

[H.A.S.C. No. 118-72]

HEARING
ON
NATIONAL DEFENSE AUTHORIZATION ACT
FOR FISCAL YEAR 2025
AND
OVERSIGHT OF PREVIOUSLY AUTHORIZED
PROGRAMS
BEFORE THE
COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES
ONE HUNDRED EIGHTEENTH CONGRESS
SECOND SESSION
SUBCOMMITTEE ON STRATEGIC FORCES HEARING
ON
**FISCAL YEAR 2025 BUDGET REQUEST
FOR MISSILE DEFENSE AND
MISSILE DEFEAT PROGRAMS**

HEARING HELD
APRIL 12, 2024



U.S. GOVERNMENT PUBLISHING OFFICE

57-193

WASHINGTON : 2025

SUBCOMMITTEE ON STRATEGIC FORCES

DOUG LAMBORN, Colorado, *Chairman*

JOE WILSON, South Carolina
MICHAEL R. TURNER, Ohio
ELISE M. STEFANIK, New York
SCOTT DESJARLAIS, Tennessee
DON BACON, Nebraska
JIM BANKS, Indiana
MICHAEL WALTZ, Florida
DALE W. STRONG, Alabama

SETH MOULTON, Massachusetts
JOHN GARAMENDI, California
DONALD NORCROSS, New Jersey
SALUD O. CARBAJAL, California,
RO KHANNA, California
CHRISSY HOULAHAN, Pennsylvania
GABE VASQUEZ, New Mexico
MARC VEASEY, Texas

PETER SCHIRTZINGER, *Professional Staff Member*
MARIA VASTOLA, *Professional Staff Member*
OWEN MCGEARY, *Research Assistant*

CONTENTS

	Page
STATEMENTS PRESENTED BY MEMBERS OF CONGRESS	
Lamborn, Hon. Doug, a Representative from Colorado, Chairman, Subcommittee on Strategic Forces	1
Moulton, Hon. Seth, a Representative from Massachusetts, Ranking Member, Subcommittee on Strategic Forces	2
WITNESSES	
Collins, Lt Gen Heath A., USAF, Director, Missile Defense Agency	6
Gainey, LTG Sean A., USA, Commanding General, U.S. Army Space and Missile Defense Command	8
Hill, John D., Deputy Assistant Secretary of Defense for Space and Missile Defense, Office of the Under Secretary of Defense for Policy	5
James, LTG Thomas L., USA, Deputy Commander, U.S. Space Command	9
APPENDIX	
PREPARED STATEMENTS:	
Collins, Lt Gen Heath A.	51
Gainey, LTG Sean A.	70
Hill, John D.	35
James, LTG Thomas L.	83
DOCUMENTS SUBMITTED FOR THE RECORD:	
[There were no Documents submitted.]	
WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING:	
[There were no Questions submitted during the hearing.]	
QUESTIONS SUBMITTED BY MEMBERS POST HEARING:	
Mr. Moulton	97
Mr. Carbajal	97
Mr. Bacon	99

FISCAL YEAR 2025 BUDGET REQUEST FOR MISSILE DEFENSE AND MISSILE DEFEAT PROGRAMS

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON STRATEGIC FORCES,
Washington, DC, Friday, April 12, 2024.

The subcommittee met, pursuant to call, at 9:44 a.m., in room 2212, Rayburn House Office Building, Hon. Doug Lamborn (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. DOUG LAMBORN, A REPRESENTATIVE FROM COLORADO, CHAIRMAN, SUBCOMMITTEE ON STRATEGIC FORCES

Mr. LAMBORN. The meeting will come to order.

Thank you all for being here. Thank you for your patience while we finished a vote series the last few minutes.

First of all, before we do anything else, I am going to ask unanimous consent that non-subcommittee members be allowed to participate in today's hearing after all subcommittee members have had an opportunity to ask questions.

Is there any objection?

If not, so ordered. So non-subcommittee members will be recognized at the appropriate time for 5 minutes.

Welcome to our hearing. And thank you, witnesses, for being here. We have, Mr. John Hill, the Deputy Assistant Secretary of Defense for Space and Missile Defense Policy. Joining him, we have Lieutenant General Thomas James, the Deputy Commander of the U.S. Space Command; Lieutenant General Heath Collins, the Director of the Missile Defense Agency; and Lieutenant General Sean Gainey, the Commander of U.S. Army Space and Missile Defense Command.

