclear armed, are top national priority efforts for both states.

In response, the Department has prioritized hypersonic strike weapons, all of which are strictly non-nuclear, to address these challenges. These capabilities offer operational advantages by allowing us the ability to destroy critical enemy infrastructure and anti-access systems, enhancing the U.S. capability to create strategic effects without crossing the nuclear threshold.

We are ensuring proper oversight as the Department develops the concept of operations that will guide this capability’s use. The Department is committed to continued transparency and dialogue with Congress on strategic stability and policy questions relating to hypersonic strike systems.
Thank you again for the opportunity to testify. I look forward to your questions.

[The prepared statement of Ms. Dalton can be found in the Appendix on page 35.]

Mr. COOPER. Thank you.

Before we hear from Admiral Richard, I am required to read this boilerplate about web access, because we have several members attending remotely.

Members who are joining remotely must be visible on screen for the purposes of identity verification, establishing and maintaining a quorum, participating in the proceeding, and voting.

Those members must continue to use the software platform’s video function while in attendance unless they experience connectivity issues or other technical problems that render them unable to participate on camera.

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Members may use the software platform’s chat feature to communicate with staff regarding technical or logistical support issues only.

Finally, I have designated a committee staff member to, if necessary, mute unrecognized members’ microphones to cancel any inadvertent background noise that may disrupt the proceeding.

Sorry for that boilerplate.

Now, Admiral Richard.

STATEMENT OF ADM CHARLES A. RICHARD, USN, COMMANDER, UNITED STATES STRATEGIC COMMAND

Admiral RICHARD. Chairman Cooper, Ranking Member Turner, distinguished committee members, good afternoon. I am pleased to testify with General Dickinson and Ms. Dalton, whose leadership and strategic insights benefit my command.

I thank the President, Secretary of Defense Austin, Chairman of the Joint Chiefs of Staff Milley for their leadership and their support to the mission of strategic deterrence.

I assure you the command is committed to the priorities set forth by the Secretary to defend the Nation, care for our people, and succeed through teamwork. And I remind the command it is our diversity, resilience, and professionalism that sets us apart and makes us even stronger. It is a privilege to represent them here today.
I thank the committee for its enduring support to our national defense and active engagement and interest in the command’s missions.

Strategic deterrence enables every U.S. military operation around the world. Every operational plan and every other capability we possess rests on an assumption that strategic deterrence—and, in particular, nuclear deterrence—is holding. If it fails, nothing else in the Department works as planned.

I submit, as a Nation, until recently, we have not considered the implications of engaging in competition through crisis and possible direct armed conflict with a nuclear-capable adversary in nearly three decades. For the first time in our Nation’s history, we are about to face two nuclear-capable strategic peer adversaries at the same time, both of whom must be deterred differently.

And in that context, I submit, China must no longer be considered a “lesser included case” in this context. Their remarkable expansion of nuclear and strategic capabilities are evidence of their drive to be a nuclear peer by the end of the decade.

This is the strategic complement to the conventional capability growth reported by INDOPACOM [United States Indo-Pacific Command]. They are at some kind of an inflection point and are rapidly expanding their strategic capabilities. They are well ahead of the pace to double their stockpile by the end of the decade, and the size of a nation’s stockpile is a very crude measure of its strategic capabilities.

In order to fully assess the China threat, it is necessary to consider the capability, range, and accuracy of the associated delivery systems, their command and control, readiness, posture, doctrine, training.

They are rapidly expanding road-mobile intercontinental ballistic missile capability, rapidly expanding solid fuel silo-based intercontinental ballistic missiles, deploying a strategic bomber, and they now possess six second-generation Jin-class ballistic missile submarines, making them capable of continuous at-sea deterrent patrols. They are developing dedicated nuclear command and control capability, to include launch under warning and launch under attack.

By these measures, China is capable of executing any plausible nuclear employment strategy regionally now, and soon will be able to do so at intercontinental ranges.

For China, it is important to look at what they do, not what they say, and where they are going, not where they are.

I have no choice but to view China as a significant strategic nuclear threat and share Secretary Austin’s assessment that China is the pacing threat for the Nation and DOD at large.

Russia, however, remains the pacing strategic nuclear threat. They have aggressively engaged in advanced conventional and nuclear capability development and modernization efforts and are roughly 80 percent complete, while we are at zero.

It is easier to describe what they are not modernizing—pretty much nothing—than what they are—which is pretty much everything—including several never before seen capabilities and several thousand non-New START [Strategic Arms Reduction] Treaty accountable systems.
Nuclear-armed ICBM [intercontinental ballistic missile] hypersonic glide vehicle; nuclear-powered, nuclear-armed underwater vehicle; and Skyfall nuclear-powered and nuclear-armed cruise missile are examples of asymmetric strategies and weapons designed to offset conventional inferiority.

We can no longer assume the risk of a strategic deterrence failure in crisis or conflict will always remain low. The days of power projection in a permissive environment without regard for a possible nuclear response are over.

And bottom line is we don’t have margin. I will be happy to answer more questions about that when we get into this in the rest of the testimony. We simply cannot continue to indefinitely life-extend Cold War leftover systems, platforms, NC3 [nuclear command, control, and communications], and successfully carry out our national strategy.

Of particular concern is the aging nuclear weapons stockpile and supporting infrastructure, and we could reach a point where no amount of money will adequately mitigate the operational risk the Nation will face due to infrastructure and human talent capability losses.

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

[The prepared statement of Admiral Richard can be found in the Appendix on page 46.]

Mr. COOPER. Thank you, Admiral.

Now we will hear from General Dickinson.

STATEMENT OF GEN JAMES H. DICKINSON, USA, COMMANDER, UNITED STATES SPACE COMMAND

General DICKINSON. Good afternoon, ladies and gentlemen. Thank you, Chairman Cooper, Ranking Member Turner, and members of the House Armed Services Committee’s Subcommittee on Strategic Forces for the chance to speak with you today.

I am honored today to join Admiral Richard and Ms. Dalton for this afternoon’s discussion.

In describing the accomplishments of our Nation’s newest combatant command, I am pleased to represent the nearly 18,000 military, civilian, and contractor personnel supporting United States Space Command.

In United States Space Command, our power is our people. Having just finished the command’s celebration of Women’s History Month, we proudly recognize our many female warfighters. Yesterday, in my comments to the Senate Armed Services Committee, I shared examples of three female heroes in my command, and today I would like to take the opportunity to share three additional examples.

Major Kathryn Congdon, who recently transferred into the brand new U.S. Space Force, started as an ICBM crew member, worked next to missile warning at the 6th Space Warning Squadron, and just led our planning efforts for the Global Lightning 2021 Exercise.

Major Elise Fitch-Freeberg, an Army air defense artillery officer, is currently working on one of our most critically assigned missions, global sensor management in our Operations Directorate.
And a third, a young Air Force staff sergeant, Kiara Kastner, brings personal expertise to a command that is still building its warfighting force, and is currently providing outstanding support in the front office of my chief of staff.

And there are countless others. But those are three that I would like to mention today.

Our diverse force will continue balancing combat readiness and preparing for the future. We will provide our people a working environment and culture that allows them to thrive while reaching their full potential.

Our ideals reflect those of our oath to the Constitution of the United States, and we remain committed to providing for the common defense, promoting the general welfare, and securing the blessings of liberty for ourselves and our posterity.

Today, I will offer you some insight into our plans for the future, which are aligned with the President’s new Interim National Security Strategic Guidance.

When I took command of U.S. Space Command last August, we were still filling out the structures of a new warfighting combatant command for space. As I outlined in my written statement, we have made tremendous progress since then, to include further development of our two functional component commands and the establishment of all of our service component commands.

These developments have significantly advanced space warfighting capability, all while supporting the joint force with exquisite space capabilities.

While largely focused from the geosynchronous belt to the largest tactical mile on Earth, we are expanding our focus to keep pace with our Nation’s push into the cislunar region, our renewed activity on the Moon, and our future exploration of Mars and beyond.

China’s space enterprise continues to mature rapidly, presenting a pacing challenge. They invest heavily in space, with more than 400 satellites on orbit today, and based on their current launch rate, could have as many as a thousand on orbit by the end of the decade.

China is building military space capabilities rapidly, including sensing and communication systems and numerous anti-satellite weapons. All the while, China continues to maintain their public stance against the weaponization of space.

Similarly concerning, Russia’s published military doctrine calls for employment of weapons to hold U.S. and allied space assets at risk. For example, similar to the Russian space-based weapons test in 2017, Russia again conducted a test of a space-based anti-satellite weapon.

Additionally, the December 2020 test of a direct descent anti-satellite weapon demonstrates that, even as Russia aims to restrict the capabilities of the United States, they clearly have no intention of halting their own ground-based and on-orbit counterspace weapon systems. Currently, Russia has about 200 satellites on orbit and could double that by 2030.

In addition to this activity on the part of our competitors, we are observing exponential growth in the commercialization of space. We currently track a challenging 32,000 objects in space. Nearly 7,000 of those objects are active or retired satellite payloads.
Among the roughly 3,500 active satellites, the three largest single constellations belong to commercial companies: SpaceX’s broadband internet constellation, Planet Labs’ Earth imaging constellation, and Spire Global’s space-to-cloud data analytics constellation.

Overlaying this new global security landscape on the already complex operating environment of space demands a new level of awareness on our part. Given that the President’s Interim National Security Strategic Guidance calls for ensuring the safety, stability, and security of outer space activities, U.S. Space Command is focused on my priority of enhancing existing and developing new space domain awareness capabilities.

Space domain awareness gives us insight into activity throughout the space domain, including potential adversary activities, but perhaps more importantly, into the insights and intent of those potential adversaries as well.

Space domain awareness provides decision-quality information to combatant commanders and the National Command Authority to ensure we can provide viable military options with the appropriate decision space throughout the spectrum of operations, from deterrence to warfighting.

In order to most effectively accomplish our assigned missions, U.S. Space Command has assessed our current capabilities and developed the requirements necessary to expand that capability where needed to meet our mission imperatives. We have passed those requirements along to the services and to the Department of Defense.

Our intent is to build the appropriate space operational architecture designed to achieve full operational capability, backed by a team of warfighters who outthink and outmaneuver our competitors. While engaging in a daily competitive environment, our primary goal remains to deter a conflict that begins in or extends into space.

With the help of this committee and all of Congress, we will achieve that ultimate objective and ensure that the United States and our allies will never have a day without space.

Thank you, and I look forward to your questions.

[The prepared statement of General Dickinson can be found in the Appendix on page 76.]

Mr. COOPER. I thank the witnesses.

We will now begin member questioning, first in open session, which I hope we can conclude before we have to return to votes. I am going to withhold my questions for the classified session.

And I am grateful to the witnesses for being able to stay with us until after votes, when we can resume and hopefully have an entirely classified session then.

I am going to withhold my questions.

Would the ranking member like to ask any?

Mr. TURNER. Thank you, Mr. Chairman.

Mr. Chairman, I want to thank you also for your opening statement of your support for the triad.

Admiral Richard, I greatly appreciate your honesty and the fact of which you speak with such passion about the threats to the United States from our adversaries who have nuclear weapons. You see today that the United States is increasingly putting itself
in a disadvantage with its adversaries that have nuclear capabilities and are increasing those capabilities.

Admiral Richard, unfortunately, there are prior administrations, and even Members of Congress, that wanted you to sit here with the angst and anguish that you have. They mistakenly believed that if they placed you and our nuclear assets at risk, that our adversaries would follow, that a great disarmament around the world would occur.

But the opposite has happened. While we have delayed our modernization, Russia has modernized with what it is called exotics, people are referring as exotics, new nuclear weapons capabilities, and China is definitely increasing its capabilities, perhaps doubling its weapons.

So what we are seeing is that the premise of, if the United States was restrained, that the world would be restrained, is dangerously not true.

Admiral Richard, some people are talking, in addition to restraining the modernization plans that we have in place, of putting in place a no-first-use policy. I believe that you have been quoted before about China's no-first-use policy, that it has holes enough in it enough you could drive a truck through, or perhaps a mobile ICBM through.

Could you please discuss for a minute what your views are of what it would do to the United States and our allies and how it would perhaps not have any effect in deterring our adversaries for the United States to adopt a no-first-use policy?

Admiral Richard. So, Ranking Member, first, I want to offer that that is fundamentally a policy question. I am conscious I am sitting right beside a representative from OSD [Office of the Secretary Defense] Policy, and so what I am about to describe to you is my best military advice.

Mr. Turner. That is what I am looking for.

Admiral Richard. The comment about driving a truck through the no-first-use policy is I simply look at what China's capabilities are and what it enables them to do, and they are very inconsistent with a no-first-use policy and the implied minimum deterrent strategy that follows.

I see a no-first-use policy as degrading the Nation's deterrence. It will remove a level of ambiguity that has deterrence value. That will be mitigated by the fact that the policy likely will not be perceived as credible by the people that it is intended to deter.

This would only apply to about 10 nations or so. Most of the rest are already covered by our negative security assurance, and about half the ones I am describing are our allies.

So it will be no more credible than our current missile defense policy is, that is also not given a lot of credit, and is no different than the no-first-use policy the Soviet Union had or the one that North Korea currently has.

However, some of our allies might find it credible, and I think it will have a negative effect on extended deterrence and assurance.

The Nation can have any policy that it would like. These would be the implications in my mission sets.

Mr. Turner. Thank you.
Ms. Dalton, we have been told and our staff have been told that there is a study that has been undertaken in OSD CAPE [Office of Cost Assessment and Program Evaluation] and OSD Policy concerning the Minuteman III. The Minuteman III has been studied before, and it has been determined that it cannot have life extension, not merely just because of cost, but also because of capabilities.

Admiral Richard was describing the capabilities that our adversaries are reaching to.

So it was not merely just an accounting aspect. It was also a capabilities aspect.

But we have been told that there is a study underway of looking at 200 Minuteman III missiles to maintain the land-based leg of a deterrent while using the remaining missiles to support replacement parts, which of course, again, every time this has been studied it has been ill-advised to look at any extension of the Minuteman III, not just merely for cost, but also for capabilities.

Ms. Dalton, are you aware of this study? Did you approve it? And what is in this study?

Ms. Dalton. Representative Turner, thank you very much for the question and the opportunity to testify today.

I myself have not read that study, but I am happy to follow up with further views on the matter.

More broadly, when it comes to the Minuteman III program, this will certainly be a program that we examine in the course of our upcoming strategic reviews of our nuclear posture.

I share Admiral Richard’s concern in terms of our aging nuclear arsenal and the fact that, as you just noted, sir, that the capability as we get out to the 2030s grows quite worrisome in terms of our ability to deter effectively the range of threat actors that we have discussed here today already.

So as we are looking ahead in our strategic reviews, looking at those threat factors, looking at what our current capabilities can afford us to address them, we will also, of course, be looking at cost and what is the right balance of the mix of programs that may be necessary to have a safe, effective, and secure nuclear deterrent well into the future.

Thank you.

Mr. Turner. Okay. So is the study that you just referenced ongoing, or is that something that has just occurred?

Ms. Dalton. So as most administrations upon taking office will conduct a series of strategic reviews, to include the National Defense Strategy review, which we are——

Mr. Turner. Yeah. I am well aware of that.

Ms. Dalton. Yes.

Mr. Turner. I am asking you solely about the Minuteman III, because this has been exhaustively studied and conclusively determined to be unable to be life-extensioned.

And so I am asking you, are you aware of a different study that has been tasked, other than those that have been completed before?

And do you have an opinion other than what the studies that have been previously concluded, that we need to move forward with a modernization program and not review once again a Minuteman III life extension program?
Ms. DALTON. Representative, thank you for the question. I will have to take that question for the record, because I myself have not seen that particular study.

[The information referred to was not available at the time of printing.]

Mr. TURNER. Okay. If you find that there is a new study going on, we would like it. So take this as our formal request for an understanding of, if it is ongoing, send us the scope, okay, and if it is completed, then please provide it to us.

With respect to no first use, Admiral Richard was giving, I think, a great understanding of what our adversaries would view a no-first-use policy, and certainly the environment that he is operating in where Russia has a use—an escalate to deescalate. We understand the Nuclear Posture Review will be ongoing. Every administration, as you have said, has done one.

But do you have an opinion on no first use, Ms. Dalton?

Ms. DALTON. Representative Turner, thank you for the question.

The question of our declaratory policy is a Presidential-level decision. Our declaratory policy should reflect our strategic objectives, including our extended deterrence commitments to our allies.

In the course of both interagency and Departmental-level strategic reviews that we are about to kick off, we will be assessing the security environment, consulting with our allies to inform these reviews, and to make a determination to inform Presidential decision making on what changes, if any, should be made to our current declaratory policy.

Mr. TURNER. Leonor Tomero reports to you, does she not?

Ms. DALTON. She does.

Mr. TURNER. You are familiar with the article to the Japanese press concerning no-first-use policy and modernization? Did you approve this?

Ms. DALTON. Representative Turner, I am aware of the article, and I have also read the transcript of the interview, which I think more fully captures DASD [Deputy Assistant Secretary of Defense] Tomero’s position, which was not well reflected in the article.

Mr. TURNER. Should she be having a position since you don’t have an NPR [Nuclear Posture] Review completed yet?

Ms. DALTON. She was reflecting the range of elements and aspects of the review that I just walked through in the context of the interview, and we would be happy to share the transcript of the interview with you.

Mr. TURNER. Thank you.

I just want to thank Admiral Richard one more time, because you have been incredibly passionate, both in the House and the Senate, and we really need your help and support as we push forward for modernization.

Mr. Chairman, I yield back.

Mr. COOPER. We have about 20 minutes left before we have to vote. The next four questioners in order are Garamendi, Wilson, Carbajal, and Lamborn.

Mr. Garamendi.

Mr. GARAMENDI. Admiral Richard, is it true that in 2019 your predecessor said that the Minuteman III could be life-extended one more time in testimony to this committee?
Admiral RICHARD. I am not aware that he did or did not say that.

Mr. GARAMENDI. You should be aware, because, in fact, it was said that the Minuteman III could be extended one more time.

In your argument for the GBSD [Ground Based Strategic Deterrent], you assume that the Minuteman—in the issue of cost, it is assumed by the Pentagon, by your organization, that the Minuteman III would be life-extended, and then, following that, the GBSD would go into place, and it too would be extended. The dates are 2075.

That is your argument, is it not? You are assuming that the Minuteman III could be extended as you compare the cost of the two systems to the year 2075?

Admiral RICHARD. Congressman, we as a department have reported several times to Congress, most recently in a comparison of Ground Based Strategic Deterrent/Minuteman III cost estimates back in October 2019, that it is not cost effective to life-extend Minuteman.

The ultimate authority on whether it can be life-extended or not is the Secretary of the Air Force as judged by the Secretary of Defense.

Mr. GARAMENDI. Sir——

Admiral RICHARD. And I will defer to that.

Mr. GARAMENDI. If you will excuse me, sir.

My question was, the assumption in the pricing, the cost differential, assumed that the Minuteman III could be extended. And, in fact, your predecessor to this committee in 2019 said that it could be extended one more time.

That testimony is available, and we can provide it to you.

Admiral RICHARD. Congressman, from an operational standpoint what I would ask is I do not see an operational reason to even attempt to do that.

Mr. GARAMENDI. Okay.

Admiral RICHARD. The Minuteman III is a 1970s-era weapon designed to go against Soviet analog defenses. I need a weapon that will work and make it to the target. And to expect that in the time-frames you are talking about to penetrate potentially advanced Russian and Chinese systems is going to be a challenge.

Mr. GARAMENDI. Sir, we are talking here about the Minuteman III’s viability long-term. Your office delivered to me all of the data about the Minuteman II and the Minuteman III. And in fact, the Minuteman II, poured in 1966, was viable in 2014.

So with regard to the Minuteman II rocket, after all of those years, it was still viable.

The Minuteman III, similarly, there is no evidence in your document that the Minuteman III is not viable, as it is today, nor is there any information that indicates that the Minuteman III cannot be extended one more time.

Now, if that is wrong please——

Admiral RICHARD. Congressman, again, I will defer to the Secretary of Defense. But I will remind you that it is about the entire weapon system——

Mr. GARAMENDI. No, sir.

Admiral RICHARD. It is.
Mr. GARAMENDI. Sir, if you could, please stick to the debate that I am having with you, which is the viability of the Minuteman III. The viability of the Minuteman III to be extended one more time is clearly possible by the documents and the testimony of the Strategic Command. So I want to get that on the record.

Now, don't go off talking to me about the Secretary of Defense. We are talking about the viability of the Minuteman III.

If I am incorrect and it is not possible—not possible—to extend it one more time, then please provide the written documentation to that. That is a fundamental point in the debate that we are having here about the GBSD and the necessity for it.

Secondly, why—or, thirdly—why did the Department of Defense and your organization choose the year 2075 rather than the year 2040 or 2050? What is the rationale for that?

Admiral RICHARD. Congressman, any information provided to you on the life expectancy, cost, or any performance on the Minuteman III or other weapon systems would have been the Department of the Air Force, not STRATCOM [United States Strategic Command]. That is why I say I am not the ultimate authority on that.

I am the operational commander. I set the operational requirement. So I will defer to the Air Force to answer those questions. I can just report what I see. And an example is——

Mr. GARAMENDI. You have reported to us that you cannot—are you reporting to us that you cannot extend the life of the Minuteman III? Is that your report?

Admiral RICHARD. I am reporting that the Air Force has reported it is not cost effective to life-extend the Minuteman III. And from my own personal observation, with deference to the U.S. Air Force, I am not sure it can be life-extended at all.

For example, the command and control system for that dates back to the 1970s. When it started, the word “cyber” hadn’t even been defined.

If you expect me to report back, I am going to get questioned on it in a second, on how I am maintaining the cyber defenses of a command and control system that was designed before the internet, I am not sure that that is possible.

Mr. GARAMENDI. Why are you not sure? It is your business to be sure.

Admiral RICHARD. Exactly, that is why I need a new one.

Mr. GARAMENDI. And a new one was——

Mr. COOPER. The gentleman's time has expired.

Mr. GARAMENDI. When was—excuse me, but you are talking about the command and control system. When was it last updated for the Minuteman III?

Admiral RICHARD. The Minuteman III system is currently being updated in one aspect right now.

Mr. COOPER. The gentleman's time has expired.

Mr. Wilson, who is attending remotely.

Mr. WILSON. Thank you, Chairman Jim Cooper.

And, Admiral Richard, I want to thank you for your clarity, determination, and professionalism.

And, on pit production, Admiral Richard, I appreciate that you recently were quoted as saying, quote, “I am apprehensive that, if we are not careful, we will make an irreversible decision that will
leave the Nation without the capabilities it needs to defend itself and to execute its preferred strategies 5 to 10 years from now, which we can’t buy back,” end of quote.

Given that the NNSA [National Nuclear Security Administration] has a 2030 deadline for 80 pits at 2 sites that falls into that 5- to 10-year timeline, what concerns do you have if the NNSA fails to meet that deadline as it relates to our national security?

Admiral Richard. So, Congressman, I will offer that the requirement for 80 pits per year is based on maintaining the age of the pits in the stockpile at an acceptable level.

And so, if we are unable to meet 80 pits per year, the only alternative is to now start to accept pits that have aged past the point that we have a good analytical basis to have confidence in their operation.

We don’t have data that says they will work. We don’t have data that says they won’t work. But if we don’t reach 80 pits per year, we are going to kind of find out the hard way how that works out.

And if there is a delay in getting to 80, it will drive the requirement higher in the future in order to bring the overall age of the stockpile back to an analytically sound basis.

Mr. Wilson. Additionally, in regard to pit production, most U.S. nuclear systems have been extended far beyond their intended cycles and require significant consistent investment over the next two decades to build the expert workforce and necessary facilities to sustain them or we risk critical capabilities.

For example, the United States is the only nuclear weapon state that cannot develop currently a plutonium pit for deployment.

This committee sought to address this in the bipartisan fiscal year 2021 NDAA by directing the modernization of our plutonium pits, including production of 80 pits per year at 2 sites by 2030.

How does this uncertain funding threaten the capability of our nuclear deterrent against Russia and China, who are building or updating their own triads?

Admiral Richard. Well, fundamentally, sir, one thing that NNSA will need to achieve the capabilities that you describe to meet the requirements that DOD is asking for is stable funding.

I think it is useful for us to remember that this effort at pit production I think is the fourth or fifth attempt in our Nation’s history to reestablish it after we terminated pit production back in 1992 at Rocky Flats.

And this is an example where, if we don’t recapitalize the infrastructure, we will lose a key piece of what it means, what you have to have to be a nuclear weapon state, and we will not be able to buy it back at unlimited cost for a large number of years.

Mr. Wilson. And thank you for restating that history.

And, Secretary Dalton, the 2018 Nuclear Posture Review emphasized the need to produce no fewer than 80 plutonium pits by 2030 to sustain our current warhead supply.

The NNSA determined that a two-site approach—at least 50 percent at the Savannah River Site and at least 30 percent at Los Alamos—is the best way to provide flexibility and redundancy towards such a vital modernization effort.

Is that your view, that the recommendations of the 2018 NPR are still valid?
Ms. DALTON. Thank you, Representative, for the question.
For all the reasons that Admiral Richard laid out, this is a critical issue for us to examine in our upcoming strategic reviews. So we will be taking that into account over the next few months, and happy to come back and brief you as we have findings from the reviews.

Mr. WILSON. And, again, thank you for your service as a UVA [University of Virginia] graduate.
And I yield back.

Mr. COOPER. Mr. Carbajal.
Mr. CARBAJAL. Thank you, Mr. Chair.
General Dickinson, I agree with your assessment that the United States commercial space program aids our mitigation efforts against threats.

In a report to Congress on space launch infrastructure, it is noted that the ranges annually compete for facility sustainment, restoration, and modernization funds to sustain, repair, and construct requirements. A focus on these efforts is to sustain existing infrastructure rather than growing capability to meet the diverse user base of the launch ranges.

With the U.S. commercial launch industry on the cusp of 60 to 100 percent increase in launch rates over the next 5 years, we must be putting more resources towards growing capabilities.

Is this just a matter of needing additional funds, or does it require a policy change?

General DICKINSON. Congressman, thank you for that question. As we look to the increase in the commercial use of those ranges, those ranges actually fall under the purview of the U.S. Space Force, so General Jay Raymond, the Chief of Space Operations. The funding and infrastructure piece of that belongs to the Space Force.

I am happy to take that question for the record. But in terms of support to that activity, I do more along the lines of supporting NASA [National Aeronautics and Space Administration] in their human space flight support activities that I can go into greater detail with you if you would like.

Mr. CARBAJAL. Thank you. That won't be necessary.

Admiral Richard, I have concerns about cybersecurity and digital security of the modernization of nuclear command, control, and communications, NC3.

What digital security and reliability metrics are used throughout the acquisition process for NC3 modernization?

In addition, has STRATCOM taken any steps to improve visibility into the readiness of NC3 systems and mission?

Admiral RICHARD. Thank you, Congressman, for that question, and I will answer it in my separate responsibility as the NC3 enterprise lead for the Department of Defense. This is a separate organization that was established about 2 years ago, separate but aligned to STRATCOM, to put an enterprise-wide focus on improving the performance of NC3.

I will start with your last question first. A number of steps have been taken. And the system was always operated to a very high standard. It just had a number of operators.
We have now centralized that, and, in fact, published an operations order called Buoyant Link that standardized reporting, data acquisition, an otherwise much better understanding of the day-to-day status of the NC3 system.

Second, on the acquisition side of the house, partnering with the Under Secretary of Defense for Acquisition and Sustainment, we have established many things, but one that would highlight the point I would like to make here is a cybersecurity scorecard, where we have de-bureaucratized a very complex process, dropped into a stack of 35 metrics that are key attributes you have to build into a system, both the ones that are operating and the ones that you are acquiring. Service providers, services and agencies, now report that.

And we have a compliance mechanism where I, as the operator, judge the results of that, and then present it to the Vice Chairman and the Deputy Secretary of Defense, so that we can make either operational decisions or programmatic decisions designed to close those cybersecurity gaps.

Let me say that I have full confidence in the cybersecurity of our nuclear command and control systems for a number of reasons, but I need to modernize NC3, just like we need to modernize the delivery systems and the weapons complex, so that we can pace the threat and retain that confidence moving in the future.

Mr. CARBAJAL. Thank you.

I have limited time, but Admiral Richard, we have been hearing from you, the Department, that China is expected to double, triple, or quadruple the size of its nuclear stockpile in the next 10 years.

Even if China quadruples its current nuclear warhead stockpile, it still would only put them at a thousand warheads. In addition, China has no first-use policy and a minimum deterrence strategy.

The U.S. nuclear arsenal includes nearly 4,000 deployed and non-deployed nuclear weapons.

With all this said, how do you understand the threat of China’s arsenal in comparison to the United States much larger and advanced stockpile?

Admiral RICHARD. So, Congressman, first, the entire stockpile for the U.S. is not available to me, to operations. As you know, we are treaty constrained with Russia to 1,550 accountable weapons. That is what is available to me to actually conduct the mission.

Second, you don’t deter by accounting. I don’t hold up a card, “I have more. I win.”

Third is I don’t have the luxury of deterring one country at a time. I am required to deter all countries all the time. Right? So I have to be able to deter Russia at the same time I have to be able to deter China. And that is the point behind China is no longer a lesser included case.

In our history, we sized our forces with margin and capacity for uncertainty that left us enough residual capacity to credibly deter any other threat that we had to face. That is about to be no longer true, and that is the point behind the statement that they are no longer a lesser included case, sir.

Mr. COOPER. The gentleman’s time has expired.

Mr. CARBAJAL. Thank you. I am out of time. I yield back.
Mr. COOPER. We have about a few minutes remaining. The committee will stand in a brief recess. I ask members to make both votes and then return promptly to this room, to continue the open session. Thank you.

[Recess.]

Mr. COOPER. The subcommittee will return to order.

Mr. Lamborn.

Mr. LAMBORN. Thanks, Mr. Chairman.

General Dickinson, in your statement you said, quote, “Achieving the desired effects in the space domain requires close coordination with other combatant commands,” unquote.

There is currently great synergy that exists between USSPACECOM [United States Space Command], NORTHCOM [United States Northern Command], NORAD [North American Aerospace Defense Command], and the National Space Defense Center all being located in close proximity there in Colorado Springs.

On the personnel side, eight of the nine Space Force Deltas, formerly called Space Wings, are located in Colorado; the ninth is at Vandenberg. And seven of those eight are in Colorado Springs, including all of our Guardians, who are focused on space warfighting.

There are over 1,900 uniformed Space Force personnel in Colorado, with over 1,500 in Colorado Springs alone. And there are 32,000 total personnel who work or will work for Space Force in Colorado.

Right now all of these units and people benefit from working together in the same buildings with personnel from SPACECOM, Space Force, and their intelligence community counterparts working side by side.

How does it benefit our national security to rip out the headquarters element of Space Command from this concentration of national security, space, and intelligence community professionals and move it someplace a thousand miles away?

General DICKINSON. Congressman, your first comment about the relationship with, in particular, like U.S. Northern Command and NORAD, we do enjoy a great relationship. But I will offer to you that I enjoy a great relationship with all of the other combatant commands, and our ability to work closely with those combatant commands is fundamental to what we do each and every day.

We have had great success over the last 20 months with regard to our relationships with the other combatant commands. We have developed integrated planning elements, which are small groups of expert space planners and operators who are embedded in each of the combatant commands, and we are growing those in all of the 10 combatant commands at various levels right now.

And so I tell you, those integrated planning elements have established a great relationship with each of the combatant commands in providing critical space warfighting expertise.

Mr. LAMBORN. So something that is working well, and within the Space Command they are side by side, thousands of people side by side, why rip it in half and send some across the country?

General DICKINSON. So, Congressman, so in terms of military type of operations, we have seen in the past and in the present where we can actually do operations when we are not geographically located with each of those elements.
So there is synergy I think you gain by being in the same area, but I think there is equally synergy in terms of being able to do that in not a remote manner, but in a physically distant manner. So in terms of military type of operations, I believe you can do it in two different locations that wouldn’t necessarily be directly there in Colorado Springs, for example.

Mr. LAMBORN. Well, if the military was told to put Space Command in a cornfield in Iowa, they could do it. We can do whatever we want. But why do it when it is working so well where it is right now?

I am going to change subjects because of limited time. Would you agree with me—let me back up. It may surprise people that survivable communication networks were not required for SPACECOM by the Department of the Air Force when they did their, what I question, a highly questionable evaluation process. So survivable communications has to be added if we started a new command up somewhere; whereas, right now there are multiple secure command centers at Peterson, Schriever, and Cheyenne Mountain, which provide continuity of operations for Space Command.

In fact, past commanders of Air Force Space Command have said their preferred warfighting command center would either be the National Space Defense Center at Schriever or Cheyenne Mountain Air Force Station, the latter of which was built to survive a 30-megaton nuclear explosion. So today what kind of continuity of operations facilities are there in Huntsville, Alabama?

General DICKINSON. Well, Congressman, I am not aware of any in Huntsville, Alabama. But I do know that in terms of the National Space Defense Center and my command out in Vandenberg Air Force Base that the secure communications that they have is satisfying the mission requirements now, and if we are directed to move, that that type of infrastructure would be built and operable to meet my mission needs.

Mr. LAMBORN. And we haven’t even talked about the cost. That is going to be over a billion dollars. But we will maybe have a chance to talk about that at some time in the future. And with that, Mr. Chairman, I yield back the balance of my time.

Mr. COOPER. I thank the gentleman.

Mr. Langevin.

Mr. LANGEVIN. Thank you, Mr. Chairman. Can you hear me okay?

Mr. COOPER. Yes. Uh-huh.

Mr. LANGEVIN. Thank you.

I want to thank our witnesses for the testimony today, and thank you all for your service to the country.

In January, the Vice Chairman of the Joint Chiefs of Staff said that before possibly reassigning responsibility for electromagnetic spectrum operations [EMSO] to a new entity we needed to fix it by properly resourcing Strategic Command.

Admiral Richard, what resources do you need to effectively execute EMSO?
Admiral Richard. So, Congressman, thank you for that question. And it might be worth a reminder to you and the committee, my responsibilities in electromagnetic spectrum operations are to advocate, input on joint requirements. And then I have some responsibility to execute the new Electromagnetic Spectrum Superiority plan that DOD recently rolled out.

So General Hyten was correct, STRATCOM is not fully resourced.

There are two aspects to this, and both of these the Department is addressing, one of which is in the headquarters element.

So this is some number of personnel to execute these. And it is a small number. It is on the order of 40 people to execute the headquarters functions. And then there will be a larger need for personnel more broadly inside the Department to provide sufficient electromagnetic spectrum operations expertise.

That second number is still being determined. But we have a very good way ahead to address the deficiencies that you refer to from General Hyten.

Mr. Langevin. And, Admiral, whether or not EMSO stays at Strategic Command, what authorities does the command need to effectively execute EMSO?

Admiral Richard. Congressman, the issue is not authorities. STRATCOM and the Department writ large have sufficient authorities to accomplish this mission.

But what does need to happen—and this is specific to EMSO but also applies in some other mission sets—is we have gotten used to as a Nation adopting processes designed for permissive environments that are designed to minimize programmatic and technical risk at the expense of operational risk. We used to not do it that way.

And so one of my big functions inside EMSO is to bring the operational risk component back into the Department processes so that our programmatic and other decisions are informed by operational risk as well as programmatic and technical risk.

And that is the area, one of the areas, that we are concentrating on. I have sufficient authorities to do it. We just have to go and get it done.

Mr. Langevin. Thank you. And one other question.

Going off of Mr. Carbajal’s question, I want to follow up and ask if we should conduct similar fail-safe reviews of nuclear weapons and early warning systems, especially with regard to automation and implementing more AI [artificial intelligence]?

Admiral Richard. So we are for implementation of artificial intelligence. We are just at the beginning stages to explore possible applications of AI inside nuclear command and control.

The first place that we see is really on the intelligence side of the house. So enabling us to go through a much broader range of information than is now humanly capable or possible to do in an effort to determine much better situational awareness, and then the human processes, present that to senior decisionmakers.

The second piece that we see some immediate application for AI is in cyber defense. And it gives us a better ability to understand what is happening inside our networks, understand that better,
and make better operational decisions, again, adapting things that are beyond human capacity alone to address.

Mr. LANGEVIN. Thank you, Admiral.

General Dickinson, how would you describe information sharing and cooperation between your command and other combatant commands? What are some of the challenges that still need to be addressed?

General DICKINSON. Congressman, I think we have got great information sharing between the different combatant commands. I mentioned earlier with Representative Lamborn that we have got integration in each of the combatant commands with small planning elements right now, as well as some of their elements within my command.

In particular, Cyber Command has a cyber integrated planning element that works each and every day within my command that provides that integration. But over the course of the last 20 months with these IPEs [integrated planning elements], space IPEs, we have seen a lot of synergy in bringing integration to those combatant commands from U.S. Space Command and providing those space warfighting capabilities that they need.

Mr. LANGEVIN. Thank you very much. My time is expired.

Mr. COOPER. The gentleman's time has expired.

Dr. DesJarlais.

Dr. DESJARLAIS. Thank you, Chairman.

And thank you for your service, to our panelists.

I want to associate myself with Mr. Turner's line of questioning, Admiral Richard, on the no-first-use policy. About an hour and a half ago, I got off the phone with Ambassador Wilczek from Poland, and he is very concerned and assures me that a no-first-use policy would erode our extended deterrent.

Could it actually have an adverse impact of putting allies in the position of needing a deterrent or increasing their own capabilities?

Admiral RICHARD. Again, sir, I think the commander of European Command addressed this well in terms of us getting a mixed reaction out of our allies. I do think in some cases it will diminish our extended deterrence and assurance commitments, and if that were to be diminished that would become their own decisions as to what steps they might need to take to address that.

Dr. DESJARLAIS. Okay.

Staying on the topic of first use, but turning to Russia specifically, do you believe there are circumstances in which Russia may opt to use nuclear weapons first?

Admiral RICHARD. Congressman, that is their doctrine.

Dr. DESJARLAIS. Yeah. And I have been kind of intrigued by the argument about low-yield nuclear weapons. What do you think the likelihood would be that the next nuclear attack we see would be of the low-yield nature?

Admiral RICHARD. Congressman, it is difficult to speculate on that. I do say that, one, it is Russian doctrine under certain conditions that they would contemplate an attack like that. That capability is certainly necessary for that.
I think it is also useful for us to remember the U.S. has always had low-yield capability inside its arsenal. The only thing that was added with the recent addition of the low-yield ballistic is we simply now have a weapon system that is much more likely to actually make it to the target.

Dr. DESJARLAIS. And the W76–2s, of course, have been deployed and critics had called this weapon destabilizing. Can you respond to these critics and explain how this weapon could deter Russia from an escalation-to-win strategy?

Admiral RICHARD. I will offer that recently, within the last year, STRATCOM started formally measuring risk of strategic deterrence failure. I can give you the details on how we do that in the classified session.

But this is a formal risk assessment that is designed to make sure that we are analytically rigorous in all the things that we do, acknowledging that it is just fundamentally trying to measure a subjective process, the decision making of another country.

But our assessment is, is that deployment of a low-yield improved the risk of strategic deterrence, i.e., it lowered it because of the deterrent effect that it achieved.

Dr. DESJARLAIS. Okay. And just in the last minute or so if you would like to, the time expired in the line of questioning for Mr. Garamendi, and I was going to ask you to speak to the importance of developing the Ground Based Strategic Deterrent rather than extending the Minuteman III.

So if you would like to take a minute and further your thoughts about what effect delaying or canceling development of GBSD would have on the nuclear deterrence and our allies' confidence in the U.S. extended deterrence and, frankly, your ability to do your job the way you see fit.

Admiral RICHARD. Congressman, the Nation, one, has had a longstanding, can trace its lineage back to the Kennedy administration, flexible and tailored strategy for strategic deterrence. It has repeatedly, through every Nuclear Posture Review dating back to 1992, in that process reaffirmed that the best way to accomplish that mission is with a triad.

That makes the intercontinental ballistic missile leg of that essential to be able to accomplish this mission. You need the total capability and capacity of the triad to do what the President has directed me to do. And inside that, I need an ICBM that will actually work and actually make it to the target.

It is a remarkable accomplishment that we have been able to extend the Minuteman III as long as we have. Again, I will defer to the Air Force in terms of cost-effectiveness, that they have repeatedly reported to Congress that it is not cost-effective. And I need it to be able to pace the threat.

And so I don't see an upside to trying to life-extend the Minuteman when it is time to get a modern weapon system such that I have the ability to deter the never-before-seen-in-our-history condition of facing two peer nuclear-capable adversaries.

Dr. DESJARLAIS. Thank you.

I yield back.

Mr. COOPER. The gentleman’s time has expired.

Mr. Morelle.
Mr. Morelle. Thank you, Mr. Chairman.

And thank you to Ms. Dalton, Admiral Richard, and General Dickinson for being here today to share your expertise and obviously for your dedication and service to our Nation's safety and security.

I wanted to ask the question of Admiral Richard, the NNSA's Inertial Confinement Fusion, or ICF, program maintains three world-leading experimental facilities, including the Omega Laser Facility at the University of Rochester's Laboratory for Laser Energetics, which is in my district in Rochester, New York.

As I understand it, they are the only means for scientists to recreate the high energy density conditions found in an operating weapon without underground nuclear testing.

In addition to the physical facilities, obviously they employ and use the talented workforce that is necessary to conduct the experiments which produce valuable scientific data and deter our adversaries.

I also understand that the capabilities and the viability and their importance is demonstrated by large investments being made in new facilities under construction, both in Russia and in China.

And I wonder if, Admiral, if you could comment on the importance of U.S. scientific capabilities in avoiding, first of all, technological surprise, and ensuring the safety, reliability, and effectiveness of the nuclear deterrent without a need to resume testing.

I apologize, it is a long question, but very interested in understanding this.

Admiral Richard. Congressman, you hit on, I think, the key point at the very end of your question, which is fundamentally—and I will defer to NNSA for the details—the way the U.S. today maintains confidence in the nuclear weapons stockpile is through the Stockpile Stewardship Program where efforts like you describe provide the analytical and scientific basis for us to have confidence that our weapons will meet the standards that we ask of them without having to go to explosive nuclear testing. So maintaining that scientific and technical base is critical for us to have confidence in our deterrent.

But I will go on and point out, I mentioned human talent bases earlier. It takes a considerable amount of subject-matter expertise to take that test data that I am describing and then work it back to a confidence assessment as to whether or not the weapons are meeting standards. This is not like putting your car front end and checking the alignment and a green light comes out of the box.

And so that is one of the perishable skill sets, that if we don’t maintain that talent base and we lose it, it may take us 5 to 10 years to recreate it, sir.

Over.

Mr. Morelle. And I wonder, General, if you have any thoughts or advice that you can give us on how to continue to maintain it and make sure that we have a competitive advantage here in that regard. Is there any advice you can give us on things that we should be thinking about that in that space?

Admiral Richard. So I would encourage NNSA, through the Department of Energy, to ask for the necessary level of resources to maintain that particular program to do the weapons programs that
the Department of Defense asked for, as well as maintain their infrastructure.

The ultimate authority on what is necessary there, at least in the budget submission, is the Secretary of Energy. But I would encourage NNSA to ask for the full measure of what they think they need, not just what they think they can get.

Mr. Morelle. Very good.

Well, thank you again, Admiral, for your leadership and for your service, as well as to General Dickinson and Ms. Dalton.

And with that, I will yield back the balance of my time.

Mr. Cooper. The gentleman yields back.

Ms. Cheney.

Ms. Cheney. Thank you very much, Mr. Chairman.

Thank you to all of our witnesses.

Admiral Richard, I wanted to follow up on something one of my colleagues was asking you about. There is an idea from some on this committee and more broadly that, even though we are facing adversaries as you have described, a historic, unprecedented situation with respect to China and Russia, both of whom are undertaking massive modernization buildup and expansion programs, that somehow the solution is for us to risk our own security, to tie our own hands with no-first-use, to reduce our own capabilities, to delay, yet again, modernization.

I wanted to remind the committee generally of something that President Truman said in NSC–68, which is timeless. He said, “No people in history have preserved their freedom who have thought that by not being strong enough to protect themselves they might prove inoffensive to their enemies.”

And I would like to ask you, Admiral Richard, if you could describe—give you a chance to describe in a little bit more detail what we are seeing from the Chinese, in particular. I don’t think the American people fully recognize and understand the nature and the expanded nature of that threat.

And also what it means when we say the Minuteman III is so old. What does that mean in terms of what is available, what is not available, what it would really mean if we were to ask you simply to extend the life of that program once again?

Admiral Richard. Congresswoman, thank you for the question.

So I ran through it very quickly in my opening statement, but I will elaborate that we are seeing this very rapid expansion of Chinese capabilities. I will give you the specific numbers in the closed session.

But this is rapid expansion of their road-mobile capability. And this is an intercontinental ballistic missile that is on a very large truck. Russia and China have them. We do not. Those are very large countries, and they simply drive the missile around. It is a challenging thing to keep up with them.

So they have this new capability expanding rapidly. They have many new solid fuel intercontinental ballistic missile silos. These are the same ICBMs, by the way, that we are talking about either life-extending or otherwise trying to use ourselves.