The subcommittee meets today to review the Department's fiscal year 2025 budget request for missile defense capabilities. I have a number of concerns just right off the bat here. First, the overall level of funding is inadequate given today's threat environment. The fiscal year 2025 budget requests \$10.4 billion for the Missile Defense Agency. That is more than \$400 million less than last year and almost \$1 billion below the level projected for fiscal year 2025 and last year's FYDP [Future-Years Defense Program].

I want to reiterate this point. The fiscal year 2025 budget request for the Missile Defense Agency is \$960 million, almost \$1 billion below the level planned for in last year's budget. Further, these draconian cuts are not limited to just fiscal year 2025. The outyear spending projections included in this budget envision continued reductions in missile defense spending.

Compared to the spending plan in the budget submitted last year, this budget forecasts cutting over \$2.6 billion in missile defense funding between fiscal year 2025 and fiscal year 2028. To achieve these cuts, this budget would make several concerning decisions, including terminating the production line for SM-3 Block 1B interceptor and eliminating competition by prematurely down selecting to single contractors on both the next generation interceptor and Glide Phase Interceptor programs.

I know we will get into these issues in greater detail, but in the case of the Glide Phase Interceptor, I think it is important to note that this down selection is occurring 5 years earlier than planned and before the preliminary design review is even held. I am extremely concerned that we will simply not have enough sufficient technical data to make an informed choice between competing concepts for this program.

The Glide Phase Interceptor is the only capability in development specifically designed to combat the growing hypersonic threats we face. It is vitally important to our national security that we get this program right. We should be investing in a robust program that delivers an effective capability to our warfighters on a schedule that meets the threat. That is why Congress mandated in section 1666 of last year's defense authorization bill, but this budget would do the opposite.

Overall, I am concerned that these decisions simply accept too much risk and that missile defense appears to have become a bill payer for other capabilities in this budget. This is difficult to understand given the growth in missile threats, the extremely high demand for missile defense capabilities from combatant commanders, and the visible evidence of the value these capabilities bring to the fight on full display as we speak in the Red Sea and in Israel and Ukraine.

I look forward to hearing more from our witnesses about how this budget impacts their programs and their assessment of the risks contained in this budget.

With that, I turn to the ranking member for his opening remarks.

**STATEMENT OF HON. SETH MOULTON, A REPRESENTATIVE
FROM MASSACHUSETTS, RANKING MEMBER, SUB-
COMMITTEE ON STRATEGIC FORCES**

Mr. MOULTON. I thank you, Mr. Chairman.

And I will just begin by echoing many of your concerns. This is obviously a time when missile defense is in use all around the globe, including by the United States, in great, great quantity. This is not a technology that seems to be fading away, and I think my biggest concern is that I just don't understand the rationale behind many of these cuts.

Now, I have asked a lot of tough questions of leaders like yourself, Mr. Hill, in particular, about the purpose of hypersonics. It is in that same vein. We don't understand what exactly the operational concept is to use hypersonics. That makes it hard to understand the money we are spending on it. But likewise, as the chairman said, if we don't understand why—or we don't understand the

rationale behind these cuts, it becomes very hard to support them, especially in this environment.

I want to welcome both Lieutenant General James and Lieutenant General Collins, as this is the first opportunity to testify in front of the subcommittee in your new roles.

Lieutenant General James, Space Command's role is increasing in both importance and consequence. And given that Space Command was recently given responsibility for Department-level missile defense coordination, it is critical that you and we understand the complex strategic role missile defense plays in our national security. You are the first Army space operator to reach the rank of Lieutenant General, so you must be doing something right. FA-40s have been an exemplar in the Department, and this milestone is well overdue, so congratulations.

Lieutenant General Collins, your unique background across the spectrum of strategic programs, including space, nuclear weapons, and missile defense, makes you well prepared to be director of the Missile Defense Agency. I am encouraged by our initial discussions that it is imperative that we understand the larger policy implications of what MDA [Missile Defense Agency] is developing before we blindly build new systems that could inadvertently further the proliferation of missile technology or, in the absolute worse case, result in destabilization, miscalculation, and escalation to nuclear war.

As I shift to the topic of today's hearing, I want to remind the subcommittee that missile defense has a mixed legacy and continues to pose difficult questions about what its purpose is and should be, under what conditions it actually makes us safer, and how much and what kind of it we need. That is why these questions, including what the chairman started with, are so important.

As I laid out last year, there are five basic scenarios or levels at which we consider using or not using missile defense. Behind me is a graphic depicting these levels, which I will use to frame the rest of my remarks.

The highest level of missile defense, it has been longstanding policy across nearly every administration that we are not and will not pursue missile defense to defeat a near-peer nuclear attack. Despite attempts to change U.S. policy during last year's NDAA [National Defense Authorization Act] cycle to specifically do so, going down this road would be incredibly destabilizing, technically challenging, and prohibitively expensive.