A solid fuel rocket is very responsive, and that, coupled with their new nuclear command and control, gives them a launch under
warning or launch under attack capability that right now only the
U.S. and the Russians possess.
They are about to complete a triad. And so they have a strategic
bomber with an air-launched ballistic missile capability on that. So
for the first time, they have a complete triad.
They have six second-generation ballistic missile submarines, so
they can do continuous at-sea deterrent patrols, i.e., a survivable
second strike capability, and a missile that can range continental
United States from protected bastion in the South China Sea.
And you add all of this together and they can do any plausible
nuclear employment strategy regionally. This will backstop their
conventional capability and will constrain—potentially constrain
our options. In other words, we will be the ones that are getting
deterred if I don't have the capability to similarly deter them.
And the key point is, this is about to become additive to what
the Russians can do.
So that is the threat. More detail in the closed session.
But this is a breathtaking expansion. I just gave an order at
STRATCOM that if you have a China brief that is more than a
month old, take it back to the intel people and get it updated be-
cause it is out of date. That is how rapidly they are moving.
And remember, STRATCOM is not the source of this intelligence.
The intelligence comes from the intelligence community. We are
simply the ones that interpret it operationally like other com-
mands.
Ms. CHENEY. Thank you, Admiral.
And I think it is important to just reaffirm the words that you
have used, that the Chinese are at an inflection point, this is a
breathtaking expansion, accelerating rapidly. And we are asking
you to be able to deter both China and Russia simultaneously.
And I think from the perspective of this committee and our obli-
gation to ensure that you have the resources you need, the notion
that we are asking you simply to life-extend one more time tech-
nology from the 1970s is completely irresponsible. And I think we
need to face the consequences of that choice if that is the path we
choose to go down.
Admiral RICHARD. Congresswoman, if I could just add—and,
again, and I will defer to the U.S. Air Force and the Secretary of
Defense as to whether or not Minuteman III can be life-extended.
They provide me the system.
Here is why I say I am just not sure it can be done: They have
a long list of parts that are in very short supply.
For example, right now there are only two of these launch
switches that go into every launch control center, there are only
two in supply. You have got to have 45 of them for each launch
control center.
Nobody makes the inside of a switch anymore. No company is
going to make the inside of the switch. This is like asking a com-
pany to make a dial-up modem. There is no profit in doing some-
thing like that.
Air Force has been consistently pulling rabbits out of the hat to
solve these problems. I am afraid there is a point where they won't
be able to pull the rabbit out of the hat and the system won't work.
Ms. CHENEY. Thank you.
Mr. COOPER. The gentlelady’s time has expired.
Mr. Panetta.
Mr. PANETTA. Thank you, Mr. Chairman.
And thank you, Secretary Dalton and gentlemen. Thank you for your time today.
And also thank you to both Admiral Richard and the General for stopping by my office and having the personal time that we did. I truly appreciate that.
Admiral Richard, you were in my office this morning and I appreciate our brief conversation. But you also, yesterday and today, today you have testified extensively, and in the past, regarding the dangers of reliance solely on the submarine leg of the nuclear triad, which on a day-to-day basis is actually a dyad between the sea and the ground legs.
And if we were to choose to delay modernization of the ground-based leg or not move forward with the Ground Based Strategic Deterrent, especially in the midst of ongoing modernization of the LRSO [Long-Range Standoff Weapon], we would be essentially fully reliant on the sea-based leg of the triad.
Now, yesterday you testified to the Senate that you would request reactivation of bombers on alert if the ground leg were to be removed. You, yourself, are, as we talked about today, a career submariner, and I am sure are much more familiar than anyone else in the room today with the survivability and effectiveness of our submarine force and submarine-launched ballistic missiles.
Arguments against moving forward with the Ground Based Strategic Deterrent are largely based on the premise that the sea leg of the triad can maintain an effective deterrent now and into the future.
Now, you have also testified that Russia is currently approximately 80 percent complete with nuclear modernization and recapitalization. While China is considered the Department’s overall pacing threat, you have stated that Russia is the pacing nuclear threat. Russian modernization and innovation span hypersonic weapons, ICBMs, and nuclear-powered torpedoes.
Now, yesterday you called the nuclear threat you expect the United States to face in 2030 as unprecedented, and you focus on the fact that the United States has never before had to deter two nuclear adversaries with separate interests at the same time.
Now, in 2017 and 2018 there was reporting that identified Chinese efforts to develop a new satellite which would detect submarines using lasers and looking at disturbances in the water. They have also reportedly developed new magnetic detection devices and are actively pursuing new technology to be able to detect and neutralize our nuclear submarine forces.
Regardless of the success of these individual Chinese efforts, it is clear that our adversaries are working extremely hard to degrade the survivability of our sea leg.
So apart from the inherent risk of a reliance on one leg of the triad, are you aware of the specific modernization efforts being made by Russia and China to more effectively identify and neutralize our nuclear submarines in the future?
Admiral RICHARD. Congressman, thank you for that question, and I will try to address all the pieces of that.
First, I will remind, respectfully, there is a fundamental design criteria inside the triad that we assume that we could lose any leg of the triad and still meet all Presidential objectives, albeit with reduced flexibility. So without getting into the individual risk, that was just a basic design assumption.

And I should point out, yes, I said that yesterday, that if we do not have an intercontinental ballistic missile leg I would request to re-alert the bombers. I would do that.

That would only get us through the day-to-day issue. There would still be an overall capacity issue that I would need to address in order to do all the things the President, via Secretary of Defense, has asked me to do.

As to the survivability of submarines, yes, there are extensive efforts underway by Russia, China, and others to improve their anti-submarine warfare capability. This is historic. This has been the case. It is a classic hider-finder competition undersea like in other domains.

We have equivalent efforts underway to attempt to find theirs. We have extensive programs designed to ensure the survivability of our submarine force in general, ballistic submarines specifically.

So I have full confidence in our ability to maintain the survivability of the submarine leg. However, that is not the only reason or risk. There are also operational and technical things that have nothing to do with the opponent that have to be accounted for. And independent of that, we have always assumed that we could still lose a leg of the triad and still meet Presidential objectives.

Mr. PANETTA. Outstanding. Thank you, Admiral.

Mr. Chairman, I yield back.

Mr. COOPER. Thank you. The gentleman's time is expired.

It looks like Mr. Waltz is no longer here.

Mr. Brooks.

Mr. BROOKS. Thank you, Mr. Chairman.

I have got some questions that also revolve around the Space Command headquarters being located at Redstone Arsenal and Tennessee Valley. And I want you to think about things in two different contexts. One is merit; the other is nonmerit or political.

And let me run through the merit just for a moment.

With respect to merit, as I understand the criteria or minimum requirements, there were three. One, you have to be within the top 150 largest metropolitan statistical areas; you have to be within 25 miles of a military base; and you have to score in the top 50 or above on the AARP's [American Association of Retired Persons'] Public Policy Institute's Livability Index.

Quite clearly, I think everyone would agree that Redstone Arsenal and Tennessee Valley met those minimum criteria.

So once you get past those minimum criteria, then you had a competition of sorts amongst other locales that met those minimum criteria, an evaluation of each site's score based on four criteria.

Forty points was based on mission-related criteria. A subpart of that was workforce.

By way of emphasis, Tennessee Valley/Redstone Arsenal has one of the highest concentrations of engineers in the world and certainly in the United States of America. We have mathematicians, scientists, physicists, a highly qualified workforce.
We have, second subpart, mutually supporting space entities. Well, certainly, as General Dickinson knows, we have got a plethora of space-related military activities on Redstone Arsenal. We are also the home of the Marshall Space Flight Center, which is the birthplace of America's space program. Very hard for anyone else to compete with the attributes that we have there.

So on the 40 points of mission-related criteria, I would submit that Redstone Arsenal did very, very well, as evidenced by what we provide in the Tennessee Valley and the Redstone Arsenal.

Second criteria was infrastructure criteria—parking, land, communications. Some of you are familiar with what we provide at Redstone Arsenal, certainly General Dickinson is, family of military personnel, housing, health care. I would submit that we also score very, very well in that second criteria. So that is 70 of the points.

Then you have got the third criteria, which is community support, which is 15 points. Schools. We have got excellent schools in the Tennessee Valley. You have got a lot of gifted parents. And of course, they demand high-quality schools for their children.

Cost of living. A-plus score, in my judgment, there. We are one of the lesser expensive places to operate in the United States of America.

Community support then, criteria, that was 15 points. I would submit Redstone Arsenal and the Tennessee Valley score very well.

Then the fourth criteria, the cost to the Department of the Air Force. Granted that there is an initial startup cost, and at Redstone Arsenal that may be higher than at other places. However, there is also the long-term operational cost.

Given the lower cost of living, the other things that we offer at Redstone Arsenal and Tennessee Valley, I would submit that we also score well according to the cost to the Department of the Air Force criteria.

So all that merit-based stuff being cited very, very quickly, now I get to my question. This is with respect to each of you, and I will start with General Dickinson.

Are you aware, personal or direct knowledge, of any political, nonmerit influence on the Space Command headquarters Redstone Arsenal location decision? Anything other than merit?

General Dickinson, are you, any personal or direct knowledge?

General DICKINSON. I am not. I have no personal or direct knowledge.

Mr. BROOKS. Admiral Richard, are you aware, personal or direct knowledge, of anything that would suggest that the decision to locate Space Command headquarters at Redstone Arsenal in the Tennessee Valley of Alabama was based on political or nonmerit influence as opposed to merit?

Admiral RICHARD. Congressman, no, I am not.

Mr. BROOKS. Ms. Dalton, I know this might be outside your normal ballpark, but same question to you. Are you, with personal or direct knowledge, aware of any political or nonmerit influences on the Space Command headquarters Redstone Arsenal location decision? Anything other than merit?

Ms. DALTON. No, I am not.

Mr. BROOKS. No further questions.
Thank you, Mr. Chairman.

Mr. Cooper. The gentleman yields back. That is the last question for open session.

We will declare a brief recess so that we can make the last vote. And then we will return not to this room, but to 2212 for the closed session.

[Whereupon, at 6:04 p.m., the subcommittee proceeded in closed session.]
PREPARED STATEMENTS SUBMITTED FOR THE RECORD

APRIL 21, 2021
Opening Statement, Rep. Jim Cooper
Fiscal Year 2022 Strategic Forces Posture Hearing
April 21, 2021

This hearing will come to order.

Members who are joining remotely must be visible onscreen for the purposes of identity verification, establishing and maintaining a quorum, participating in the proceeding, and voting. Those Members must continue to use the software platform’s video function while in attendance, unless they experience connectivity issues or other technical problems that render them unable to participate on camera. If a Member experiences technical difficulties, they should contact the committee’s staff for assistance.

Video of Members’ participation will be broadcast in the room and via the television/internet feeds. Members participating remotely must seek recognition verbally, and they are asked to mute their microphones when they are not speaking.

Members who are participating remotely are reminded to keep the software platform’s video function on the entire time they attend the proceeding. Members may leave and rejoin the proceeding. If Members depart for a short while, for reasons other than joining a different proceeding, they should leave the video function on. If Members will be absent for a significant period, or depart to join a different proceeding, they should exit the software platform entirely and then rejoin it if they return. Members may use the software platform’s chat feature to communicate with staff regarding technical or logistical support issues only.

Finally, I have designated a committee staff member to, if necessary, mute unrecognized Members’ microphones to cancel any inadvertent background noise that may disrupt the proceeding.

I would like to begin by thanking our distinguished panel of witnesses for testifying today. We look forward to hearing, both in open and closed sessions, from Ms. Melissa Dalton, Acting Assistant Secretary of Defense for Strategy, Plans, and Capabilities, Admiral Charles Richard, Commander of U.S. Strategic Command, and General James Dickinson, Commander of U.S. Space Command.

In reading through their testimonies, we are reminded that the work of this Subcommittee is arguably the most important, technical, and consequential of any committee in the House.

Whether we realize it or not, Americans rely on space every day for almost everything we do. Protecting our way of life means protecting our space assets. The establishment of Space Command is critical to this task. This new command must begin in a way that is different from the traditional thinking we see in Department of Defense bureaucracy. General Dickinson has the monumental task of setting the right foundation for competing in the space domain. I fear that the surprise decision to move the new headquarters to Alabama from Colorado will mean losing up to 95% of his civilian workforce with a potential move to Huntsville. (This was the attrition rate of a recent Strat move from Nebraska to Colorado.) No enemy could dream of dismantling our workforce the way we are
apparently about to do to ourselves. We should try to avoid making unforced errors.

Regarding our nuclear forces, the average age of House members in the 117th Congress is 58, close to the average age of our nuclear deterrent. Our missile silos suffer from “corrosion, water intrusion, collapsed conduits, misaligned doors, and bulging walls,” conditions no longer suferable for one leg of the Triad in the Pentagon’s top priority of “safe, secure and reliable” nuclear weapons. These silos are housing not only our deadliest weapons, but also airmen and airwomen who work 24 hours a day, 7 days a week defending our nation and the free world. There is much to be done, and we have little margin for error.

Understanding that we will move to a closed session upon conclusion of the open hearing, I request the witnesses keep their remarks to 5 minutes, and members respect the same time limit for their questioning. I yield to the Ranking Member, Mr. Tumer.
Statement of Ms. Melissa Dalton  
Acting Assistant Secretary of Defense for Strategy, Plans, and Capabilities  
Before the  
House Armed Services Committee Strategic Forces Subcommittee (HASC-SF)  
On FY22 Strategic Forces Posture: Nuclear, Missile Defense, Space, and Hypersonics  
April 21, 2021

Introduction

Chairman Cooper, Ranking Member Turner, and distinguished Members of the Committee, thank you for the opportunity to testify before you today on the international security environment and the Department’s nuclear, missile defense, space, and hypersonics policy, strategy, and capabilities. It is an honor to appear beside both Admiral Richard and General Dickinson, and I look forward to answering your questions.

Today, the United States faces a complex, global threats environment characterized by militarily capable strategic competitors, increasingly dangerous regional powers, and accelerating technological change with significant strategic effects.

Both Beijing and Moscow have invested heavily in efforts meant to challenge U.S. strengths and prevent us from defending our interests and that of our allies. In particular, China is a pacing challenge as it has rapidly become more capable and assertive. China’s military modernization—including nuclear forces, cruise, ballistic, and hypersonic missiles, and its space and counterspace threats—presents an increasingly urgent challenge. Beijing is the only competitor potentially capable of combining its economic, diplomatic, military, and technological power to challenge the long-standing free and open international order. As we address accelerating competition by China, we also must ensure that we continue to be fully ready to respond to and effectively deter threats from Russia, Iran, and North Korea. The world has witnessed destabilizing and aggressive actions by Russia in its attempt to undermine the current international system. Russia remains determined to not only enhance its global influence, but also erode U.S. leadership. In addition, both Iran and North Korea are destabilizing regional stability, pursuing game-changing capabilities and technologies, and threatening U.S. allies and partners.

We are confronted with both unique and overlapping challenges. In a security environment featuring increasingly assertive and dangerous competitors fielding technologically advanced military capabilities able to achieve strategic and potentially escalatory effects, we must be able to maintain and strengthen our corresponding strategic capabilities. Our strategic forces—nuclear, space, missile defense, and hypersonic—offer critical capabilities that are essential to deterring adversaries so that we can protect the American people and our allies and partners.

As the 2021 Interim National Security Strategic Guidance states, while today is a time of unprecedented challenges, it is also a time of unmatched opportunity. None of these evolving challenges can be effectively addressed by one nation alone. One of the greatest advantages the United States has today and in the future is its alliances and partnerships with those who share common national security interests. Together, we can amplify our collective competitive advantages.

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SENSITIVE BUT UNCLASSIFIED
The Nuclear Threat, Policy, and Posture

Nuclear deterrence is the Department’s highest priority mission. Our nuclear forces provide the bedrock of our national defense, and remain essential to ensure no adversary believes it can ever employ nuclear weapons for any reason, under any circumstances against the United States or our allies without risking devastating consequences. DoD will maintain safe, secure, survivable, and effective nuclear forces that account for the challenges posed by Russia, China, North Korea, and Iran. Together with our conventional capabilities, our nuclear forces ensure that our extended deterrence commitments remain strong and credible.

Overview of Adversary Threats

Over the next ten years and in response to perceived threats, including potentially first strike capability from the United States, China plans to at least double the size of its nuclear stockpile and carry out a rapid expansion and diversification of its nuclear arsenal. Its arsenal includes a mix of strategic-range systems capable of striking the United States as well as theater-range forces capable of threatening allies, U.S. bases, and forces in the region. China is developing a new generation of mobile missiles, with multiple independently targetable reentry vehicles (MIRVs) and penetration aids to overcome perceived missile defense capabilities. China has developed a new road-mobile strategic intercontinental ballistic missile (ICBM) and has armed its ballistic missile submarine with new submarine-launched ballistic missiles (SLBMs). Although China maintains its “No First Use” policy, these weapons could provide China with coercive options in a crisis or conflict and are a direct threat to U.S. security.

Russia’s comprehensive nuclear modernization program includes replacement of legacy systems and the fielding of novel systems on each leg of its strategic triad. To date, Russia has recapitalized roughly 80 percent of its strategic nuclear forces, including an array of modernization efforts and novel weapons programs designed to ensure a responsive strike capability. Russia also has an arsenal of up to 2,000 non-strategic or non-treaty accountable nuclear weapons of more than a dozen types. Furthermore, the Defense Intelligence Agency estimates the number of Russia’s non-strategic nuclear weapons will grow significantly over the next decade. Although Russia may claim these weapons are defensive in nature, to address conventional imbalances with the United States and its allies, this arsenal nevertheless provides Russia with a threatening means of coercion and threaten our allies and partners and forward deployed U.S. assets. Russia has also adopted a military doctrine that includes the possibility of limited nuclear first use in a regional context that threatens Russian sovereignty.

Finally, regional states like North Korea and Iran continue to play a destabilizing role, with North Korea in particular continuing to develop its nuclear weapons and ballistic missile programs.

Status of Review and Renewed Focus

In keeping with past practice for incoming Administrations, the Department will soon begin a set of strategic reviews that will include U.S. nuclear posture and policy, and will be informed by the current security and fiscal environment. The reviews will align with the U.S. national defense strategy and will account for strategic forces across all war-fighting domains. The
reviews will consider and assess adversary nuclear forces and doctrine, U.S. strategy, posture and policy adjustments, and review program execution risk – all with a goal of maintaining a strong and stable deterrent. The views of allies and partners will inform these reviews. As Secretary Austin has said repeatedly, we perform better when we’re operating as part of a team, and the Department is committed to meaningful consultation with allies and partners, accounting for their views before reaching any conclusions.

Importantly, the review will include a renewed focus on the need to maintain strategic stability and reduce the risk of miscalculation in a crisis. Arms control agreements and arrangements and constructive dialogue with our nuclear competitors, as well as preventing nuclear proliferation, are in our mutual interest and should remain important tools to advance U.S. national security and hold our adversaries accountable.

The President has already demonstrated his commitment to re-establishing U.S. credibility and leadership on arms control by extending the New START Treaty for five years, in accordance with the terms of the treaty, just days before New START was to expire. Extending New START ensures legally-binding constraints on Russia’s nuclear warheads deployed on treaty-defined strategic delivery vehicles, capping these warheads at 1550, and also limits both its deployed and non-deployed launchers. And it keeps in place the treaty’s important verification system, to ensure that Russia remains in compliance with its obligations under the treaty. New START provides stability and predictability in addition to placing limits on Russian systems that pose an existential threat to the United States.

As we mark the 11th anniversary of the signing of New START this month, we must look to build on this foundation. The range of Chinese and Russian nuclear modernization make the task of making progress on further arms control all the more necessary. In addition, the migration of strategic effects (with consequent escalatory risk) into cyber, space, and information domains underscores the importance of meaningful dialogue with Russia and China on a range of emerging military technological developments that threaten strategic and regional stability. Presidents Biden and Putin have already agreed to explore strategic stability discussions on a range of existing and emerging security issues. We expect China to accept its responsibility as a nuclear-armed, technologically advanced power, which includes increased transparency and progress on nuclear security, and to take its seat at the table to discuss matters that impact the security of all nations. The Department will support efforts to negotiate agreements and arrangements that make the United States and its allies and partners more safe and secure.

**Nuclear Modernization**

As Secretary Austin testified, we must sustain and modernize the nuclear triad to maintain credible deterrence in the face of today’s threats. This committee is well aware of the age of our nuclear systems and DoD’s challenge in sustaining them as we proceed with modernizing U.S. nuclear forces after decades of deferred recapitalization. U.S. nuclear weapons have been extended far beyond their original service lives, and the tipping point, where we must confront the fiscal and programmatic challenges of simultaneously modernizing each leg of the triad, is now here. While the Administration is reviewing the U.S. nuclear posture, the President’s FY 2022 discretionary request supports ongoing nuclear modernization programs while ensuring that these efforts are sustainable. Moreover, as Deputy Secretary of Defense Hicks has said, our nuclear infrastructure is at the very heart of our nuclear deterrent and must be modernized and
appropriately resourced. To continue to meet military requirements and better mitigate future risks, the United States has a number of ongoing programs to replace many of these systems in order to ensure our nuclear weapons remain safe, secure, and effective against current and future threats. This includes the modernization of responsive land-based ICBMs, a nuclear long-range cruise missile, a visible and modern bomber fleet and nuclear-capable F-35s capable of delivering weapons in contested airspace, and production and fielding of the Columbia-class ballistic nuclear submarines (SSBNs) and the associated TRIDENT missiles to ensure the most survivable leg of the triad. Furthermore, the United States requires a robust nuclear command, control and communication (NC3) system that ensures the President has the ability to command and control U.S. nuclear forces at all times, even under the most extenuating circumstances. These systems are also well past their predicted life-span and modernizing them, as well as the development of a future NC3 architecture, is long overdue. The Department has already undertaken an examination of legacy NC3 systems to facilitate a transition to a modern architecture fit for 21st century threats. As this effort moves forward, NC3 will continue to be a top priority along with addressing critical elements of the nuclear modernization program.

Commitment to Allies and Partners

The U.S. nuclear deterrent and the extended deterrence assurances we provide to our allies are an important element of regional and strategic stability. The United States has long committed to extending nuclear deterrence to a number of treaty allies. U.S. nuclear forces and nuclear-sharing arrangement with our allies in NATO for the last 60 years have been central to the security of the Alliance. In particular, our support to the UK and their Continuous-At-Sea-Deterrent has underwritten our collective peace and security from nuclear threats for more than 60 years since the signing of the Mutual Defense Agreement in 1958. And in Asia, our relationships with important allies such as the Republic of Korea and Japan are critical to regional security and stability and provide a powerful deterrent to North Korean threats. We have long-standing extended deterrence dialogues with Japan, the Republic of Korea and NATO, and will continue to use these venues to deepen our understanding of allied concerns, and assure them as to the continued importance of U.S. extended deterrence commitments as a crucial part of our national security.

Conclusion

Nuclear weapons have served a central role in U.S. national security strategy for the past 70 years. Not only are they the foundation of our strategy to preserve peace and stability by deterring aggression against the United States, our allies, and our partners, but our nuclear forces underwrite nearly every U.S. military operation around the world. As long as nuclear threats exist, we must have a modern nuclear deterrent that is safe, secure, and credible to keep America and its allies safe, prosperous, and free.

The Missile Defense Threat, Policy, and Posture

Threat Environment

As missile technology matures and proliferates, the threat to the U.S. homeland, allies, partners, and our deployed forces is steadily growing. Potential adversaries continue expanding their
inventories and adding new and increasingly sophisticated systems, often for the purpose of creating political instruments of regional or global coercion.

The rogue state threat to the United States has intensified. North Korea continues development and deployment of more capable intercontinental ballistic missiles (ICBMs) and sea-launched ballistic missiles (SLBMs). Iran is extending the range, reliability, and accuracy of its missile forces at a concerning rate.

The regional missile threat is alarming as potential adversaries continue to field more accurate and lethal offensive missile systems capable of threatening the U.S., allies, partners, and deployed forces. Pyongyang is accelerating its efforts to field more advanced and reliable short- and medium-range systems, including an increase in recent testing. Iran’s short- and medium-range ballistic missiles comprise the largest missile force in the Middle East, which it wields to threaten regional stability. Russia maintains one of the most numerous and sophisticated missile inventories in the world and is building new, advanced ballistic and cruise missiles. In 2019, China launched more ballistic missiles than the rest of the world combined while also placing a heavy emphasis on testing hypersonic glide vehicles (HGV). Missile systems form the backbone of the PRC’s anti-access / area denial (A2/AD) strategy to inhibit U.S. power projection capabilities, coerce our allies, and reshape the balance of power in the Indo-Pacific region.

This evolving missile environment informs our missile defense efforts moving forward, which are part of a larger strategic framework to leverage all elements of national power to prevent and deter conflict.

Policy Framework for Upcoming Strategic Review

We will review our missile defense policies, strategies, and capabilities to ensure they align with our broader national security and national defense strategy. This review will be informed by several principles. First, we will work to ensure we have an effective and affordable defense to address the rogue state threat to the United States. Second, we will examine means to enhance our regional posture to support our allies and partners, defend deployed forces abroad, and to address anti-access/are denial strategies that seek to inhibit U.S. freedom of action. Third, missile defense will remain an important component of our strategy to assure U.S. allies and partners that we stand firm in our security commitments. In this context, the Department will examine the appropriate mix of capabilities and tools to protect our forces, deter our adversaries, and address future uncertainty while strengthening strategic stability.