Until we can safely rid the world of all nuclear weapons, which I believe is ultimately necessary for the survival of humanity itself, we can neither unilaterally disarm nor unilaterally render useless our adversaries' arsenals. If we were to try to render all of our adversaries' missiles incapable through increased missile defenses, they would simply do what they have arguably already done, develop new, more complex missiles to defeat those systems. Mutually assured destruction sounds like a crazy concept when you first read about it, but it has fundamentally kept us safe.

The fourth level of missile defense is the area where there is the most debate. This is where we can argue that our advancements in missile defense over the past two decades since pulling out of the ABM [Anti-Ballistic Missile Treaty] treaty have provided a

greater security blanket against aspiring nuclear powers like North Korea and Iran.

However, as North Korea, or the DPRK [Democratic People's Republic of Korea], continues to expand their ballistic missile and nuclear arsenals, we must continually evaluate when we view them as more of a strategic-level threat and, therefore, rely on a policy of nuclear deterrence, instead of simply trying to outnumber their ICBMs [intercontinental ballistic missiles] with interceptors, such as the next generation interceptor program intends to do.

If we decide to continue to outpace their ballistic missile expansion, the question is, how do Russia and China respond? I have argued that they will certainly see that growth as directly affecting the credibility of their own nuclear forces, which may have dire unintended consequences.

I hope that in today's discussion, Mr. Hill, you can help us understand how the Department continues to weigh those questions and that balance. As this subcommittee evaluates this year's budget request and the continued missile defense policy and posture of the United States, we must understand these implications for ensuring the strategic stability of America and the world for decades to come.

Now, level three is a nuance that I think is important to distinguish from a rogue nation, because the size of the system required to deal with it is very different, but continuing to have some capability to defend against a small, even single accidental launch should be maintained.

At level two, the tactical level, the incredible support Ukraine has received from allies and partners in air and missile defense has enabled them to fight back against near-nonstop Russian missile attacks for the past 3 years. Though if this body cannot get its act together and pass the languishing supplemental, this is the area in which Ukraine will suffer the most and will have direct impacts on their ability to maintain their sovereign country and territory.

In the Red Sea, we are seeing what many thought was not possible—multinational, coordinated, and effective missile defense—and obviously this is using a lot of missiles, which is one of the questions we have about reducing the budget. While U.S. Navy ships have been at the center of defending deployed forces, allies, partners, and commercial shipping vessels from a wide range of air-breathing and ballistic missile threats, they have been working across the multinational task force.

The French, German, and U.K. [United Kingdom] Navies have all intercepted targets in the Red Sea. And while ideally I believe we need to move towards non-kinetic solutions that flip the cost curve of missile defense, something the chairman and I have been pursuing aggressively, no one can deny the incredible impact today's missile defense systems are having on the Middle East.

Finally, at the foundational level of missile defense, simply detecting these threats, we still have much work to do. However, this past year has marked many successes in domain awareness. In February, MDA's hypersonic and ballistic tracking space sensor prototypes were launched, and this budget supports their ongoing testing through 2027. The Space Development Agency also launched their wide field-of-view sensors, which will be a key com-

ponent of the next generation of missile warning and missile track architecture replacing the legacy, quote, big, juicy satellites currently on orbit.

As we evaluate the fiscal year 2025 request for missile defense programs, I will continue to ask the following questions: How will expanding U.S. missile defense today impact strategic stability tomorrow? We are already in an arms race. Will it make our world more safe? And does each investment stabilize or destabilize our strategic national security? These are the questions we must ask ourselves on this subcommittee, not just with an eye to this year's budget and the NDAA, but in determining how our decisions will impact the world we leave for our children.

Thank you, Mr. Chairman. I yield back.

Mr. LAMBORN. Okay. Thank you.

We will now move to opening statements from our witnesses. I would note that your prepared statements will be made part of the record, but you will each have 5 minutes to make some opening remarks.

Mr. Hill, let's begin with you.

STATEMENT OF JOHN D. HILL, DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR SPACE AND MISSILE DEFENSE, OFFICE OF THE UNDER SECRETARY OF DEFENSE FOR POLICY

Mr. HILL. Thank you, Chairman Lamborn and Ranking Member Moulton and distinguished members of the subcommittee, for the opportunity to testify today. Thank you as well for including my full statement in the record.