Homeland Defense

Let me outline where we are today, recognizing the Administration is just beginning its various strategic reviews. As Secretary Austin stated during his confirmation hearing, protecting the homeland is a key priority for the DoD, and missile defense against rogue state threats is a central component of this mission. The United States is currently defend from rogue state ICBM threats by the Ground-Based Midcourse Defense (GMD) system. But, the threat is not static and neither is our commitment to improving the defense of the nation. To that end, the Department recently initiated the development of the Next Generation Interceptor (NGI) which will augment and potentially replace the current GMD interceptors and improve the overall
reliability of the inventory. As this program moves forward, it will do so in a manner that aligns with the Administration’s defense goals and priorities.

OSD Policy will help ensure our missile defense capabilities seek synergies with the cruise missile defense mission, and we will work across the Department to ensure the United States is appropriately postured against these threats.

Another vital component of effective homeland and regional defense, which Secretary Austin has noted, will be to enhance our global network of integrated sensors. Space-based and land-based sensors enable a variety of capabilities such as detection, tracking, and targeting through all phases of flight for an incoming missile. We will continue to explore, in particular, advanced space-based sensing capabilities to assist in homeland and regional operations.

Regional Defense

Over the past decade, the United States has made significant progress in developing capabilities for protection against regional missile threats. We thank Congress for the continued support of regional missile defense systems to address regional missile threats and the A2/AD strategies of potential adversaries. We also look forward to exploring new regional capabilities, like hypersonic missile defense, directed energy technologies, and upgrades to current regional systems such as Patriot, THAAD, and the SM-3 interceptors to maximize their interoperability and defended battlespace. The Department will continue to ensure that we bring a more integrated approach to air and missile defense (IAMD) that not only assists with defense against multiple types of ballistic missile threats but also enables other regional missions, such as defense against cruise missiles and unmanned aerial systems.

Cooperation with Allies and Partners

Working closely with key allies and partners in Europe, the Middle East, and the Indo-Pacific region to enhance our collective missile defense efforts will be a core focus area for the Department. From a strategic standpoint, and as Deputy Secretary Hicks testified, cooperation in this area strengthens our common protection, enhances deterrence, and provides assurances essential to the cohesion of our alliances in the face of growing regional missile threats, coercion, and attacks. Operationally, by developing a more coordinated and where possible integrated approach to air and missile defense, we will improve our ability to work with allies and partners to collectively address adversary A2/AD strategies and capabilities.

Conclusion

As the Department prepares for an in-depth strategic review, I assure members of this committee that it will remain committed to key missile defense missions. It will be critical to invest in the right missile defense technologies in a cost-effective and responsible manner to retain our regional and strategic edge long into the future.

Space Threat, Policy, and Posture

Assured access to space, and freedom to operate in space, are vital to addressing the threats and achieving the strategic priorities identified in President Biden’s Interim National Security Strategic Guidance. Space-based capabilities are an inextricable component of the daily
workings of modern life, from global commerce, to civil society, to national security, adding $366 billion to the global economy in 2019, according to the Satellite Industry Association.

Space-based sensors help us monitor and respond to climate change, track logistics flows around the world, chart the economic impacts of a pandemic, verify compliance with arms control treaties, support our warfighters with critical battlespace awareness, and anticipate and respond to crises. The U.S. Space Force’s Global Positioning System, now operated by forces assigned to the U.S. Space Command, supports the positioning, navigation, and timing needs of the U.S. Government, and the American people, and serves as a key U.S. benefit to billions of people in nations across the globe. Satellite communications and space-based data transport networks enable everything from television to internet services to our simultaneous command and control of military forces in multiple theaters around the world.

Space is also an arena of strategic competition. Although the United States remains the world’s leader in space, and we cooperate with allies and partners who contribute world class space capabilities of their own, we must recognize the growing role that space plays in enabling China’s increasingly assertive challenges to a stable and open international system and in Russia’s disruptive role on the world stage. Just as we can leverage the power of space-based systems to advance democracy, human development, and economic well-being, so too can anti-democratic forces use these same capabilities to advance their agenda by spreading disinformation that sows divisions within and among free nations, undermines existing international frameworks, and promotes alternative models of authoritarian governance. Sustaining U.S. leadership in space – including by investing in science, technology, engineering, and mathematics education, by leveraging commercial innovation, and by shaping standards of responsible behavior within the domain – is integral to our ability to meet these competitive challenges today and in the future.

The United States would prefer that space remain free of conflict, but we will be prepared to protect U.S. interests in space, just as we do in other domains. The emergence over the past two decades of potential adversaries with counterspace capabilities – missiles that can shoot down satellites, lasers that can blind satellites, co-orbital satellites that can attack other satellites, cyber threats that can attack satellites and their control systems – has made space mission assurance against malicious acts involving space objects a vital concern for the Department of Defense and for all space operators. Likewise, the growing ability of potential adversaries to utilize space-based systems to enable their militaries and threaten our terrestrial forces and other national security interests has increased the importance of being able to deny hostile uses of space.

There is a longstanding history of bipartisan support for our national security space enterprise. We have seen this in the consistent security themes of national space policies across several administrations and in the reports of multiple congressionally charted commissions on space security. Most recently, we saw this in the bipartisan legislation passed in 2019 that established the U.S. Space Force and the Assistant Secretary of Defense for Space Policy, and updated the law with respect to the U.S. Space Command.

Collectively, this organizational framework for Department of Defense space activities provides a more orthodox division of labor for the respective roles of organizing, training, and equipping space forces; conducting space domain operations; and ensuring civilian oversight of space warfighting policy. The Department is grateful for this committee’s strong bipartisan support for
initiating and sustaining these important organizational reforms and helping ensure we have the necessary means to realize our nation’s strategic goals regarding space.

Space is also an important and growing focus area as we reinvigorate and modernize our alliances and partnerships around the world. We continue to grow and leverage the Combined Space Operations (CSPO) Initiative among the U.S., Australia, Canada, France, Germany, New Zealand, and the United Kingdom as a primary venue for sharing perspectives on threats and coordinating defense space policies, capabilities, and operations. Likewise, through CSPO and our bilateral relationships with allies and partners like India, Israel, Italy, Japan, and the Republic of Korea, we are diversifying our space architectures, adding capabilities and mitigating risks in ways that enhance mission assurance, sustain freedom of action in space, and preserve the peaceful use of space.

The Department of Defense is also working with our counterparts in the U.S. Department of State to continue to maintain our nation’s position of leadership in international institutions like the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS). We are supporting State’s diplomatic efforts to advance implementation of consensus COPUOS guidelines for space debris mitigation and long-term sustainability of outer space by all spacefaring nations.

Our U.S. space diplomacy efforts are empowered by a strong and credible defense and by the transparency of our own space operations.

Finally, we are continuing important efforts to reform the way the Department acquires space systems to accelerate delivery and build a more resilient architecture that can withstand attacks, whether by kinetic, directed energy, cyber, or other means. In doing so, we will sustain the qualitative advantages that our space architectures provide to the joint force across all mission areas, even as we adopt innovations from the private sector, such as proliferated constellations of lower cost satellites that utilize common systems and enable rapid replenishment and technology refresh.

**Hyypersonic Threat, Policy, and Posture**

For the United States, hypersonic strike systems are an emerging conventional weapon capability that is central to the broader strategic goal of modernizing the Joint Force to ensure it can deter and, if necessary, defeat strategic competitors in a high-end conflict over the mid- to long-term. China and Russia are making concerted efforts to invest heavily in capabilities that are increasingly eroding traditional U.S. warfighting and military technological advantages, driving the strategic and operational value of U.S. hypersonic capability.

Both China and Russia have developed and are fielding or seeking to field large quantities of anti-ship ballistic missiles, advanced cruise missiles, high-end integrated air and missile defense systems, anti-satellite capabilities, ballistic missiles, and hypersonic weapon systems. Hypersonic strike systems, including those that are nuclear-armed, are top national priority efforts for both states. They are aggressively developing and fielding such systems, seeking to utilize the speed, altitude, and maneuverability of hypersonic weapons to further enhance the sophistication and density of their anti-access and area denial networks. Collectively employed, these systems create a highly contested future operating environment. China and Russia are
creating an operating environment designed to deny our forces the freedom to maneuver; holding our forces, ports, and airfields at risk; and challenging our existing weapon capabilities.

In response, over several years and across Administrations, the Department has prioritized the development of specific capabilities to address and mitigate these challenges. The development of U.S. hypersonic strike weapons systems, all of which are strictly non-nuclear, is one of these priorities.

Hypersonic weapon systems offer clear and distinct operational advantages. They travel at speeds near and above Mach 5 (five times faster than the speed of sound), enabling long-range flight at the upper reaches of the atmosphere. The combination of hypersonic systems’ speed, maneuverability, and altitude provides us with a rapid, highly survivable, long-range fires capability. Conventional hypersonic weapon systems will enable us to hold high-value, time-sensitive targets at risk. Additionally, they are a conventional strike option against distant and defended threats when our forces are unavailable, denied access, or their employment is not preferred. Simply put, hypersonic weapons allow us the ability to destroy critical enemy infrastructure and anti-access systems anywhere in the world within hours, enhancing the U.S. capability to create strategic effects, without crossing the nuclear threshold. Conventional hypersonic strike is thus a key element of our efforts to modernize the Joint Force, deter adversaries, and restore warfighting advantage in key domains of the future operating environment.

Each Military Department is currently developing hypersonic strike capability. The Army’s Long-Range Hypersonic Weapon (LRHW), the Navy’s Conventional Prompt Strike (CPS), and the Air Force’s Air Launched Rapid Response Weapon (ARRW) are all existing programs scheduled to deliver a family of hypersonic weapons beginning in the early to mid-2020s. The Air Force also has a program underway to develop the Hypersonic Air-launched Cruise Missile (HACM). When fielded and operational, these programs will provide the Department the ability to deliver hypersonic weapon systems by air, ground, or sea platforms, thus both modernizing and enhancing the credibility of the Joint Force’s long-range strike portfolio.

Hypersonic weapons systems will enhance the Joint Force’s combat-credible deterrent, an imperative of our defense strategy. As such OSD Policy has championed the development of this capability as part of implementing DoD’s strategic priorities through the annual defense budget process. Policy has directly supported the issuance of Secretary-level strategy direction, defense planning guidance, analysis, and budget guidance advancing this capability.

OSD Policy, and the Department broadly, is keenly aware of and takes seriously Congressional concerns that hypersonic strike systems may raise significant strategic stability and policy questions -- for example, the possibility that a conventional submarine-launched hypersonic missile might be misinterpreted as a nuclear strike. OSD Policy will be directly involved to ensure the Department is prepared to employ such systems in a manner that addresses and minimizes any such risks. We are ensuring proper civilian and Policy oversight as the Department develops the concept of operations that will guide this capability’s use, to include weapons release authority and posture considerations. The Department is committed to continued transparency and dialogue with Congress on this going forward.

Conclusion

SENSITIVE BUT UNCLASSIFIED
Mr. Chairman, let me conclude by reiterating that strategic capabilities—nuclear, missile defense, space, and hypersonic—are essential to our national security. In an increasingly complex and threatening security environment, the United States must continue to credibly and effectively deter our adversaries, support our allies and partners, invest in modern capabilities, and enhance strategic and regional stability.
Melissa G. Dalton
Acting Assistant Secretary of Defense for Strategy, Plans, and Capabilities

Melissa Dalton is the Acting Assistant Secretary of Defense for Strategy, Plans, and Capabilities. She is responsible for advising the Secretary of Defense and other senior defense leaders on national security and defense strategy; the forces, contingency plans, and associated posture necessary to implement the defense strategy; nuclear deterrence and missile defense policy; and security cooperation plans and policies. Ms. Dalton ensures that the Department of Defense (DoD)'s program and budget decisions support and advance senior DoD leaders' strategic direction, especially as articulated in defense planning guidance.

Prior to her appointment as the Principal Deputy Assistant Secretary of Defense for Strategy, Plans, and Capabilities in January 2021, Ms. Dalton was a senior fellow and deputy director of the Center for Strategic and International Studies (CSIS) International Security Program and director of the Cooperative Defense Project. Her CSIS research focused on reinforcing the principled foundations of U.S. defense strategy and military operations. Prior to joining CSIS in 2014, Ms. Dalton served for a decade as a career civil servant in the Bush and Obama Administrations at DoD. Her assignments included senior advisor for force planning, special assistant to the Under Secretary of Defense for Policy, policy adviser to the commander of the International Security Assistance Force in Kabul, Afghanistan, and country director for Lebanon and Syria in the Office of the Under Secretary of Defense for Policy. She also served as an intelligence analyst at the Defense Intelligence Agency.

Ms. Dalton holds a B.A. in foreign affairs from the University of Virginia and an M.A. in international relations from the Johns Hopkins University School of Advanced International Studies. She is a member of the Council on Foreign Relations and was a Council on Foreign Relations International Affairs Fellow. She was appointed by Congress to serve on the Syria Study Group in 2019.
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HOUSE ARMED SERVICES COMMITTEE ON STRATEGIC FORCES

STATEMENT OF
CHARLES A. RICHARD
COMMANDER
UNITED STATES STRATEGIC COMMAND
BEFORE THE
HOUSE ARMED SERVICES COMMITTEE ON STRATEGIC FORCES
21 APRIL 2021
INTRODUCTION

United States Strategic Command (USSTRATCOM) is a global warfighting command, and as the Commander, I am privileged to lead the 150,000 Sailors, Soldiers, Airmen, Marines, Guardians, and Civilians who dedicate themselves to the Department of Defense’s highest priority mission. I thank the President, Secretary of Defense Austin, and Chairman of the Joint Chiefs Milley for their continued leadership in this vital mission area. The command is focused on and committed to the Secretary of Defense priorities to defend the nation, take care of our people, and succeed through teamwork. I also thank Congress for your continued support to ensure USSTRATCOM is equipped with the required resources necessary to achieve strategic deterrence in any situation on behalf of the nation.

USSTRATCOM enables Joint Force operations and is the combatant command responsible for Strategic Deterrence, Nuclear Operations, Nuclear Command, Control, and Communications (NC3) Enterprise Operations, Joint Electromagnetic Spectrum Operations, Global Strike, Missile Defense, Analysis and Targeting, and Missile Threat Assessment. Our mission is to deter strategic attack and employ forces as directed, to guarantee the security of the nation and assure our allies and partners. The command has three priorities. First, above all else, we will provide strategic deterrence for the nation and assurance of the same to our allies and partners. Second, if deterrence fails, we are prepared to deliver a decisive response, decisive in every possible way. Third, we will do this with a modern resilient, equipped, and trained combat-ready force. To execute our assigned responsibilities, the men and women of USSTRATCOM operate globally, as a joint force, in all warfighting domains, and with our allies and partners to address strategic challenges facing our nation.

As Congress is well aware, the past year’s pandemic challenged us in ways we never expected. Within days, the command transitioned from approximately 30 teleworking personnel
to thousands, without missing a beat. I am pleased to report USSTRATCOM remained, and continues to be fully mission capable. This is a true testament to the resilience of our workforce, our command and control (C2) systems, and the support from our base and local community.

**Peace is our profession**…continues to be the USSTRATCOM motto. It serves as an acknowledgement that the nation leads first with diplomacy as military force should be the last resort. The three dots are intentional to remind potential adversaries that if tested, the command enables the President to lead the nation from a position of strength. Fundamental to our survival as a nation is a safe, secure, and effective nuclear triad; a reliable and modern nuclear command, control, and communications (NC3) architecture; and a responsive nuclear weapons infrastructure. These elements deter adversaries from conducting nuclear and non-nuclear strategic attacks against our nation, and assure our allies and partners. As Secretary Austin testified, strategic deterrence, and within that nuclear deterrence, is the highest priority mission of the Department of Defense.

**Strategic deterrence is the foundation of our national defense policy and enables every U.S. military operation around the world.** Any individual strategic policy or capability decision made absent an understanding of the effect on the overall strategy could potentially increase the risk of deterrence failure. *If strategic deterrence fails, little else…no plan or capability, works as designed.*

USSTRATCOM will fully support ongoing reviews of strategic and nuclear policy with a goal of reducing the role of nuclear weapons in our defense strategy while adjusting to the operational implications of policy choices. Presidential and Departmental guidance defined by the National Defense Strategy (NDS), National Military Strategy (NMS), and by our nuclear policy depend on a strategic deterrent required to meet the challenges of the changing global security environment. This is not possible without stable, consistent, and on-time appropriations
and support to program modernization by Congress. Sustainment and modernization of our nuclear forces, weapons complex, and requisite NC3 capabilities has transitioned from something we should do, to something we must do. Based on current programmatic and acquisition timelines, if we find out we were wrong, decisions to divest or delay could take ten to fifteen years to recover and render the nation unable to respond to advancing threats. Any decision to delay or defer recapitalization requires us to be absolutely sure, for the next 40 years, that we won’t need that capability to deter threats, many of which we can’t predict.

OUR PEOPLE

USSTRATCOM’s military and civilian professionals are the driving force behind Strategic Deterrence. The command is committed to building a diverse and inclusive workforce with the needed skills to meet current and future security environment demands, as we pursue innovative ways to recruit and retain top talent. Workforce enhancements through internships, development and mentorship programs, academic partnerships, and our Women in Leadership program are just a few examples of ways the command attracts software, nuclear engineering, scientific, and strategy and policy skill sets into service.

USSTRATCOM works closely with world-class universities and education systems, through our Academic Alliance - a partnership of over 60 institutions. The command advocates to incorporate deterrence history and theory, allied perspectives, the importance of treaties and alliances, an understanding of capabilities, delivery systems, weapons, and C2 capabilities into curriculums. The aim is to enhance understanding of our mission and the importance of strategic deterrence while further developing the nation’s next generation of national security professionals. Together with Professional Military Education, this creates a strategic advantage necessary for interoperability across Joint and Allied forces.

Joint Force interoperability is further enhanced through USSTRATCOM’s joint exercises
and wargames. Despite the challenges posed by the pandemic, the command completed over 350 events specifically designed to produce trained and ready forces capable of operating across the spectrum of conflict. Whether done virtually or in person, exercises and wargames are critical command enablers to sustaining readiness and enhancing our ability to rapidly project national military power globally. They are also a primary mechanism in strengthening relationships with allies and partners.

**DYNAMIC STRATEGIC ENVIRONMENT**

*Strategic Competition demands we be ready for any threat, in any domain, at any time.*

*Potential adversaries are building advanced nuclear capabilities, fielding increasingly capable conventional forces, and exploiting seams below the level of armed conflict, in an attempt to gain strategic advantages in pursuit of their national objectives.* China and Russia are challenging our strength through a wide array of activities that warrant a concerted and integrated whole of government response. *For the first time in our history, the nation is on a trajectory to face two nuclear-capable, strategic peer adversaries at the same time, who must be deterred differently. We can no longer assume the risk of strategic deterrence failure in conflict will always remain low.*

This is not to say strategic competition will end in armed conflict; rather, in the event of conflict with a near-peer, nuclear-armed adversary, the risk of a strategic deterrence failure increases. We must maximize our ability to prevent strategic deterrence failure and find ways to reduce the risk of miscalculation in a crisis, by engaging all elements of national power to effectively communicate our resolve to potential adversaries. The command stands ready to support diplomatic efforts as a tool of first resort, utilizing innovative and reliable ways to deter strategic threats and set favorable conditions to shape the global environment.
China

Under a veil of secrecy, China continues to advance comprehensive military modernization programs for the People’s Liberation Army (PLA), building a robust lethal force with capabilities spanning all domains. This modernization includes nuclear weapons and forces, and supports longstanding goals to establish regional hegemony, deny U.S. power projection in the Indo-Pacific region, and supplant the United States as the security partner of choice. While China’s nuclear stockpile is currently smaller (but undergoing an unprecedented expansion) than those fielded by Russia and the United States, the size of a nation’s weapons stockpile is a crude measure of its overall strategic capability. To fully assess the China threat, it is also necessary to consider the capability of the associated delivery system, command and control, readiness, posture, doctrine and training. By these measures, China is already capable of executing any plausible nuclear employment strategy within their region and will soon be able to do so at intercontinental ranges as well. They are no longer a “lesser included case” of the pacing nuclear threat, Russia.

These capabilities bring into question China’s stated “No First Use” policy declaration and implied minimum deterrent strategy. Behind a complete lack of transparency, China is rapidly improving its strategic nuclear capability and capacity, with rapid growth in road mobile production, doubling the numbers of launchers in some ICBM brigades, deployment of solid fuel intercontinental ballistic missile (ICBM) silos on a potentially large-scale, an added air leg, and are well ahead of the pace necessary to double their nuclear stockpile by the end of the decade. This is all in keeping with Chinese President Xi Jinping’s 14th Five-Year Plan’s (2021-2025) call to “strengthen strategic forces” and “accelerate the creation of high-level strategic deterrence.”

In the very near-term China will possess a credible nuclear triad, supported by its growing stockpile and weapon systems capable of multiple independently targetable reentry vehicles
(MIRV). The PLA is developing and fielding precision strike nuclear delivery systems such as the dual use DF-26 intermediate-range ballistic missile (IRBM) and survivable road-mobile ICBMs with the CSS-10 mod 2 (DF-31A) class missile capable of striking locations within the continental United States. The CSS-20 (DF-41) became operational last year, and China has stood up at least two brigades. Enhancing the PLA Air Force’s newly reassigned nuclear mission, the redesigned H-6N is capable of carrying a nuclear capable air-launched ballistic missile (ALBM) and conducting air-to-air refueling for greater range and flexibility. China’s six, second-generation JIN-class ballistic missile submarines (SSBN) with JL-2 submarine launched ballistic missile (SLBM) provide a viable sea-based deterrent capable of maintaining continuous at-sea presence.

While China keeps the majority of its forces in a peacetime status, increasing evidence suggests China has moved a portion of its nuclear force to a Launch on Warning (LOW) posture and are adopting a limited “high alert duty” strategy. To support this, China continues to prioritize improved space-based strategic early warning, and command and control as specific nuclear force modernization goals. Their networked and integrated platform advancements will enable skip-echelon decision-making processes and greater rapid reaction. This shifting posture is particularly unsettling, considering the immature nature of Chinese strategic forces and compressed timelines needed to assess and frame a response, increasing the potential for error and miscalculation. Collectively, China’s strategic nuclear modernization expansion raises troubling concerns and complements the conventional capability growth reported by INDOPACOM and other Combatant Commands.

Their conventional and strategic initiatives across the air and missile defense, anti-surface, anti-submarine, cyber, and space increase its ability to project counter-intervention and control further from their mainland throughout the Indo-Pacific region. To deter and deny foreign
regional force projection, China is developing a range of new ballistic missile defense technologies in support of anti-access/area denial (A2AD) and tested a mid-course interceptor in February 2021. Within the last two years the PLA launched over 400 ballistic missiles (more than the rest of the world combined for non-wartime uses) to test and evaluate weapon system performance, and improve combat force effectiveness.

China recognizes the necessity of survivable command and control capabilities to more robustly support joint operations, speed of decision making, and cyber operations in modern warfare. The PLA placed a high priority on modernizing joint C2, logistics, and command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) systems in part to resemble Western-style joint C2 systems. The PLA Strategic Support Forces (SSF) are taking steps to combine and restructure cyber forces into reconnaissance, attack, and defense capabilities to better support military operations. Then, while Beijing insists that the Chinese military does not engage in cyberspying, continued theft of intellectual property translates to significant wealth losses with significant strategic implications.

My best military advice is to offer caution, observe their actions which speak louder than words, take steps to credibly deter armed conflict, and reject Chinese policies or actions that threaten the international rules-based order or undermine regional and global stability. We must remain posture to counter Chinese coercion and subversion, assure our regional allies and partners, and protect our national security interests as international law allows.

Russia

Russia continues to seek ways to enhance and reinforce its great power status through actions designed to polarize and erode U.S. leadership in international affairs. It continues to pursue a sphere of influence over and beyond its periphery and interfere with regional states’ sovereignty, especially in matters of military security and economics. Over the last decade, Russia
also focused on national preparedness through strategic civil defense readiness exercises, demonstrating interoperability between civil and military organizations through wartime scenarios.

Russia pursued a strategic partnership with China through bilateral and multi-lateral military exercises such as KAVKAZ-2020, focused primarily on improved military-to-military relations at the highest levels. Prudence dictates military planners consider and account for the complex threat environment, enabled by the strategic cooperation of these two nuclear-armed States with global military reach and shared multi-domain offensive capabilities.

Russia’s determined military and nuclear modernization campaign across its strategic triad and dual-use systems is close to completion. Over the last decade, Russia has recapitalized roughly 80 percent of its strategic nuclear forces, strengthening its overall combat potential with an imposing array of modernization efforts and novel weapons programs designed to ensure a retaliatory strike capability by all three triad legs. Upgrades incorporate new technologies into weapons systems, such as the nuclear-armed ICBM launched Avangard hypersonic glide vehicle. Other weapons programs, such as the Poseidon nuclear-powered and nuclear-armed underwater vehicle, and the Skyfall nuclear-powered and nuclear-armed cruise missile, threaten to redefine Russia’s nuclear force with asymmetric strategic weapons capabilities never before fielded. In October 2020, Russia successfully tested its multi-role Tsirkon hypersonic anti-ship missile with land attack capability. These new capabilities are specifically designed to thwart ballistic missile defenses, challenge deterrence, and target our capabilities, increasing risk to allies, partners, and the U.S. homeland.

Russia’s strategic force includes a broad range of weapons, many of which are dual use or multi-role, and can be rapidly modified to be nuclear capable. As many as 2,000 nuclear weapons are not captured by existing arms control agreements; theater and tactical nuclear weapons are
entirely outside of any treaty framework. While the extension of New START provides helpful transparency and predictability for much of Russia’s deployed strategic arsenal, a considerable level of uncertainty remains regarding the scope and disposition of Russia’s nuclear arsenal, including non-deployed nuclear weapons and its novel systems that are not accounted for under the treaty. This is troubling given a robust nuclear weapons production complex capable of producing hundreds of warheads per year, enabling Russia to increase its overall nuclear stockpile - driven primarily by projected increases in unconstrained nuclear weapons - while our production capacity remains essentially non-existent. I stand ready to offer my best military advice in support of DoD and State Department efforts to make progress on follow-on arms control agreements.

Clearly, nuclear weapons remain a critical element of Russia’s security strategy and its willingness to contemplate first-use, serves as a core strategic consideration. Russia’s 2020 nuclear deterrence policy declared it may use nuclear weapons in response to a conventional attack, if the state’s existence is threatened. A determined pursuit of non-strategic nuclear capabilities indicates a troubling readiness to rely on these weapons in a conventional overmatch situation. The aim is to deter the United States and our allies by offsetting its conventional inferiority and attempt to terminate conventional conflict on terms acceptable to Russia. Therefore, our nuclear forces must include a sufficient range of capabilities and attributes such that Russia never mistakenly perceives any advantage from using nuclear weapons at any threshold of violence.

**North Korea and Iran**

**North Korea:** North Korea remains a security challenge to the United States and our allies. It continues conducting activities that threaten regional stability and defy international norms. North Korea has tested ICBMs designed to strike the entire continental United States and
has a large inventory of theater ballistic missiles. USSTRATCOM supports DoD and State
Department efforts to coordinate with regional partners, reduce military tensions, and engage
diplomatic efforts towards achieving the complete denuclearization of North Korea.

**Iran:** Iran’s policy of arming and employing proxy forces with advanced conventional
weapons ensures it will remain a destabilizing force in the Middle East. Iran possesses the largest
ballistic missile force in the region. Robust research and development continues to extend the
range and improve performance of various ballistic missile types, several of which can range
Israel and the Gulf countries. In April 2020, Iran conducted a space launch incorporating and
testing technology interchangeable with ballistic missiles. It also continues to exceed low
enriched uranium stockpile limits and resumed enriching uranium at higher than acceptable levels.
Iran’s actions threaten global commerce, security, and stability.

**STRATEGIC DETERRENCE IN THE 21ST CENTURY**

Deterrence fundamentals against such threats have not changed. We drive to deny any
adversary their aim, or impose a cost greater than what they seek, such that the benefit of restraint
outweighs the perceived benefit of their possible action. These deterrence fundamentals apply
from gray zone activities through nuclear use. The spectrum of conflict today, however, is
*neither linear nor predictable.* We must account for the possibility of conflict leading to
conditions which could very rapidly drive an adversary to consider nuclear use as their least bad
option.

To avoid strategic deterrence failure we must reinstitute a critical forgotten lesson that
deterrence operates continuously from peacetime, through the gray zone, worldwide, across all
domains, and into conflict. It requires an integrated approach from the entire Department, across
the whole of government, and in cooperation with allies and partners. USSTRATCOM works
with the other Combatant Commands, Services, and Allies to integrate deterrence into all plans.
and operations. In 2020, USSTRATCOM executed six combined Bomber Task Force (BTF) deployments and included Allied participation in our Tier 1 Globally Integrated Exercises, giving us the best opportunity to strengthen communications, operational relationships, and overcome unforeseen issues.

SAFE, SECURE, RELIABLE AND EFFECTIVE NUCLEAR FORCE

USSTRATCOM’s requirements are based on what is needed to meet Presidential direction. As reaffirmed by every Presidential Administration over the past sixty years, a safe, secure, and effective nuclear force remains the most credible combination of capabilities to deter strategic attack. Current programs of record have been repeatedly shown to be the best way to meet those requirements.

The nation requires a fully modernized nuclear force and supporting infrastructure to ensure the solemn obligation to protect the security of the American people is upheld. Each element of our nuclear force has unique capabilities, but it is the combined attributes provided by each leg of the triad that together allow the command to execute our national security strategic guidance. I want to be clear, each piece of the triad is essential…but they are also complementary, underpinning U.S. military operations around the world.

Every Operation Plan (OPLAN) in the Department and every capability assumes that strategic deterrence will hold. Therefore, we must recapitalize the triad to ensure the Joint Force can operate when, where, and as required to defend our national interests. We have reached a point, however, where end-of-life limitations and underinvestment in our strategic deterrent and supporting infrastructure - coupled with adversaries who are modernizing and fielding increasingly capable forces - leave no remaining margin for capability replacement. We cannot continue to life-extend our leftover Cold War era weapons and systems indefinitely, and successfully prevail in strategic competition - their credibility will be questioned. I stand ready
to offer my best military advice to support Secretary Austin in accomplishing strategic and policy objectives, to ensure strategic reviews on sustainment and modernization are well informed of the impacts to strategic deterrence and stability.

LAND-BASED TRIAD COMPONENT

The nation’s ICBM force is and remains the most responsive leg of the triad. ICBM geographic dispersion presents an intractable targeting problem, complicating adversary strategies. For example, without U.S. ICBMs China becomes a strategic nuclear peer. These missiles are capable of holding a wide range of targets, to include emergent and time sensitive targets, at risk. They are survivable to all but a massive nuclear exchange. They are also the least expensive to maintain and possess the highest day-to-day readiness.

Requirement for Minuteman III (MM III) Sustainment

The MM III continues to provide a highly reliable and secure deterrent capability. While Minuteman has successfully served our nation since 1962, delaying needed modernization for the past 20 years resulted in aging components, asset attrition, and declining infrastructure requiring a comprehensive weapon system replacement.

Air Force analysis concluded another life extension would be more costly than recapitalization and would not address future technical challenges and threats. USSTRATCOM supports ongoing sustainment programs necessary to keep the MM III viable and effective until its replacement, the Ground Based Strategic Deterrent (GBSD), begins fielding in 2028 and reaches full operational capability in 2036.

Requirement for Ground Based Strategic Deterrent

USSTRATCOM is confident GBSD will meet requirements, reduce sustainment costs, and maximize day-to-day readiness. It is the best approach to ensure the most responsive leg of the triad remains reliable and credible in response to the evolving strategic environment. During a
recent visit to the GBSD Program Office, I was impressed with the Air Force’s pursuit of innovative development approaches to deploy GBSD on time, as it remains a USSTRATCOM priority.

AIR-BASED TRIAD COMPONENT

Bombers are among the most flexible, visible, and versatile leg of our nation's delivery platforms. Bombers offer both nuclear and conventional deterrence and employment options, enhancing force availability and execution. As demonstrated by successful BTF missions, this stabilizing capability provides a wide variety of deterrence options to the President, signals unwavering resolve to our adversaries, and assures the nation’s allies and partners.

Over the past year, USSTRATCOM utilized BTF missions as the iconic example of Dynamic Force Employment. In doing so, we dramatically increased the operational readiness of the crews, improved integration with the Joint Force, Allies and partners, practiced procedures for nuclear weapons and supporting infrastructure employment, and regularly exercised our NC3 enterprise. Full funding for these strategic aircraft, and associated weapons and communications systems is imperative, as many approach or are beyond their planned service life.

Requirement for B-52 and B-2 Sustainment

B52: The B-52H is a 60-year-old platform, projected to remain in service for another three decades. To address both maintenance and operational challenges, it must undergo critical modernization upgrades in response to evolving threats. Its 1960s-era TF-33 engines are scheduled for upgrade through the Commercial Engine Replacement Program (CERP), enabling longer unrefueled range while eliminating parts obsolescence issues plaguing the current engines. The B-52 Radar Modernization Program (RMP) will replace its increasingly inoperative, legacy radar with a digital phased array system to allow continued operations in GPS denied environments. Modernized NC3 systems are also critical to B-52 operations to ensure
communications continuity. Both RMP and NC3 upgrades require continued support and funding to remain on schedule.

**B-2:** The B-2 provides unmatched capability as the only heavy-payload, penetrating stealth bomber in the world able to hold at risk heavily defended, hard, and deeply buried targets. These unique attributes require the execution of planned sustainment programs to ensure survivability, reliability, and mission effectiveness until the B-21 is fielded. Ongoing sustainment activities include planned communication upgrades and low-observable maintenance. In particular, the Air Force must accelerate integration with advanced enabling capabilities to support the B-2 in denied environments.

**Requirement for B-21**

The B-21 Raider will be the future bomber force. When fielded, the B-21 will provide warfighters with increased survivability and flexibility to attack high-value strategic targets worldwide. The Raider will deliver both nuclear and conventional weapons in support of national objectives. It is critical this major recapitalization effort remains on schedule and on budget to prevent operational shortfalls within the bomber force structure.

**Long Range Standoff (LRSO) and B61-12**

The air-delivered nuclear weapon portfolio enables deterrence of strategic attack via our bomber force. Currently composed of the Air Launched Cruise Missile (ALCM), the B83 gravity bomb, and the B61 family of weapons, this portfolio provides both standoff and direct attack munitions to meet operational requirements. Continued monitoring and stockpile surveillance is necessary to ensure these weapons remain reliable until replaced.

**LRSO:** The LRSO missile will replace ALCM as the nation’s only air-delivered nuclear cruise missile. I want to be clear, this capability must be protected as it is vital to USSTRATCOM’s ability meet mission requirements. I view LRSO as the most cost-effective
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approach to ensure a credible and effective triad. It offers the best opportunity to hedge against operational risks in the event other triad modernization efforts are delayed. It will penetrate and survive against advanced air defense systems to which its predecessor, the ALCM, is losing ground. When fielded it will outpace threat technologies, enhance deterrence and assurance, and achieve a wide array of targeting objectives for the foreseeable future. LRSO allows a single bomber to cover larger geographic areas which would otherwise require additional B-21 bombers, KC-46 tankers, B61 gravity bombs, and decades of supporting infrastructure. Eliminating this critical capability would require additional land and sea based ballistic missiles to hold required targets at risk. A calculated yet rapid transition from ALCM to LRSO is planned to optimize deterrence, service life, and the capabilities of both weapons.

Tanker Requirements

All bomber missions require a robust and reliable tanker force. The KC-46 is planned to replace a portion of the aging KC-135 fleet in the coming years. Despite fielding delays USSTRATCOM strongly supports ongoing Air Force efforts to correct and mitigate manufacturing and technical deficiencies, and efforts to modernize and recapitalize the entire tanker force in response to mission needs.

SEA-BASED TRIAD COMPONENT

The nuclear-powered ballistic missile submarine (SSBN) is the nation’s most survivable and enduring nuclear strike platform. The SSBN contributes to deterrence and assurance messaging through partial or full generation of our fleet. With the intercontinental range Trident II D5 missile, our SSBNs patrol the world’s oceans virtually undetected, providing an assured response capability in any scenario. This assured second-strike capability address deterrence gaps in ways unique from other legs of the triad. When paired with its survivability, this crucial capability gives the President significant latitude for response options.
Requirement for COLUMBIA-class SSBN

The OHIO-class SSBN cannot be further extended and will begin retiring from service in just six years. This submarine class has already been extended to an unprecedented 42 years (no individual U.S. Navy submarine has been in service longer than 37 years) and will continue to face sustainment and readiness challenges until it is replaced by the COLUMBIA-class SSBNs. While the command could use more, procurement analysis determined at least 12 COLUMBIA-class SSBNs are absolutely required. This minimum capability allows USSTRATCOM to meet our at-sea requirement during the most limiting maintenance intensive times throughout its service life. On-time delivery of the COLUMBIA-class SSBN remains the Navy’s number one shipbuilding priority.

Requirement for Trident Sustainment and Modernization

Given the importance of an uninterrupted sea-based strategic deterrent, investment in the future SSBN Strategic Weapon System (SWS) is vital. The Trident II D5 weapon system has been life extended (D5LE) to support the remaining years of the OHIO-class SSBN and enable deployment on the first COLUMBIA-class hulls. A second D5 life extension (D5LE2) ensures continued sea-based strategic deterrence through the 2080s. D5LE2 will utilize reliable high performing design elements and components from the first life extension, to mitigate cost and technical risks.

SLCM-N

To enhance flexibility and diversity of our nuclear forces, USSTRATCOM supported the reintroduction of a modern nuclear sea-launched cruise missile (SLCM-N) to address regional deterrence challenges from Russian and Chinese nuclear capability advancements. The SLCM-N complements the low-yield SLBM to provide assurance to our allies through tailored response options in vast operating areas where forward basing may not be possible. Limited and graduated
U.S. response options, such as SLCM-N and low-yield SLBM, provide a more credible deterrent to limited attack against the United States and our allies and partners than relying primarily on the threat of large-scale nuclear responses. Without this capability adversaries may perceive an advantage at lower levels of conflict that may encourage limited nuclear use. An analysis of alternatives (AOA) is underway for SLCM-N. I anticipate that this AOA will inform discussions in the context of an anticipated new posture review.

**Integrated Undersea Surveillance System (IUSS)**

To ensure the viability of our current and future SSBNs, it is imperative to address security threats in the undersea domain. Advancement in Russian submarine stealth and detection necessitates continued Integrated Undersea Surveillance System (IUSS) recapitalization efforts. This capability is vital to maintaining advantages in the undersea domain, ensure survivability of our sea-based strategic deterrent, and protection of the homeland.

**NUCLEAR COMMAND, CONTROL, AND COMMUNICATIONS (NC3)**

NC3 is the critical link required to provide assured communications between the President and the forces. In 2018, the Secretary of Defense consolidated and delegated lead NC3 responsibility to the Commander, USSTRATCOM. As the NC3 Enterprise Lead, I execute increased authority for operations, requirements, systems engineering, and integration oversight through the NC3 Enterprise Center (NEC). The NEC, operating as a separate but aligned organization, oversees and manages NC3 to ensure mission readiness through data-driven, risk-informed operations, while propelling accelerated development and delivery of a threat-informed “next generation” NC3 enterprise.

Substantial progress has been made in the two years following designation, in what has been a team effort across the entire Department. Specifically, the NEC improved the ability to ensure NC3 supports the nation’s Nuclear Command and Control (NC2) at any time, by
improving operational reporting and building a culture of readiness. The team laid the
groundwork for the future enterprise by directing investments in NC3 programs and cyber
defense, creating an engineering framework for designing and testing new architectures, engaging
industry on best practices and technology, and advancing a broad intelligence community focus.

The enterprise focus for the coming year remains on sustaining readiness while pursuing
the next generation of NC3 by capitalizing on integrating concepts, revolutionary changes in
technology, innovative practices, and cyber resilient and protected capabilities.

**Strategy to Modernize NC3**

The NEC is developing the next generation NC3 system by executing a multi-pronged
strategy approach, organized by four vectors. The first focuses on programs of record
encompassing budget and acquisition lifecycle processes to deliver, modernize, and sustain future
core capabilities. The second assesses demonstrations, experiments, and tests aimed at enhancing
discovery and development of innovative technology approaches, to transform existing NC3
programs and operations. The third reviews and revises policies, postures, Tactics, Techniques
and Procedures (TTPs) to streamline enterprise guidance and efficiently achieve operational
outcomes. The fourth expands the use of critical technology enablers such as artificial
intelligence, digital engineering, and modeling and simulation.

It is important to understand NC3 modernization is not a product or a “thing” with a long
service life like a delivery platform or warhead - rather it is a process of rapid continuous,
incremental network capability improvements. The first evolution is referred to as “NC3 Next
Generation Increment 1” and represents currently funded programs of record. This first increment
improves our posture in space, improves hardness to emerging cyber and cryptographic threats,
shifts our dependency on unsustainable legacy systems, and increases resilience by enabling
dynamically reconfigurable architecture.
Survivable NC3 Legacy Modernization

USSTRATCOM and the NEC are aligned with the Services to modernize our survivable legacy NC3 systems integrated with our aging airborne C2 platforms such as the E-4B National Airborne Operations Center (NAOC) and E-6B Airborne Command Post (LOOKING GLASS)/Take Charge and Move Out (TACAMO) aircraft. Other efforts include our space-based protected satellite communication (SATCOM) capabilities such as Advanced Extremely High Frequency (AEHF) that provides survivable communications for Presidential voice conferencing and nuclear force direction.

Upgrading Very Low Frequency (VLF) and Low Frequency (LF) survivable communications is also necessary to provide extended range, greater protection, and more rapid transmission times in response to emerging adversarial threats. Current efforts seek to modernize and transform traditional VLF/LF systems to state-of-the-art capabilities which are interoperable across Service lines and infuse improved protection features for tactical and strategic applications. The challenge is rapidly incorporating VLF/LF architecture enhancements to ensure robust and layered communication services from the President to fielded forces during all phases of conflict.

NC3 Cybersecurity

I want to be clear, I am confident in today’s NC3 enterprise cybersecurity posture and resilience. However, as recent events demonstrate, the adversary continues to seek new avenues of attack on our nation’s critical infrastructure. USSTRATCOM is aligned with USCYBERCOM, USSPACECOM, NSA, and the Service components to respond to and operate through adverse cyber conditions. We are taking actions to enhance cybersecurity resilience for systems under development by adopting advanced technologies and best practices, and designing in cyber protections from the start. This forward facing cyber protection approach enables persistent defense throughout the lifecycle of these systems.
Cybersecurity must be a prioritized investment to ensure ongoing modernization initiatives remain operationally relevant. When cyber protections are complemented with dedicated enterprise-level sensing and monitoring capabilities, they provide a holistic cybersecurity posture enabling timely, data-driven responses to emerging threats.

NUCLEAR WEAPONS AND SUPPORTING INFRASTRUCTURE

I look forward to working with the Department of Energy (DOE) and National Nuclear Security Administration (NNSA) to ensure our weapons complex and supporting infrastructure remains viable into the future. Although safe, secure, reliable, and effective today the nuclear weapons stockpile and supporting infrastructure are rapidly aging into obsolescence. Today the majority of our weapons exceed or will soon reach their planned retirement dates. Projected modernization efforts provide a path to maintain a reliable and effective force, but are not expected to complete until well into the 2040s. Failure to execute these programs will continue to transfer programmatic risk to the DoD as operational risk to fielded forces, adding to the risk the nation already faces. If this trend is not reversed, I am concerned the command will be unable to meet national-level policy objectives.

Infrastructure Improvements

Stockpile modernization depends on the Nuclear Security Enterprise (NSE) infrastructure. Annual budget deliberations increasingly elevate concerns about the ability of the NNSA to meet the nation’s nuclear force requirements. After the closure of the Rocky Flats Plutonium pit fabrication facility in the early 1990s, the nation no longer had the capability to produce key components, turning instead to limited warhead refurbishments to sustain the stockpile. As a result, component and materials manufacturing needed to produce new nuclear weapons effectively stopped and much of the infrastructure atrophied. Then, shifting budget priorities over the past 30 years delayed needed weapons and infrastructure modernization programs,
contributing to erosion of critical nuclear force capabilities and capacities. Today’s NSE infrastructure, which the command relies on to sustain strategic deterrence, continues to decline and requires investments for sustainment and immediate modernization. Facility condition, loss of key capabilities, and constrained capacities also limit the NNSA’s timely response to unforeseen technical, geopolitical, programmatic, or operational developments. As such, the NNSA is now challenged to simultaneously complete one limited refurbishment (B61-12 LEP) and one maintenance activity (W88 Alteration). This is concerning as recapitalizing the remaining force will require the capacity to concurrently execute up to four modernization programs to meet operational requirements.

Progress has been made with close NNSA collaboration and budget transparency, but much of the damage to the infrastructure and personnel has already been done. As a result, many of the modernization and sustainment efforts (which typically require 10-15 years to execute) have zero remaining schedule margin and some are already late-to-need. *If the nation does not continue to address these concerns, no amount of money will be able to adequately mitigate operational risks associated with key stockpile and infrastructure capability losses.* Long lead times needed to field modern replacement infrastructure require continued investments in future and enduring facilities and capabilities.

Today’s nuclear complex relies on single production points and vendor sources, putting at risk our plutonium and uranium processing, high explosives manufacturing, and production of radiation hardened electronics. This provides few to no alternatives in the event of an unplanned production facility or vendor shutdown. In such an event, recovery of those production efforts could take many years.

Plutonium pit production is the biggest stockpile modernization issue - pits have not been produced at scale since Rocky Flats ceased production in 1989. As a point of comparison, our
adversaries produce new pits in modern facilities at a rate many times greater than 80 per year; while most of our stockpile depends on pits that are, on average, over 50 years old and well past their design life. Accurately predicting aging plutonium performance with today’s facilities and modeling capabilities is limited at best. We cannot study our way out of this problem. If we fail to recapitalize plutonium pit production now, we risk catastrophic failures given an infrastructure incapable of responding in a timely manner. Bottom line, re-establishing plutonium pit production is a “must do” and is foundational to stockpile modernization.

Additionally, while uranium component processing limitations are being remedied by the Uranium Processing Facility (UPF) project, we must also address facilities needed for manufacturing uranium components and radiation cases, producing lithium, and manufacturing trusted non-nuclear components.

**Updated Stockpile Strategy**

I applaud NNSA’s initiatives to execute programs of record and W76 modification efforts. Their investment in advanced diagnostics, and key research and development activities reduce operational risks resulting from technical issues. Most warheads in today’s stockpile are now scheduled to remain in service well beyond original design lives, thanks to engineering feats, ingenuity, and NNSA stewardship.

USSTRATCOM appreciates Congressional actions to fund NNSA’s Fiscal Year 2021 Stockpile Management and Production Modernization programs (fully funding B61-12 life extension, W88 alteration, W80-4 life extension, W87-1 modernization, and W93 development). I specifically want to emphasize the importance of the W93 warhead modernization program. While the command could use it earlier, the W93 is a “just-in-time” development program to mitigate risk to the triad’s sea leg. USSTRATCOM identified operational requirements including a modern warhead with reduced mass properties that improves operational flexibility and enables
more efficient loading on COLUMBIA with fewer numbers of missile tubes. Currently fielded SLBM warheads will begin to simultaneously age-out in the late 2030s, putting the DoD and NNSA in a position of having to modernize the entire SLBM warhead stockpile at the same time. To avoid this convergence, starting the W93 program now is key to maintaining our sea leg capabilities. It is also vital to our long-standing cooperative relationship with the United Kingdom.

NUCLEAR WEAPONS SAFETY AND SECURITY

MH-139A Helicopter

I appreciate Air Force efforts to deliver the MH-139A Grey Wolf. With support from Congress, the Air Force is poised to replace the existing UH-1N helicopter fleet with improved speed, range, endurance, and payload capabilities to ensure safe convoy escort and Emergency Security Response to the ICBM force.

Counter-unmanned Aircraft System

Rapid proliferation and growing technological sophistication of small unmanned aircraft systems (sUAS) are an increasing threat to the nation’s nuclear enterprise. Technology trends easily transform sUAS into increasingly capable weapons in the hands of state and non-state actors, and criminals with hostile intent. The Department continues to field counter-sUAS capabilities and are refining tactics, techniques, and procedures to address this developing threat.

GLOBAL STRIKE

Hypersonic weapons show promise to be the conventional complement the nuclear force needs to continue deterring adversaries and offers an opportunity to take further steps to reduce the number of nuclear weapons in our national security strategy. Developing and fielding hypersonic weapons has long been a USSTRATCOM requirement and a Department priority.
Conventional hypersonic weapons will fill an important role by providing options to hold high-value, time-sensitive and other targets at risk without crossing the nuclear threshold. They will enable responsive long-range, conventional strike options against distant and defended threats when other forces are unavailable, denied access, or not preferred.

Programs such as the Army Long Range Hypersonic Weapon (LRHW), Navy Conventional Prompt Strike (CPS), the Air Force Air-launched Rapid Response Weapon (ARRW), and the complementary intelligence, surveillance, and reconnaissance (ISR) field a family of hypersonic weapon systems in the early-to-mid 2020s. I am pleased with the progress to field a capability in the near-term and encourage continued commitment to accelerate production and fielding.

USSTRATCOM is prepared to command and control conventional hypersonic weapons immediately at initial operational capability. We will leverage existing planning organizations to integrate and synchronize hypersonic capabilities with other joint fires across all domains. Maturing concepts of operation, mission planning, and other system enablers are underway to ensure this transformational warfighting capability supports the NDS.

**MISSILE DEFENSE**

Missile defense endures as a critical component for comprehensive strategic and tailored regional deterrence. USSTRATCOM executes its responsibilities for coordinating global missile defense planning and operations support, including advocacy for capabilities and enhancements, and joint training and education in coordination with other Combatant Commands, Services, and Agencies. While current capabilities provide defense of the homeland against a rogue ballistic missile threat, a concerted effort and commitment is required to expand and improve existing capabilities for both homeland and regional missile defense. Potential adversaries continue to improve threat system capabilities and capacities, blurring missile defense operations across
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traditional regional boundaries. Mitigating trans-regional threats with increased range and lethality requires more than just active missile defense. Navigating this environment requires a broad approach and renewed emphasis on leveraging opportunities to negate missile threats prior to launch, during all phases of flight, and after impact.

Challenges remain in the Department’s efforts to integrate limited defense resources and architectures for allied and partner interoperability. These critical assets protect against missile attacks on deployed U.S. forces, preserve freedom of action by countering adversary anti-access/area denial tactics, and assists allies and partners to better defend themselves through traditional and asymmetric means. USSTRATCOM’s NIMBLE TITAN wargame with participants from 24 countries and three international organizations, continues to advance multinational collaboration and operational integration efforts aimed at enhancing deterrence and defense concepts against potential attack.

NEW MISSILE WARNING FRAMEWORK AND REQUIREMENTS

Two essential elements of strategic deterrence are detection (early warning of ballistic and advanced missile threats) and integrated global planning. We are challenged to fully achieve these with current or planned terrestrial-based radar architectures alone due to geographic constraints and characteristics of future missile threats. Advanced Russian platforms challenge our sensor networks and are designed to operate without regard for the boundaries between U.S. combatant command areas of responsibilities. Therefore, it is essential to move beyond regional approaches to addressing adversaries and challenges that are increasingly global in nature.

The command in coordination with USSPACECOM, USNORTHCOM, and the Services continues to examine, evolve, and exploit advanced technical and operational concepts, and break down institutional barriers inhibiting information flow. The command is focused on increasing decision space through a resilient joint all-domain architecture capable of correlating data from
any sensor and using the best C2 system to employ the best-positioned shooter. This highly
distributed and resilient architecture leveraging future space-based sensors, may be able to
provide end-to-end detection, tracking, and discrimination of hypersonic glide vehicle, cruise and
ballistic missile threats globally.

Layered Missile Defense

I applaud Congress’s continued support for active defense capabilities to pace the threat
and exploration of new capabilities like the Hypersonic Glide Phase Interceptor, high energy
laser, and other directed energy technologies. As the Department pursues development of
complements to existing Ground-based Interceptor (GBI) capabilities, work continues using
novel, cost effective options to counter the ICBM threat. The intercept of an ICBM by an Aegis
ship utilizing the SM-3 Blk IIA missile in November 2020 highlights one opportunity to
recapitalize existing technology. Additional examples include integrating existing sensors for
tracking ballistic, hypersonic, unmanned aerial systems, and cruise missile threats.

Missile Defense Review – Progress

In accordance with the 2019 Missile Defense Review (MDR) the Department updated
policies, responsibilities, and procedures for missile defense research, development, test and
evaluation, procurement, operations, and sustainment. USSTRATCOM, working with the
community of interest re-wrote the Warfighter Involvement Process (WIP) to incorporate MDR
findings. Revisions align with the Department’s budget process to maximize warfighter input to
capability development and acquisitions, and seek timely delivery of missile defense capabilities.
USSTRATCOM will continue to advocate for missile defense requirements through capability
and utility assessments, and ensure operational tests and evaluations meet warfighter demands.

Joint Electromagnetic Spectrum Operations

USSTRATCOM’s responsibility for Joint Electromagnetic Spectrum Operations (JEMSO)
includes advocacy for electromagnetic warfare capabilities, contingency support, and joint planning and training for electromagnetic spectrum (EMS) operations. The Spectrum is an infinite battleground enabling all warfighting domains and functions. Adversaries like China and Russia have observed our use of and dependence on the EMS, and seek to challenge us by investing heavily in counter radar, navigation, communications, and data link technologies to erode our advantages. To counter this threat, the United States must regain technological advantages for our EMS systems and execute capabilities through dedicated organizational elements.

USSTRATCOM coordinated with the Secretary of Defense’s Electromagnetic Spectrum Operations (EMSO) Cross Functional Team, in developing the EMS Superiority Strategy Implementation Plan to “Establish Effective EMS Governance.” We are actively engaged to strengthen support and build an EMSO proponent organization for the Department. Efforts include establishing JEMSO Cells at Combatant Commands, creating an electromagnetic battle management (EMBM) system, and integrating fused data into the EMBM through a DoD enterprise database. The Joint Electromagnetic Warfare Center (JEWC) at USSTRATCOM established the first-ever Information Analysis and Fusion capability necessary to provide specific data for combatant command operational JEMSO cells to conduct battle management in spectrum operations. Continued Congressional support and sustained investments are critical to these initiatives.

CONCLUSION

As a global warfighting command, USSTRATCOM integrates strategy and capabilities to achieve strategic deterrence in today’s dynamic threat environment. The command will continue to pursue success using globally integrated plans and operations within the Department, the whole of government, and with our allies and partners. I look forward to working with Secretary Austin
to continue to maintain a safe, secure and reliable nuclear force into the future, and to ensure we strengthen strategic stability.

USSTRATCOM is home to the majority of the Department’s Strategic Deterrence workforce intellectual capital. These professionals are dedicated to our national defense and we must continue to foster and grow this resource. With continued Congressional support and stable funding, USSTRATCOM will continue pacing the growing threats and develop the future force needed to execute the Department’s top priority mission.

Efforts to sustain and modernize deterrent forces must continue. Our strategic forces underpin every military operation around the world, and we cannot afford to delay given the increasing threats facing our nation. Today, we are at a tipping point where the cost of modernizing our strategic forces is negligible compared to the cost we will likely incur if our triad and supporting infrastructure are allowed to age-out completely. Strategic force modernization is an every-other-generation responsibility…today is our generation’s turn to lead.
Admiral Charles A. Richard  
Commander, USSTRATCOM

Admiral Chas Richard is a native of Decatur, Alabama and graduated with honors from the University of Alabama in 1982. He earned master's degrees with honors from the Catholic University of America and the Naval War College.

His most recent assignment was Commander, Submarine Forces in Norfolk, Virginia. Other flag assignments include Deputy Commander, U.S. Strategic Command, Director of Undersea Warfare (OPNAV N97) at the Pentagon, Deputy Commander of Joint Functional Component Command for Global Strike at U.S. Strategic Command, and command of Submarine Group 10 in Kings Bay, Georgia.

His operational assignments include command of USS Parche (SSN 683) as well as Submarine NR-1, then the U.S. Navy’s only nuclear-powered, deep-submergence submarine. He also served aboard USS Portsmouth (SSN 707), USS Asheville (SSN 758) and USS Scranton (SSN 756).

Admiral Richard’s staff assignments include service as the executive assistant and naval aide to the Under Secretary of the Navy; chief of staff, Submarine Force Atlantic; and command of Submarine Squadron (SUBRON) 17 in Bangor, Washington. Other staff assignments include director of resources on the staff of the Under Secretary of Defense (Policy); squadron engineer on the staff of SUBRON-8 and duty on the Deputy Chief of Naval Operations (Submarine Warfare) staff. He has also served as a member of Chief of Naval Operations’ Strategic Studies Group XXVIII, studying the integration of unmanned systems into naval force structure.

Admiral Richard assumed his current duties in November 2019. As Commander, U.S. Strategic Command, he is responsible for one of 11 Unified Commands under the Department of Defense. USSTRATCOM is responsible for the global command and control of U.S. strategic forces to meet decisive national security objectives, providing a broad range of strategic capabilities and options for the President and Secretary of Defense.

(Current as of November 2019)
UNITED STATES SPACE COMMAND

PRESENTATION TO THE
SUBCOMMITTEE ON STRATEGIC FORCES
HOUSE ARMED SERVICES COMMITTEE
U.S. HOUSE OF REPRESENTATIVES

SUBJECT: Fiscal Year 2022 Priorities and Posture of the United States Space Command

STATEMENT OF: General James H. Dickinson
Commander, United States Space Command

April 21, 2021
Introduction

The establishment of United States Space Command (USSPACECOM) as the Combatant Command solely focused on protecting and defending U.S. space operations and the American way of life demonstrates the priority America places on space. Our mission is to assure the delivery of space-based services to the nation, our allies and global security partners, and warfighting superiority for conflict extending to space. An incredibly talented Joint Force and interagency team operating around the world accomplishes this unique and critical task. I am honored and thankful to the President, Secretary of Defense, and the Chairman, Joint Chiefs of Staff for entrusting me with leading this team of warfighters. I am also thankful for the unwavering support of Congress in providing the USSPACECOM team with the necessary resources for this critical mission.

President Biden described his priorities in the March 2021 Interim National Security Strategic Guidance, including defending the underlying sources of American strength and promoting a favorable distribution of power to deter adversaries. I have outlined my key tasks to support the Interim National Security Strategic Guidance and accomplish the USSPACECOM mission in my Commander’s Strategic Vision. As always, underpinning this vision is our focus on caring for our most important asset – our people and their families. Our command attracts the best and brightest across the Department of Defense, intelligence community, and civil society, resulting in a dynamic and diverse team of space professionals. In fact, during International Women’s month we featured many of the amazing women of USSPACECOM—both military and civilian, including operations leaders, division chiefs, senior enlisted leaders, and many other key roles. The diversity in our ranks is one of our greatest strengths. Our people will advance our critical mission through innovative approaches to accomplishing those key tasks, which include:
(1) understanding our competition; (2) building the command to compete and win; (3) maintaining key relationships; (4) maintaining digital superiority; and (5) integrating commercial and interagency organizations. With our focus on these priorities, we will achieve our end state goal of a team of warfighters who outthink and outmaneuver our adversaries and enemies, and if necessary, win through space combat power—so that there is never a day without space.

The U.S. must respond to a rapidly changing space security environment

The American way of life depends on reliable access to the space-based capabilities that provide the foundation of our economic security and enable our Joint Force to conduct sustained military operations in all domains. Every lever of national power in the new Joint Doctrine Note 1-18 “MIDFIELD” model—Military, Informational, Diplomatic, Financial, Intelligence, Economic, Law, and Development—is reliant upon space-based capabilities. Every element of our Joint Warfighting Concept as executed through Joint, All-Domain Operations is dependent on space-based capabilities. The ever-increasing challenge posed by adversaries against those capabilities led to the necessary creation of USSPACECOM and the United States Space Force. We must continue to grow the capabilities of these new organizations charged with protecting and defending our interests in space.

This extensive reliance on space creates potential vulnerabilities that competitors and adversaries actively seek to exploit. These adversaries and competitors are increasing their capabilities in space by developing and demonstrating counter-space systems, and, similar to what we have seen in the other domains, by engaging in deliberately provocative behavior to advance their plans to gain control of space. To safeguard our national interests at home and abroad and to support a rules-based international order, the U.S., along with our allies and partners, must promote and protect the peaceful and responsible use of space.
Understanding our Competition

The number one priority for the Command is to understand our competition, which relies on a deep understanding of the space environment. To achieve this, we prioritize space domain awareness, which encompasses tracking, identifying, and characterizing objects in space in a way that enables real-time understanding of potentially threatening activities. Through this perception of activities that affect our domain, we can better protect and defend our assets when there may be only minutes to act. This is our highest priority and we need Congress’s continued support to achieve comprehensive space domain awareness.

China desires to use space to supplant the U.S. as a global economic and military leader

Over the past two decades, an increasingly assertive China and a resurgent Russia worked to develop advanced technologies to erode core U.S. military advantages, such as power projection and rapid, global, space-enabled precision fires. Their militaries actively integrate advanced space and counterspace technologies into multi-domain warfighting strategies to challenge U.S. regional superiority, position themselves as space powers, and create improved balance of power dynamics in their near abroad. Both countries reorganized their militaries to develop deeper competency in technical military fields such as electronic warfare, cyberspace and space operations. China and Russia each weaponized space to deter and counter U.S. and allied intervention and military effectiveness in future conflicts. Today, space is a warfighting domain not because we desired it to be; it is a warfighting domain because our competitors made it so.

The Pacing Threat -- China

China poses a major security challenge and remains a long-term strategic competitor to the United States. Beijing views the international environment and China's relationship with
Washington as increasingly adversarial. China continues its decades-long military modernization campaign in order to build what it terms a "world-class military." Chinese leaders characterize China's long-term military modernization program as essential to achieving great-power status. People’s Liberation Army (PLA) modernization focuses on developing and fielding advanced military capabilities in all warfighting domains – emphasizing long-range precision strike, cyberspace, electronic warfare, space, counterspace, and a modern, effective nuclear deterrent while restructuring the PLA into a combat-capable global joint force. Looking forward, an increasingly capable and lethal Chinese joint force will almost certainly be able to hold U.S. and allied forces at risk at greater distances from the Chinese mainland.

China developed robust and capable space services, including space-based intelligence, surveillance, and reconnaissance (ISR). Moreover, they are making improvements to existing systems, including space launch vehicles and satellite navigation constellations. Their current Beidou navigation system is now globally operational. These capabilities may mask potential military activities and may be considered dual-use in nature. Operated collectively, these capabilities provide their military with the ability to globally command and control their forces, enhance their situational awareness, as well as enable them to monitor, track, and target adversary forces. Today China's ISR satellites are capable of providing electro-optical and synthetic aperture radar imagery, as well as electronic intelligence and signals intelligence data. Beijing has a goal of becoming a broad based, fully capable space power. China's rapidly growing space program is second only to the United States in the number of operational satellites.

Beijing actively seeks space superiority through space and space attack systems. One notable object is the Shijian-17, a Chinese satellite with a robotic arm. Space-based robotic arm
technology could be used in a future system for grappling other satellites. China also has multiple ground-based laser systems of varying power levels that could blind or damage satellite systems. China is developing a broad complement of jamming and cyberspace capabilities, directed energy weapons, on-orbit capabilities, and ground-based antisatellite missiles that can achieve a range of effects. China will attempt to hold U.S. space assets at risk while using its own space capabilities to support its military objectives and overall national security goals.

Russia seeks to degrade U.S. space capabilities in order to prevail in future conflicts

The Russian military remains an existential threat to the United States and a potent tool designed to maintain Russia’s influence over the states along its periphery. Russia sees space as integral to winning modern wars and reorganized their Aerospace Force in 2015 to incorporate space operations and counterspace capabilities. Russia views its space program as a longstanding example of its leadership on the international stage. Moscow concluded that gaining and maintaining supremacy in space has a decisive impact on the outcome of future conflicts and is developing space attack systems to hold U.S. and allied space assets at risk.

Russia considers U.S. dependency on space to enable military power projection as a vulnerability it can exploit in a conflict. Concurrently, Russia pursues counterspace weapon systems that can deny, damage, and defeat U.S. space-based systems in order to reduce U.S. military effectiveness and control conflict escalation if deterrence fails. Russia is also developing and testing space-based and direct ascent anti-satellite weapon systems.

The Nudol is a Russian mobile ground-based missile designed to destroy satellites in low Earth orbit. Additionally and already on orbit are COSMOS 2504 and COSMOS 2536, prototype Russian antisatellite weapons that could kinetically destroy satellites in low Earth orbit. Russia
also has several ground based low-power lasers designed to temporarily blind U.S. missile warning and imagery satellites, and high-power lasers developed to damage U.S. satellites.

In 2020, Russia conducted several counter-space weapon systems tests while also exhibiting unsafe and irresponsible maneuvers on orbit. It tested an improved, highly survivable ground-based anti-satellite missile system, and a space-based weapon system that released a projectile designed to target other satellites on orbit. Both weapon systems could damage or destroy a satellite, creating a cloud of debris that would endanger every space-faring nation’s satellites, to include the International Space Station. Such activities are inconsistent with the safe and peaceful use of space. Meanwhile, Russia continues to update and modernize terrestrial alternatives to space systems, creating asymmetries that could enable them to hold U.S. space-based capabilities at risk.

**Iran and North Korea continue to develop and expand their counter-space capabilities**

Iran and North Korea continue to advance their own counter-space threats through cyberattacks, jamming, and electronic warfare. Having closely observed our ability to harness the advantages from space, Iran and North Korea actively seek asymmetric approaches to negate our power projection capabilities.

Iran recognizes the strategic value of space and counterspace capabilities. Tehran claims to have developed sophisticated capabilities, including space launch vehicles and communication and remote sensing satellites. Iran’s simple space launch vehicles are currently only able to launch microsatellites into low Earth orbit. Iran proclaimed the April 2020 launch of the NOUR-01 satellite to be a “start of the formation of a global power.” While Iran claims the NOUR-01 has imaging capabilities, our persistent observation efforts prove that it is actually non-operational, tumbling through space, and unlikely to provide any useful intelligence. However,
Iran is using improvements in the missile launch technology used to put the NOUR-01 satellite on orbit to develop longer-range, more accurate strike weapons. Iran’s counterspace capabilities have centered around jamming satellite communications and global positioning system (GPS), and Iran is reportedly making advancements in these areas.

North Korea also maintains a threat to space operations through its electronic warfare capabilities, with an emphasis on deception operations and GPS jamming. The technology to evolve and mature their cyberattack capabilities continues to improve, along with their ability to develop more advanced long-range missile launch systems.

One way that these less developed adversaries seek to leapfrog or negate our advantages is by leveraging commercially available capabilities. These capabilities provide them with partially effective military support that helps them to navigate, gather intelligence, communicate, and otherwise achieve competencies that until very recently were the exclusive purview of more advanced space powers. We should not assume that our current qualitative advantage in these areas necessarily ensures the space superiority we previously held.

Other nations and commercial expansion are increasing opportunities and challenges in space

With more than 50 space-faring nations and commercial entities, space is one of the most interconnected and interdependent operational domains. Interestingly, as of 2020, six of those nations and one alliance of nations have demonstrated an inherent Mars exploration capability through attempts to place a vehicle on its surface. Those countries include the United States, Russia, China, the United Arab Emirates, Japan, India, and the European Union. While this is a positive indication of a rapidly accelerating interest in space that can benefit a greater number of people, it also highlights the need to prioritize space development. More significantly, it
highlights the need for good stewardship of the domain, which demands responsible behavior; a mistake by one could have catastrophic consequences for all.

Commercial growth in space provides both significant opportunities and potential challenges to overcome. The commercial space sector continues to grow, with global revenue exceeding $366 billion in 2019 and 60-satellite per launch missions or advancements in commercial space tourism from companies like SpaceX and Virgin Galactic highlighting the importance of the domain. Commercial opportunities open new possibilities, but can also complicate access to the domain with the proliferation of mega constellations. As commercial satellite constellations expand and begin pushing out beyond geosynchronous orbits, it becomes increasingly important to understand the domain and to manage burgeoning traffic.

Underpinning this growing congestion is the ability to understand the environment through shared space situational awareness—tracking objects in space—and space domain awareness—tracking, identifying, and characterizing space objects with the appropriate fidelity to identify threats. USSPACECOM continues to develop partnerships with allies, within the U.S. Government, and with commercial partners to advance mission capability in both space situational awareness, and space domain awareness. As part of this overarching effort, the Department of Commerce is increasing its role in promoting spaceflight safety standards and the coordination of space traffic, a critical component to safe operations in the domain. I appreciate the Department of Commerce’s enthusiasm and dedication to effectively develop, maintain, and use space situational awareness data from a variety of governmental, commercial, and international sources in an Open Architecture Data Repository. I urge Congress to afford the Department of Commerce the resources they need to accomplish the civil and commercial spaceflight safety mission. This transition allows USSPACECOM to concentrate on developing
the more precise space domain awareness capabilities essential to characterizing threats in space
and, in turn, enabling a whole-of-government response. A continuing partnership between
USSPACECOM and the Department of Commerce is a key enabler of U.S. and allied space
superiority, not to mention a necessary element of a vibrant space economy.

Build the Command to Compete and Win

United States Space Command has unique space domain responsibilities

Where the U.S. once enjoyed a profound technological lead in developing and fielding
space capabilities, strategic competitors now compete for space dominance. As these potential
adversaries have evolved and proliferated an increasing array of counter-space capabilities,
USSPACECOM relies on its service and interagency partners to outpace the threats. This
requires continued emphasis and focus on correctly identifying threats and responding rapidly in
a threat-relevant timeframe.

USSPACECOM has two essential tasks – first, to enable the Joint Force by providing
unmatched, dependable space capabilities; and second, employing combat power in the space
domain. Our mission is to conduct operations in, from, and to space that deter conflict and, if
deterrence fails, deliver decisive space combat power for the Joint and Combined Force. Our
ability to accomplish this mission effectively is contingent on amassing a variety of capabilities
and effectively integrating them across all domains and in concert with the Joint force and our
allies and partners.

USSPACECOM is increasing its operational reach and expanding its capabilities through
participation in joint, combined, and integrated exercises

USSPACECOM continues to grow its operational capability with our two functional
components and five service components. These functional and service components provide
warfighting capabilities for joint execution in support of USSPACECOM. Through Joint Task
Force – Space Defense, we protect and defend our on-orbit assets, and through Combined Force Space Component Command, we provide support to terrestrial forces and integrate with commercial partners, while defending the domain against aggression. To task these organizations efficiently and effectively, USSPACECOM published its first campaign plan and operating order that aligns joint operations and achieves unity of effort.

To test our plans and operating concepts, USSPACECOM regularly participates in advanced, coalition-integrated global and regional exercises and wargames, such as Global Lightning, Austere Challenge, and Pacific Fury. These events prepare our Joint Force, allies, and partners to protect and defend our space assets while providing combat effects in, from, and to space. Through these multiple exercises and senior level war games, USSPACECOM demonstrates its ability to work with other Combatant Commands, the Joint Staff, and international partners to execute globally integrated operations across the spectrum of warfare.

Warfighting exercises require a multi-service, multi-domain, and globally integrated approach to national security objectives, consistent with the Chairman’s Joint All-Domain operations directive. We are also preparing to execute our own tier one multi-combatant command exercise in fiscal year 2022. In future exercises, we will continue to integrate fully across regions and domains to protect and defend U.S. and allied space interests globally.

**The United States must improve its defensive and offensive space warfighting capabilities to deter adversaries and prevail in future conflicts**

The DoD’s legacy space architecture and organizations were designed for a relatively benign and uncontested environment. In past decades, we invested in vulnerable, space-based platforms while our adversaries invested in relatively low-cost methods to counter these capabilities. Our focus was engineering redundancy rather than warfighting reliability. This left us vulnerable to exploitation – particularly as our dependence on space-based capabilities to
advance U.S. interests continued to grow. This changing strategic environment resembles the environment experienced by the U.S. in the Vietnam War, where conventional strength dependent on vulnerable supply lines and centralized forces left troops pursuing a defense strategy, vulnerable to asymmetric and decentralized attacks.

Today, even as potential adversaries continue their effort to achieve parity in space capability, they also employ asymmetric capabilities to deny us the advantages of space. The U.S. must continue to build resilience in the vital space capabilities the Joint Force requires to fight and win in space, as well as in the air, land, sea, and cyber domains, while strengthening its space warfighting capability to counter these rising peer, near-peer, and asymmetric threats. Such warfighting capability provides a credible deterrent against belligerent actions in the space domain as part of a broader U.S. strategy for deterrence and defense.

USSPACECOM aims to advance our capability and capacity aggressively by coordinating with the services, leveraging innovative space systems, and by developing joint warfighters who have the expertise, judgment, and will to fight and win against a determined adversary. To this end, USSPACECOM provides warfighter requirements to the Department, which leads the acquisition of the capabilities we need to achieve our mission. This is critical to revitalize our aging space architecture, remaking older, less flexible, and vulnerable systems into a resilient, redundant, and survivable architecture to cope with evolving threats. Consequently, we need the continued support of Congress for the Services as they acquire components of this architecture and work to streamline acquisition processes and shorten the time from concept to fielding. USSPACECOM also strongly supports any economical, innovative solution that increases the defensibility of our space systems and provides the means to maintain space superiority.
Moreover, in today’s threat environment, strategic deterrence remains the bedrock of our national defense. Every Operational Plan across the Department begins with the assumption that strategic deterrence will hold. A safe, secure, and effective nuclear force, enabled by space-based assets, remains the most credible combination of capabilities to deter strategic attack and execute our national strategy. We must stay the course with nuclear and conventional force recapitalization commitments to ensure the Joint Force can operate when, where, and as required to defend our national interests. Moreover, we must defend our space assets and improve our space domain awareness to present viable options to the Joint Force across the spectrum of operations.

Just as we must revise our systems and processes, we must also develop the most critical component of our enterprise – our warfighters. USSPACECOM is laying the foundation for a warfighting organization and is reinforcing a spirit of excellence, character, and resolve in our space experts. In so doing, we will promote coordination across the entire enterprise and empower our warfighters to act decisively and win.

United States Space Command is a joint warfighting organization with uniformed and civilian representatives from all services and the nation’s Intelligence Community. A year and a half after reestablishment, we have approximately 430 military and civilian personnel assigned to the Headquarters, or just over one third of our authorized end strength. We need the continued support of Congress to help us achieve our full strength, especially with regard to funding our civilian personnel, who comprise two-thirds of our workforce and provide critical diversity, continuity, and skills. This is critical to our ability to prevent capability gaps in support of the National Defense Strategy and missions assigned to us in the Unified Command Plan. To this end, we continue to align our workforce to bolster operational capabilities presented by our joint
centers. We use these forces to achieve our key tasks: understanding our competition, building
the command to compete and win, fostering and maintaining key relationships, maintaining
digital superiority, and integrating commercial and interagency organizations. By achieving these
key tasks, we will accomplish our mission.

**USSPACECOM focuses on personnel development as a key enabler of mission success**

USSPACECOM works with our joint force providers to acquire the best and the brightest
personnel, helping develop our future space leaders through training, education, and other
aspects of human capital development. In partnership with the National Security Space Institute,
USSPACECOM develops a cadre of joint space warfighters that ensures an enduring focus on
space power as part of a more lethal and ready force. This interactive classroom instruction,
coupled with individually tailored online training, allows newcomers an opportunity to build
upon their knowledge base in the context of our directed missions. Additionally, we continue to
integrate space into professional military education, other combatant commanders’ conferences,
and throughout joint education. Investment in human capital improves the development of joint
space warfighters and our lethality in the space domain.

**To remain a space power requires consistent and continued resources commensurate with
the value that space provides and that the threat demands**

USSPACECOM’s ability to execute its assigned mission depends on the services’
continued rapid development and timely delivery of critical space warfighting capabilities.
Specifically, we require the sensor architecture necessary to detect and characterize activity in
space; a unified and distributed command and control family of systems that enable
synchronized space effects; flexible capabilities to deter aggression and deliver decisive effects;
and the ability to protect and defend U.S. and allied interests.
Maintaining Key Relationships

USSPACECOM is strengthening alliances and attracting new partners, while working with private enterprises to improve space awareness

As President Biden lays out in the March 2021 Interim National Security Strategic Guidance, strengthening our relationships with allies and partners is crucial to maintaining a secure, safe, and sustainable space environment. To this end, we are expanding our network of partner nations, international organizations, and commercial entities that bring situational awareness, mutual support, and technological innovation to the space enterprise. We are enhancing our interoperability with allies and partners and sharing information to unite around a compelling narrative.

In 2020, USSPACECOM expanded space related data sharing agreements, including new partners Luxembourg, Peru, and Portugal. To date, USSPACECOM has agreements with 26 nations, two intergovernmental organizations, three academic institutions, and over 90 commercial satellite owners, operators, and service providers. By providing this advanced information and services to space-faring partners, we display American leadership in the space domain, promote transparency in the responsible and peaceful use of space, and support the planned transition of civil and commercial spaceflight safety services to the Department of Commerce in 2024. In 2020, in coordination with USSOUTHCOM, we implemented our first “space-centric” security cooperation initiative focusing on institutional capacity building with Brazil, Chile, Colombia, and Peru.

The safety and sustainability of an increasingly crowded space domain grows more complex as commercial entities plan to launch thousands of satellites in the next few years. The explosive growth of nano, micro, and small satellites will further stress our existing space surveillance networks. Working closely with companies as they plan, launch, and operationalize
these new mega-constellations is key to our continued ability to provide comprehensive space situational awareness. As a priority, USSPACECOM warfighters in the Combined Space Operations Center (Vandenberg AFB), the National Space Defense Center (Schriever AFB), the Joint Operations Center (Peterson AFB), and at a variety of other key nodes are working tirelessly with interagency partners to build and leverage complete and timely space domain awareness. Along with this battle space awareness, we are also prioritizing the associated and necessary space command and control capabilities.

Space domain awareness remains the bedrock of many partnerships and the top priority for USSPACECOM. The command seeks to develop a more complete, big picture understanding of activities in the domain. This goes beyond merely tracking space objects for situational awareness to a space domain awareness that identifies, tracks, and characterizes objects that can threaten U.S. and allied space capabilities. This is a necessary element of acknowledging space as a warfighting domain, which includes its enabling computer networks, terrestrial sites, and the electromagnetic links between space and ground systems.

**Achieving the desired effects in the space domain requires close coordination with other Combatant Commands**

The command continues to evolve Combatant Command integration and establish normalized relationships to coordinate, integrate, and synchronize operations extending beyond geographic areas of responsibility. To facilitate cooperation, interoperability, and unity of effort, USSPACECOM created Space-Integrated Planning Elements comprised of space and intelligence planners embedded within the staffs of our sister Combatant Commands. These experts integrate space capabilities and effects into their respective Combatant Command plans while mutually informing USSPACECOM’s operational plan development. Furthermore, each
Combatant Command’s space warriors integrate space effects across all warfighting functions, enhancing the Joint Force’s ability to achieve military objectives rapidly and decisively.

**Maintaining Digital Superiority**

Underpinning all of these must be a robust cybersecurity environment that secures our intellectual and technological advantages from cradle to grave. It is critical to keep building this momentum by funding these fundamental capabilities: battle space awareness, command and control, deterrent space capabilities, cybersecurity, and protect and defend capabilities. Additionally, we must capitalize on machine learning and artificial intelligence developments to secure our systems, advance our capabilities, and increase the speed of our decision-making process. Accordingly, within our efforts to maintain digital superiority, USSPACECOM is determined to innovate for competitive advantage, evolve cyber operations for an agile and resilient posture, and invest in game-changing technologies. The research and development, acquisition, and operationalization process relies on innovation at every level, and we must streamline this process to operate at the growing pace of decision-making. Future years will require additional resources to accomplish all of this, and to ensure the U.S. can adequately address the evolving and expanding cyber threats posed by our strategic competitors and adversaries.

**Integrating Commercial and Interagency Organizations**

USSPACECOM provides mission assurance for interagency and commercial space operations.

The rapidly accelerating interest in space and associated growth in the technically oriented industrial base is a key part of continued U.S. economic prosperity. U.S. commercial space growth aids our mitigation efforts against threats. One example includes the effort with commercial partners to design and field a U.S.-built engine to power our largest space launch
vehicles, thus decreasing our need for reliance on the Russian RD-180 to propel our Atlas V launch vehicle. In our interagency space mission assurance role, USSPACECOM supported NASA and SpaceX for contingency rescue operations for both the Demonstration Mission Two launch in August and the SpaceX Crew-1 launch in November – the first crewed space launches from U.S. soil in nearly a decade. USSPACECOM is committed to assuring the safe exploration of space and is supporting the planned lunar missions. USSPACECOM is preparing to provide crew and spacecraft recovery for the upcoming Artemis missions and associated training events to begin late 2021.

**Conclusion**

USSPACECOM plays a crucial role in guaranteeing the American way of life through the delivery and defense of U.S. and allied space capabilities and services. We make daily gains in our ability to protect and defend our assets from our adversaries, and we stand ready to provide advanced space-based capabilities to our warfighters. Under the direction of the President and Secretary of Defense, and with the support of Congress, USSPACECOM is prepared to safeguard our access and operations outside our atmosphere so that there is never a day without space.
GEN James H. Dickinson  
Commander 
U.S. Space Command

U.S. Army General James H. Dickinson assumed duties as the Commander, U.S. Space Command, on Aug. 20, 2020, after most recently serving as the first Deputy Commander of U.S. Space Command, the 11th and most recently established unified combatant command.

He is a native of Estes Park, Colorado, and a graduate of Colorado State University. He holds a Bachelor of Science in Mechanical Engineering and a Master of Science in Operations Research and Systems Analysis from the Colorado School of Mines. He later earned a master’s degree in Strategic Studies from the United States Army War College.


His key staff assignments include Chief of Staff, U.S. Strategic Command; Director for Test at the Missile Defense Agency; Deputy to The Inspector General, Office of the Secretary of the Army; Deputy Director for Operations, National Military Command Center, J-3, Joint Staff; Chief, Commander’s Initiatives Group, United Nations Command/Combined Forces Command, Republic of Korea; Assistant Chief of Staff, G-3, 32nd Army Air and Missile Defense Command; Senior Emergency Actions Officer and Senior Operations Officer, National Military Command Center, J-3, Joint Staff; Operations Officer, 11th Air Defense Artillery Brigade; Operations Officer, 5th Battalion, 52nd Air Defense Artillery, 11th Air Defense Artillery Brigade supporting Operation Southern Watch.

Gen. Dickinson is the senior Air Defense Artillery Officer in the U.S. Army. His awards and decorations include the Defense Distinguished Service Medal, two Distinguished Service Medals, three Defense Superior Service Medals, three Legion of Merits, Bronze Star Medal, Defense Meritorious Service Medal, three Meritorious Service Medals, three Army Commendation Medals, Joint Service Achievement Medal, four Army Achievement Medals, Parachutist Badge, Master Space Badge and Joint and Army Staff Identification Badges.

August 2020
QUESTIONS SUBMITTED BY MEMBERS POST HEARING

April 21, 2021
QUESTIONS SUBMITTED BY MR. TURNER

Mr. TURNER. In response to congressional direction originating in the HASC FY2020 NDAA, the Institute for Defense Analyses conducted an independent assessment of the implications of a U.S. no first use policy. IDA concluded that U.S. adoption of a NFU policy would not improve the international nuclear security situation; not change Russian or Chinese perceptions of U.S. policy or encourage any change in their policies; not lower the risk of miscalculation in a crisis; undermine allied confidence in U.S. security guarantees; and likely weaken current barriers to further nuclear proliferation. On what points do you disagree with the IDA conclusions?

Ms. DALTON. I am familiar with IDA's report on No First Use policy and have reviewed this assessment. Our declaratory policy should support our strategic objectives, including credibly assuring allies and partners as to our continued extended deterrence commitments to them. As I testified, I anticipate our strategic reviews will determine whether the conditions exist today under which a change in declaratory policy could be safely adopted. This assessment will account for the views of the U.S. military and allies and partners, and as Deputy Secretary of Defense Hicks has made clear, any such decision will be made by the President.

Mr. TURNER. You committed to providing to the Committee by COB on April 23, 2021, any information on interactions between OSD and CAPE concerning a "Best 200 MMIII" SLEP approach. Please provide an update to the Committee on that proposal, as well as any supporting documents that have been produced to date.

Ms. DALTON. OSD Policy has not asked CAPE to study, or to commission, fund, sponsor or otherwise support a study, regarding a "Best 200 MMIII SLEP" approach.

Mr. TURNER. What have our U.K. counterparts communicated to you about the importance of the W93 program to their independent work on a replacement for their current warhead?

Ms. DALTON. Our support to the United Kingdom and its Continuous-At-Sea-Deterrent contribute to NATO's defense and has helped underwrite NATO's collective peace and security since the signing of the bilateral Mutual Defense Agreement in 1958. The United Kingdom's 2021 Integrated Review of Security, Defence, Development, and Foreign Policy confirmed its commitment to maintaining a minimum credible independent nuclear deterrent, and highlighted how "nuclear cooperation remains an important element of the enduring Special Relationship between the United States and the United Kingdom, enhancing trans-Atlantic security." The United Kingdom has emphasized the importance of the W93 program as the United Kingdom pursues its separate but parallel warhead development program. The United Kingdom further noted in its Integrated Review: "We will continue to work closely with the United States to ensure our warhead remains compatible with the Trident Strategic Weapon System." We plan to continue our strong cooperation with the United Kingdom on nuclear weapons.

Mr. TURNER. Ms. Dalton, over the last year have any USG policy documents been updated related to U.S. test readiness? If so, can you please provide those to the Committee.

Ms. DALTON. I am not aware of any documents of the Office of the Under Secretary of Defense for Policy related to U.S. test readiness that have been updated in the past year. A presidential guidance document was signed at the end of the previous administration, but as a classified presidential document, I am not authorized to release it. More generally, we will continue to evaluate nuclear deterrence requirements in the context of the nuclear posture review.

Mr. TURNER. In your opening remarks you state that "Over the next ten years and in response to perceived threats, including potentially first strike capability from the United States, China plans to at least double the size of its nuclear stockpile and carry out a rapid expansion and diversification of its nuclear arsenal." Your statement for the record essentially blames the U.S. triad modernization effort, which has been around for eight decades, for the recent Chinese crash nuclear build-up. What specific first strike capabilities that we've deployed are you referring to? Do you have specific intelligence reporting to back up this statement (if so, please
provide it to the Committee)? Can you please explain to the Committee why these "perceived threats" are inaccurate?

Ms. DALTON. The United States is not to blame for China's plan to expand and modernize its nuclear arsenal. China's rapid expansion of its nuclear arsenal is a very serious concern. Last year, DOD estimated that China had a nuclear warhead stockpile in the low-200s and projected that it would at least double over the next decade. Since then, China has accelerated its nuclear expansion and will almost certainly exceed the intelligence community's previous projection. It is important to identify the drivers of our adversary's nuclear modernization programs in order to understand how we can most effectively enhance nuclear deterrence and prevent a dangerous and costly arms race. China's nuclear strategy has long centered on the ability to provide an assured counterstrike against adversary's nuclear attack—which requires a sufficient portion of its nuclear force be able to survive such a strike. China's efforts to expand and diversify its nuclear arsenal are broadly aimed at improving the survivability, responsiveness, and effectiveness of its nuclear force while also providing China's leaders with additional strategic options. The factors driving China's nuclear efforts include its concerns about the survivability of its nuclear force in the face of advances in U.S.—and to a lesser extent Russian—strategic ISR, conventional precision strike, and missile defense capabilities. Other factors include China's desire to build a "world-class" military as part of its national strategy and broader intensifying U.S.–PRC tensions. For further details, the Office of the Under Secretary of Defense for Policy provided intelligence reporting to both the House and Senate Armed Services Committees and is planning to participate in a classified follow-up briefing describing those factors driving China's activities.

Mr. TURNER. The United Kingdom in their well-reasoned Integrated Review specifically rejected a NFU policy. Have your U.K. counterparts articulated to you their justification for doing so and what is your opinion of their rationale? Do you believe their rationale for doing so is sound?

Admiral RICHARD. Yes, the United Kingdom Ministry of Defence (MoD), Director General of the Nuclear Defense Nuclear Organisation, did contact me regarding the nuclear deterrent aspects of its Integrated Review. As the Director General labeled her letter "official sensitive" its contents cannot be publicly released. However, the statement in the Integrated Review regarding NFU is well phrased and consistent with current U.S. policy.

I appreciated the Director General's letter and look forward to the continued close U.S.–U.K. cooperation in these matters.

Mr. TURNER. A 2020 strategy document issued by Vladimir Putin, states that Russia will consider using nuclear weapons first in a number of situations, clearly highlighting the importance of these capabilities in Russian strategy. Do you believe that either Russia or China would adopt a true and credible NFU policy if the United States did?

Admiral RICHARD. China currently has a "No First Use" policy, yet it is rapidly improving its strategic nuclear capability and capacity, to include significant advances in intercontinental and medium range missiles. It is well ahead of pace to double their nuclear stockpile by the end of the decade. None of this is consistent with a NFU policy and as such, I and others doubt the credibility of such a pledge. Likewise, the Soviet Union adopted a NFU pledge in 1982 but it was seen as propaganda aimed at undermining Western political cohesion as the Soviet military continued to publish writings on nuclear preemption.

In response to National Defense Authorization Act for Fiscal Year 2020, Section 1673, and pursuant to an agreement with the Office of the Secretary of Defense, the Institute for Defense Analysis (IDA) examined the issue of the U.S adopting a policy to not use nuclear weapons first. Among other things, the analysis concluded "a policy pronouncement of NFU is unlikely to alter how Moscow or Beijing perceive that the U.S. will approach a crisis" and "the available evidence indicates that Russia and China will not view such a shift in U.S. policy as credible."

In light of the above, I will not speculate on potential Chinese and Russian reactions to hypothetical situations and, more specifically, on what "a true and credible NFU policy" from Russia and/or China would be.

Mr. TURNER. In your testimony on April 20 and 21, 2021, you stated that the Minuteman III is so old "That in some cases the [technical] drawings don't exist anymore, or where we do have drawings, they're like six generations behind the industry standard", "And there's not only [no one] working that can understand them—they're not alive anymore. " Also, there are "switches that aren't produced or can't be produced anymore. It's like trying to get industry to produce dial-up modems. "

Are there other examples that STRATCOM can provide as to parts and components to extend the MMIII that are no longer available or difficult to acquire? Even as-
suming MMIII could be extended, would a system based on 1960s/70s-era technology be able to meet current and future military requirements?

Admiral Richard. I will defer to the Air Force for more detailed MM III part and component sustainability challenges.

Our legacy delivery systems, stockpile, and infrastructure are all well past their intended operational life and are not designed for, nor capable of keeping pace with the rapidly evolving threats. Specifically, MM III technology cannot keep pace or close existing capability gaps. A MM III Service Life Extension Program (SLEP) is not a viable option as it would incur substantial technical risk due to the system’s tightly coupled, vertically integrated design that lacks a healthy supporting development or manufacturing base.

Mr. Turner. At the end of the Obama Administration they considered an option of cannibalizing 200 Minuteman III ICBMs and using them to extend the “Best 200” MMIIIs currently in our inventory. This was ultimately viewed as unworkable do the costs, security, moving around of spare parts and missiles, and that we should not go down to 200 missiles. What is your best military advice should a proposal like this be brought before you? Has STRATCOM conducted any analysis of this proposal or a proposal like it (if so please provide to the committee)?

Admiral Richard. The 2010 and 2018 Nuclear Posture Reviews assessed our current ICBM force structure through a formal, methodical approach, and determined the current force structure, size and modernization/replacement program of record fully supports our deterrent strategy.

I do not support cannibalization of Minuteman III (MM III) to delay the Ground-Based Strategic Deterrent (GBSD) in order to defer costs or mitigate MM III sustainment challenges. While “cannibalizing” the MM III force may defer the asset attrition problem, it does not halt the aging problems or address identified capability gaps, and significantly reduces capacity required to deter two peer nuclear adversaries. We are already at a point where nuclear modernization programmatic risk is inextricably linked to mission operational risk. If this continues, MM III aging will inevitably impact my ability to meet strategic guidance. The AF has determined timely execution of GBSD is the most cost-effective way to maintain the ICBM force.

Mr. Turner. On April 20, 2021, in a response to Senator Cotton, you stated that reducing the number of ICBMs or removing that leg of the triad would “solve a critical problem for China.” Can you elaborate how that would be the case? How would going below 400 to 200, or to even zero, be solving a “big problem” that China currently has?

Admiral Richard. The triad must be considered as a whole because it functions as a whole, with each leg essential to overall effectiveness. The triad’s complementary attributes ensure the enduring survivability of our deterrence capabilities against attack and our capacity to hold a diverse range of adversary targets at risk throughout the spectrum of crisis or conflict. The ICBM force is the most responsive leg of the triad and ICBM geographic dispersion presents an intractable targeting problem, complicating China’s (and Russia’s) strategies. These missiles are capable of holding a wide range of targets, to include emergent and time sensitive targets, at risk. They are survivable to all but a massive nuclear exchange and possess the highest day-to-day readiness. Reducing the ICBM force by half would be a unilateral reduction in the face of a deteriorating security environment along with the detrimental messaging to our Allies and adversaries, and would facilitate China’s rise as a strategic peer. China’s currently intractable targeting problem would be significantly eased and they would be closer to possessing a credible counter-force strategy (i.e., the ability to directly attack our nuclear forces) for the first time in their history. For the case without any ICBMs, in addition to the above, the potential for a strategic attack on our homeland further increases. A conventional attack on our few (5) submarine and bomber bases would significantly degrade the Nation’s remaining deterrent.

Mr. Turner. If the LRSO were cancelled or delayed beyond the planned retirement of the legacy Air-Launched Cruise Missile, do you believe the air leg of the triad would still be viable?

Admiral Richard. No. Even with the deployment of the B–21, the long-term viability of the air-leg is dependent on the fielding of LRSO. LRSO complicates adversary air defense strategies as it can be effectively employed to cover geographically dispersed targets from a single standoff bomber. Without LRSO, bombers would be forced to overfly the target, requiring a greater number of penetrating bombers and support aircraft while increasing crew risk. The air leg of the triad is viable as it provides visible, scalable, and flexible deterrence and assurance options for the President. The air leg is deployable to unanticipated locations; can evade air defenses; and it is the least expensive leg of the triad to adjust or recapitalize in the
face of technical or geopolitical uncertainty. Canceling LRSO puts this viability at risk.

Mr. TURNER. Can you explain the importance of LRSO given the New START Treaty bomber counting rule?

Admiral RICHARD. New START (NST) attributes each deployed bomber as having one nuclear warhead, regardless of the actual number of weapons the bomber may be carrying. For example, a B–52H may carry up to 20 nuclear LRSO weapons; but under NST counting rules, it would be counted as one weapon. LRSO complicates adversary air defense strategies as it can be effectively employed to cover geographically dispersed targets from a single standoff bomber. Without LRSO, bombers would be forced to overfly the target, requiring a greater number of penetrating bombers and support aircraft while increasing crew risk. Further, LRSO is the most cost-effective approach to ensure a credible and effective air leg of the triad. Though extremely capable, we have a limited number of B–2s with gravity bomb capability which are insufficient to hold the required significant targets at risk. This capability must be protected as it is vital to USSTRATCOM’s ability meet mission requirements. LRSO preserves an ability to increase bomber payloads as a key hedge against unforeseen technical or geopolitical challenges.

Mr. TURNER. Are there possibilities by which LRSO IOC could be accelerated and what would your best military recommendation be?

Admiral RICHARD. My requirement for LRSO is an Initial Operational Capability (IOC) no later than 2030. Defer to the Air Force regarding any specific options available to deliver IOC sooner.

Mr. TURNER. Can you please explain STRATCOM’s requirements for the W93 and how that program, along with other efforts such as the Common Missile Compartment, contributes to not only the U.S. triad, but also the U.K. deterrent.

Admiral RICHARD. Our current 1970s/80s era warheads have been extended to double their intended design lives; in the late 2030s, they will begin reaching a point of uncertainty in both reliability and effectiveness at nearly the same time. We cannot continue to cost effectively sustain legacy weapons indefinitely and expect them to remain militarily effective against evolving 21st century threats. The W93 will allow us to take advantage of modern technologies and manufacturing processes to hedge against technical risks in our current SLBM warheads—and reduce current over-reliance on the W76—while providing the opportunity to include modern technologies that improve safety, security, and flexibility to address future threats. Without W93, COLUMBIA will have weapons that may not be able to penetrate adversary defenses, and if they do, may not deliver the intended effect due to uncertainty in weapon degradation. In addition to being required for U.S. modernization requirements, the W93 and the Common Missile Compartment programs enable us to continue our longstanding support to the U.K. and their warhead replacement program. As an Allied independent nuclear power contributing to NATO’s nuclear deterrence posture, the U.K.’s continuous at-sea nuclear deterrent is critical to strategic security.

Mr. TURNER. The Russians have criticized the U.S. for planning to develop a Nuclear Sea Launched Cruise Missile and have called it destabilizing, even though the U.S. fielded a similar weapon for decades before retiring it in 2013. Isn’t it true that the Russians have nuclear-capable SLCMs? If Russia has them, how can they say that the U.S. having them would be “destabilizing”?

Admiral RICHARD. Yes. Cruise missiles have been fielded on bombers and other platforms (e.g., sea-launched) since the late 1960s, and I do not view them as destabilizing. Russia currently employs both conventional and nuclear-capable air- and sea-launched cruise missiles, implying they do not view them as destabilizing. Moreover, Moscow frequently describes U.S. systems as “destabilizing” to try and undermine public support, even though Russia maintains similar capabilities.

Mr. TURNER. Please describe in detail the value a nuclear capable SLCM would provide to the force.

Admiral RICHARD. The nuclear-armed sea-launched cruise missile (SLCM–N) is intended to deny potential adversaries any mistaken confidence limited nuclear employment would provide an advantage over the U.S., its Allies and partners. SLCM–N will bring a needed non-strategic regional presence and an assured response capability. It does not require host nation support and provides additional diversity in platforms, range, and survivability. The SLCM–N will provide assurance to our Allies and partners through tailored response options in vast operating areas where forward basing may not be possible. Limited U.S. response options, such as the SLCM–N, is intended to provide a more credible deterrent to limited attack against the U.S., Allies and partners rather than relying primarily on the threat of large-scale nuclear responses. It will enhance our ability to tailor deterrence and assurance while expanding the range of credible U.S. options.
Mr. Turner. Some critics have called the U.S. low-yield W76–2 submarine launched ballistic missile warhead “destabilizing.” Can you please explain how this weapon could deter Russia from using their “escalation to win” strategy?

Admiral Richard. The low-yield submarine launched ballistic missile warhead (W76–2) is intended to strengthen deterrence by convincing Russia that the U.S. has credible and effective options at any level of conflict, and that Russia cannot coerce the U.S., its Allies and partners through the limited use of nuclear weapons—the basis of their “escalation to win” strategy. The W76–2 provides deterrence and assurance through tailored response options in vast operating areas where forward basing may not be possible. The limited and timely U.S. response options provided by the W76–2 ensure a more credible deterrent to limited attack against the U.S., Allies and partners rather than relying primarily on the threat of large-scale nuclear responses. Without this capability, Russia may perceive an advantage at lower levels of conflict that may encourage limited nuclear use.

Mr. Turner. In your opinion does the W76–2 make nuclear weapons use more or less likely? What are the benefits of us having this weapon in our arsenal?

Admiral Richard. Deployment of the W76–2 makes nuclear weapon use less likely. Specifically, W76–2 deployment will raise the nuclear threshold by helping to ensure that potential adversaries perceive no possible advantages in limited nuclear use—making nuclear weapon employment less likely. The W76–2 provides deterrence and assurance through tailored response options in vast operating areas where forward basing may not be possible. Further, the W76–2 provides additional diversity in platforms, range, and survivability, and serve as a valuable hedge against future nuclear “break out” scenarios. It also offers a timely response option able to penetrate adversary defenses and does not require host nation support to provide deterrent effect. Limited U.S. response options, provided by the W76–2, ensure a more credible deterrent to limited attack against the U.S., Allies and partners rather than relying primarily on the threat of large-scale nuclear responses. Without this capability, adversaries may perceive an advantage at lower levels of conflict that may encourage limited nuclear use.

Mr. Turner. You stated yesterday before the Senate Armed Services Committee that “any threat brief that is discussing China and more than a month old is out of date and must be updated.” As Intelligence briefings are updated to incorporate this new intelligence, can you please provide these materials to the committee?

Admiral Richard. USSTRATCOM is a contributor to the Intelligence Community via DIA. For a broader perspective and the most up-to-date information regarding China’s ongoing modernization activities we would refer you to the Intelligence Community.

Mr. Turner. Earlier this year, several news outlets reported that 16 new ICBM silos had been discovered in a training area in Northern China through the use of open source satellite imagery. Based on what we understand about the size of China’s silo-based ICBM force, this seems like a large number of additional training facilities. What reasons could China have for expanding its ability to train silo-based ICBM personnel in this way?


Admiral Richard. China continues to invest in its ICBM program, including a concept of operations to deploy solid fuel ICBMs such as the DF–41 in silos. The training area silos are helping the PLA develop this new concept of operations which will enable them to train personnel for a very large number of additional training facilities. What reasons could China have for expanding its ability train silo-based ICBM personnel in this way?

Mr. Turner. It’s been nearly a decade since the Congressional Commission on the Strategic Posture of the United States was completed. The threat environment for example is something that is completely different. Would you support the establishment of another such bipartisan congressional commission to take a look at the current threats and how they should be addressed (this would be in addition to the Biden NPR)?

Admiral Richard. Should such a congressional commission be established, USSTRATCOM would provide any necessary support as requested.

Mr. Turner. As we talk about Russia and China, it’s important not to lose sight of the Iran and DPRK ICBM threats. Late in 2020 Janes Defense reported that “Iran and North Korea have resumed co-operation on a long-range missile project, including the transfer of critical parts” How do you view the DPRK and Iran missile threat to the homeland? How can we better protect the Homeland from this? Can you get with your J2 shop and provide for the record an updated unclassified and classified assessment(s) of DPRK and Iran missile cooperation and what the implications might be?
Admiral Richard. Iran and North Korea have a history of cooperation with ballistic missile technology. North Korea poses a serious challenge to the United States. Its leadership likely views expanding its strategic nuclear and missile deterrents as essential to ensure regime security against the U.S. Iran has launched multi-stage space launch vehicles (SLVs) that could aid its development of longer-range ballistic missiles, because SLVs use inherently similar technologies and could serve as a test bed for developing ICBM technologies. To protect the homeland from rogue nation threats, we require a space-based sensor architecture to persistently detect, track and discriminate advanced missile threats, including hypersonics. We must improve interceptor reliability, capacity, and lethality, and pursue next-generation capabilities such as directed energy, boost phase intercept, and non-kinetic effects. USSTRATCOM is a contributor to the Intelligence community via DIA. For a broader perspective on DPRK and Iran threats and associated implications we would refer you to the Intelligence Community.

Mr. Turner. Do you believe U.S. ICBMs are currently on “hair-trigger alert”? Follow up, do you believe taking ICBMs off alert would increase stability?

Admiral Richard. No. The term “hair trigger” is an incorrect and misleading characterization of the status of our ICBMs as it implies automatic or near-automatic action during a crisis event. Our ICBM force is controlled through secure, reliable, positive control measures designed to ensure all actions are in response to a valid launch order from the President. Further, these same procedures prevent unauthorized or accidental launch, and keep our ICBMs locked day-to-day. The U.S. maintains a portion of its nuclear forces on alert day-to-day, and retains the option of launching those forces promptly if directed by the President. Yet the U.S. would only consider the employment of nuclear weapons in extreme circumstances to defend the vital interests of the U.S., its allies, and partners. The diverse, flexible and survivable nature of the overall Triad ensures there is no scenario where the President’s only option is to launch ICBMs. Over more than half a century, the U.S. has established a series of measures and protocols to ensure ICBMs are safe, secure, and under constant control. This posture preserves the full range of response options to control and Presidential decision-making. I do not support the notion that de-alerting our ICBMs increases stability. Our on-alert ICBM force presents a significant impediment to any adversary’s first-strike calculus—large geographic distribution, CONUS locations, hardened targets, and responsive capability drives strategic stability. De-alerting the ICBM force renders them vulnerable to a potential first strike and would compel a destabilizing rush to re-alert in a crisis or conflict.

Mr. Turner. Over the few years more has come to light about the type of activities taking place at Novaya Zemlya (Russian test site) and Lop Nur (PRC test site), to include the fact that they are likely conducting supercritical tests in excess of the U.S. “zero-yield” standard. Why do you believe that Russia and China are conducting super-critical hydro-nuclear tests at Novaya Zemlya and Lop Nur?

Admiral Richard. Over the few years more has come to light about the type of activities taking place at Novaya Zemlya (Russian test site) and Lop Nur (PRC test site), to include the fact that they are likely conducting supercritical tests in excess of the U.S. “zero-yield” standard. Why do you believe that Russia and China are conducting super-critical hydro-nuclear tests at Novaya Zemlya and Lop Nur?

Mr. Turner. Do you think that we should stop developing any weapons systems based on PRC “perceived threats” of U.S. “first strike capability”?

Admiral Richard. No. Our policy is very clear—the U.S. would only consider the employment of nuclear weapons in extreme circumstances to defend the vital interests of the U.S., its allies, and partners. The primary role of U.S. nuclear weapons is to deter potential adversaries from nuclear attack. They accomplish this role daily. Other roles include deterring significant non-nuclear strategic attack, assuring allies and partners, achieving U.S. objectives if deterrence were to fail, and hedging against an uncertain future. Operationally effective U.S. forces are required to achieve these priorities.

QUESTIONS SUBMITTED BY MR. MOULTON

Mr. Moulton. I was pleased to see the White House extend New START, as was recommended by the Future of Defense Task Force. Ms. Dulton, as we move forward with modernizing our nuclear forces, how are we taking into account future opportunities for additional arms control, rather than reflexively reinvesting in the triad?
Ms. DALTON. As stated in the Interim National Security Strategic Guidance, the President is committed to reestablishing our credibility as a leader in arms control. President Biden has already demonstrated this commitment by extending the New Strategic Arms Reduction Treaty (START) for five years. As I testified, the Department is committed to building on this foundation. With that said, it is not clear that Russia and/or China will reciprocate this interest. Unfortunately, neither Russia nor China has been forthcoming regarding nuclear force expansion. Russia is growing and modernizing its non-strategic nuclear weapons and is fielding new, so-called "novel" nuclear systems. China lacks transparency as it has consistently shied away from disclosing the exact size of its nuclear stockpile and has rejected any arms control overtures. Although we remain hopeful for constructive engagement, and we seek to head off costly arms races, we cannot avoid recapitalizing our nuclear forces. As Secretary Austin has stated, "U.S. nuclear weapons have been extended far beyond their original service lives, and the tipping point, where we must simultaneously overhaul these forces, is now here." Therefore, we must proceed with our plans to modernize the nuclear Triad and our nuclear command and control capabilities in order to ensure our strategic nuclear deterrent remains safe, secure, and effective.

Mr. MOULTON. Hypersonic weapons have the potential to be highly destabilizing, particularly if we pursue them blindly in a tit-for-tat with Chinese or Russian development. Ms. Dalton, do we have a clear vision for how we integrate hypersonic weapons into the U.S. arsenal in a way that deters, rather than escalates, conflict?

Ms. DALTON. The Department is concerned that China and Russia are aggressively fielding hypersonic strike systems as part of their larger anti-access/area denial (A2/AD) networks, and we must not cede a military edge in this capability area. However, we do not need to and are not seeking to match them one-for-one on hypersonic missiles. U.S. hypersonic missiles are not intended to negate those of potential adversaries, but rather they provide the Joint Force with another credible, long-range strike capability to strike key targets through and within A2/AD—targets such as air fields, air defenses, vessels, and other key assets. That is the DOD vision—that this new capability will be integrated with and augment other U.S. conventional strike capabilities. To ensure we are maximizing deterrence and warfighting effectiveness, the Department is developing hypersonic weapons capabilities informed by scenario-based planning and internal war gaming. Military Department hypersonic plans and programs will also be informed by new joint and Military Department/Service warfighting concepts that are currently in development.

Mr. MOULTON. I was pleased to see the USSPACECOM mission statement include allies and partners, as the Future of Defense Task Force, which I co-led last year, highlighted the importance of strengthening and modernizing our security partnerships for a changing defense environment. Nowhere is this more vital—or more challenging—than operating in space, which has until recently been the perquisite of great powers. A persistent challenge to strong relationships regarding space has been an overclassification of space capabilities and operations. General Dickinson, does overclassification remain an impediment to your ability to communicate and develop interoperability with our partners and allies in space, and if so, what changes would you propose?

General DICKINSON. Overclassification of space programs and capabilities is a tremendous impendiment to strengthening alliances and attracting new partners. Intelligence and information sharing restrictions stymie interoperability and integration of partners into our operations centers. Overclassification hinders USSPACECOM's ability to integrate allies and partners into our Operation Plans (OPLAN) as well. We continue to work with the Office of Director of National Intelligence and the Intelligence Community to facilitate the release of unclassified information to support attribution and "strategic messaging, as well as the release of intelligence to Allies and Partners. Since the beginning of the year, our J2 shared more than 300 intelligence products in recurring exchanges and normalized daily processes with our Allies and partners. We also fully integrated a United Kingdom intelligence officer in our Joint Intelligence Operations Center (JIOC), with four more FVEY intelligence officers expected to join in the future, including the Deputy JIOC Commander. Additionally, we have used the Combined Space Operations forums and working groups to develop common Priority Intelligence Requirements (PIR) among seven countries and are working on a Program of Analysis that will fully integrate those Allies and partners into SPACECOM analytic enterprise.
QUESTIONS SUBMITTED BY MR. LAMBORN

Mr. LAMBORN. Earlier this year you stated that the Minuteman III is so old “That in some cases the [technical] drawings don’t exist anymore, or where we do have drawings, they’re like six generations behind the industry standard,” he said. “And there’s not only [no one] working that can understand them—they’re not alive any-

How difficult would it be to extend the MMIII?

In your assessment, would you agree that GBSD is one of the best-run A category programs in DOD?

We have already awarded contracts to GBSD: is it accurate to say that if we ex-

Will a MMIII SLEP provide the same capabilities as GBSD in an increasingly complex threat environment?

So, if we SLEP MMIII, it will cost tax payers more money, we will get less capa-

Admiral RICHARD. While I will defer to the Air Force on the detailed analysis on MM III life extension, their findings are clear:

• Completing GBSD is more cost effective than a MM III Life Extension;

• A MM III SLEP would incur substantial technical risk due to its tightly cou-

• GBSD will address the current and emerging threats (a MM III SLEP cannot respond to a technologically advanced threat environment).

The ICBM force is our most cost effective deterrent capability; GBSD will con-

Mr. LAMBORN. Do you believe a strategic mission like SPACECOM’s should have survivable communications that protect from HEMP and other threats, as STRAT-

General DICKINSON. Yes, the critical command and control functions of warfight-

Our facility and infrastructure designs are not complete, so I cannot speak to cost estimates at this time. I can confirm that USSPACECOM is analyzing survivability requirements that will be included in our permanent headquarters command and control facility, and we are currently designing a contingency of operations plan to provide another layer of resiliency.

Mr. LAMBORN. In your best military judgment, would you get the same level of survivability for $1.4 billion in Huntsville as you currently have in Colorado Springs?

General DICKINSON. Our facility and infrastructure designs are not complete, so I cannot speak to cost estimates at this time. I can confirm that USSPACECOM is analyzing survivability requirements that will be included in our permanent headquarters command and control facility, and we are currently designing a contingency of operations plan to provide another layer of resiliency.

Mr. LAMBORN. How would an 80% loss of USSPACECOM’s current civilian and contractor personnel proficient in space operations specifically affect mission readi-

Have you identified the monetary cost of moving all those personnel, both uni-

General DICKINSON. My intent is to reach full operational capability at our perma-

Mr. LAMBORN. General Dickinson, as you aware, the Arctic is an increasingly con-

There are many U.S. Space Force strategic facilities and assets above the Arctic Circle which play a vital role in the USSPACECOM mission of deterring aggressive behavior by our competitors while
also playing a key role in protecting the homeland. It is critical that the U.S. maintain a viable and capable industrial base to support, and potentially surge, operations in the unique and challenging High North environment. What is U.S.SPACECOM’s plan to ensure we maintain a competitive U.S. industrial base capable of supporting our objectives and presence above the Arctic Circle?

General DICKINSON. The Arctic is unique, and with climate change, passages and maneuverability previously nonexistent are emerging with new opportunities and challenges. We are engaging our Science, Technology, and Advanced Concepts with the space community and leveraging the Combatant Command requirements process to emphasize Arctic support capabilities. In all mission areas, we put a premium on solutions demonstrating leap ahead manufacturing technologies and processes building lower cost, higher volume, and far better capabilities for our warfighters, while reinvigorating the American industrial base and trusted foundries. This ongoing effort will inform our industrial based capability requirements to support our mission needs. The Arctic is a unique vantage point for space. This makes places like Thule Air Base, Greenland, and Clear AFS, Alaska critical bases as we perform our Space Domain Awareness and other missions. Additionally, building and leveraging our international partners and specialized commercial entities are key to securing and maintaining our prominence and presence above the Arctic Circle.

Mr. LAMBORN. Question #1: China and Russia recently announced that they have entered into a Memorandum of Understanding (MoU) on establishing a lunar International Research Station. Although this was publicized as a scientific effort, this could also be perceived as a thin veil for military corporation on the moon. In General Dickinson’s posture statement he stated that U.S.SPACECOM is committed to assuring the safe exploration of space and is supporting the planned lunar missions. Can you please describe at the unclassified level any new capability requirements that you’ve identified that extend beyond our traditional orbits and near the lunar region?

Question #2: What requirements has U.S.SPACECOM set to establish lunar ISR capabilities to monitor the lunar surface for peer adversary activity? We understand that the answer will be classified.

General DICKINSON. The traditional orbits of focus range from Low Earth Orbit, starting around a few hundred kilometers in altitude, out to Geosynchronous orbit at 35,000+ kilometers altitude. We understand those orbital regimes well and are building upon the considerable assets dedicated to monitoring activity in those and other traditional orbits. There remains the need for additional sensors to close any gaps in coverage and provide better space domain awareness of all activities by all countries. The problem compounds significantly when we extend operations to Cislunar space, with a tenfold increase in range, one-thousand times the volume, and more complex orbital dynamics. To cover such a vast volume of space, we need significantly more capable and more numerous sensors. We need sensors that are terrestrially-based, space-based in existing orbital regimes, based in Cislunar space, in lunar orbit, and in halo orbits around one or more of the Earth-Moon Lagrangian points. While these challenges are great, they are not insurmountable. We continue to work with industry and friendly partner nations to seek solutions to meet the challenge and allow us to gain and maintain space domain awareness out to Cislunar altitudes and beyond.

To date, U.S.SPACECOM has not set specific lunar surface ISR capability requirements. Consistent with operations in any other orbit, my primary aim is to establish and maintain responsible military behaviors in space and ensure space remains a peaceful domain for the benefit of all. This requires the ability to characterize activity in Lunar and Cislunar space, similar to our abilities in Low Earth Orbit, Medium Earth Orbit, Highly Elliptical Orbits, and Geosynchronous Orbit. Lunar and Cislunar ISR capability will require significant resource and policy support from Congress to pace Russian and Chinese efforts.

QUESTIONS SUBMITTED BY MR. BROOKS

Mr. BROOKS. One of the challenges of defending against hypersonic threats is being able to track these weapons for the duration of their flight. How are we doing with respect to getting the right sensors in place—including as part of the Hypersonic and Ballistic Tracking Space Sensor constellation—that will provide us with the capability to track and set a response to hypersonic threats?

Ms. DALTON. The Hypersonic and Ballistic Tracking Space Sensor (HBTSS) constellation, which is on track to enter orbit in late Fiscal Year 2023 and committed to capability, is one component of the Department’s National Defense Space Architecture (NDSA). The NDSA will initially consist of a few dozen satellites, launched into
low-Earth orbit (LEO) over the next two years. Although this proliferated LEO architecture is in its initial stages, it will provide critical tracking capability against hypersonic threats in all phases of flight. HBTSS is unique in that it will provide fire-control-quality track data to the missile defense system, enabling enhanced defense against regional hypersonic threats in the terminal and glide phases of flight. As we continue to prove this capability, the architecture will expand and further bolster the nation’s sensing capabilities and the defense of U.S. and coalition forces deployed abroad.

Mr. BROOKS. Can you please contextualize the role of our hypersonic weapons in the spectrum of conflict?

Admiral RICHARD. Hypersonic weapons (HSWs) provide a highly responsive, long-range, conventional strike capability for distant, defended, or time-critical threats when other forces are unavailable, not responsive enough or not preferred. Fielding hypersonic strike capabilities allows for tailored strategies and operational plans with an expanded range of conventional options. While not a replacement for nuclear weapons, HSWs will complement and enhance strategic deterrence and can deliver surgical strikes to provide effects or be integrated into larger campaigns, increasing the effectiveness of our traditional warfighting advantages.

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Admiral RICHARD. Holistically, DOD is modifying/upgrading existing sensors to enhance layered defense, and improving reporting and display tools to support senior leader decision making. Additional efforts include MDA’s selection of two industry partners for an on orbit Hypersonic and Ballistic Tracking Space Sensor demonstration launching in FY23, with a full constellation deployment decision to come at a later date. To protect against hypersonic threats, we must continue initiatives to develop a space-based sensor architecture to persistently detect, track and discriminate advanced missile threats, including hypersonics. To set a response, we must develop an interceptor capability and pursue next-generation capabilities such as directed energy, boost phase intercept, and non-kinetic effects.