In brief, my written statement surveys threat developments in a deteriorating security environment. It stresses the unmistakable centrality of missiles of all types, including uncrewed aerial systems, or UAS, in modern warfare, and it underscores the indispensability of missile defense and missile defeat capabilities to deterring aggression and to defending our homeland, our forces deployed around the world, and our allies and partners. It highlights how those allies and partners have come to similar conclusions, are increasing their own investments, and are working with us to meet these challenges together.

The administration's defense budget request for fiscal year 2025 includes \$28.4 billion for missile defense and missile defeat programs.

I want to acknowledge at the outset of this hearing the strong support this subcommittee has consistently shown for missile defense and missile defeat efforts for many years. And I stand ready to work with you to pass defense authorization legislation for fiscal year 2025, the 64th consecutive year, and with all of Congress to pass on-time defense appropriations legislation for fiscal year 2025.

Today, I must also emphasize, perhaps more than anything else, the critical urgency of passing the national security supplemental request, which Congress has now had for nearly 6 months. That request includes desperately needed funding, funding to support Ukraine in defending its democratic sovereignty and its very existence against Russia's illegal and ruthless invasion and Russia's authoritarian aggression, including relentless barrages of missiles

and UAS attacks; funding to support Israel in defending itself against the continuing missile UAS and rocket attacks by Hamas and other groups aligned with Iran; funding to provide critical humanitarian assistance in Ukraine, Israel, and Gaza, where innocent civilians are dying every day; funding to support our Indo-Pacific partners in deterring aggression by the People's Republic of China; funding to replenish our own military supplies of munitions and other materiel that we have had to draw down to meet the urgent needs of allies and partners; and funding to invest in the capacity of the American industrial base and workforce that is producing these munitions and weapon systems, including missile defense systems, that are so vital to all of these American national security interests.

Chairman Lamborn and Ranking Member Moulton and distinguished members of this subcommittee, there is simply no more time for delay. The time to act is now. I cannot overemphasize. As General Cavoli said just the other day, I cannot overemphasize the critical importance of Congress coming together in common purpose and acting with urgency to pass the national security supplemental request.

Thank you again for convening this crucially important and timely hearing. Thank you for your attention. And thank you, each and every one of you, for what you do for your constituents and the Nation. I look forward to your questions.

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

Mr. LAMBORN. Thank you.
General Collins.

**STATEMENT OF LIEUTENANT GENERAL HEATH A. COLLINS,
USAF, DIRECTOR, MISSILE DEFENSE AGENCY**

General COLLINS. Thank you, Chairman Lamborn, Ranking Member Moulton, and distinguished members of the subcommittee. I appreciate your continued strong support for the missile defense mission and look forward to the questions today.

I would like to start out by thanking the men and women behind the development, delivery, and sustainment of the missile defense system that I represent today, our MDA family, and the operators of the system, all key partners in this no-fail mission.

As you mentioned, Chairman, we are requesting \$10.4 billion to develop and deploy homeland missile defenses and improve regional missile defenses against increasingly diverse and dangerous missile threats. Our prioritization of decisions will maximize missile defense system capability, capacity, and readiness. We continue to work closely with our combatant commanders and services to help prepare them to fight for the fight of today and tomorrow.

To defend our homeland from ballistic missile attack, the ground-based midcourse defense, or GMD system, remains our Nation's sole protection from limited attacks, with a primary focus being the advancing North Korean threat. The ongoing ground-based interceptor, or GBI, service-life extension program, will continue to improve the GBI reliability and will help mitigate risk until the next generation interceptor, NGI, is fielded by the end of 2028.

After 20 years, GMD stands ready, as shown in December of 2023, when we successfully executed a GMD intercept flight test using the two/three-stage selectable ground-based interceptor in two stage mode first, demonstrating increased engagement battle space. We plan to deploy this capability to the entire fleet by the end of this year.

The NGI program remains on track. Both prime contractors have successfully executed preliminary design reviews, or PDRs, and MDA is preparing in the near future to complete a best value determination and select a single company to continue NGI development, testing, production, and fielding.

Soon we plan to add the long-range discrimination radar, or LRDR, to MDA's operational capability baseline by December of this year. LRDR, delivered to the government last month, will enhance tracking discrimination and hit assessment against long-range missile threats. Additionally, the Space Force and MDA are in the process of formally declaring LRDR ready for space object detection later this month.

For regional defense, MDA continues to design improvements to the Aegis ballistic missile defense capability and procure the Standard Missile-3 Block 2A missiles. In fiscal year 2025, we will also test and deliver SPY-1 radar upgrades and support the Navy in future space domain awareness demonstrations.

We will continue U.S. terminal high-altitude aerial defense, or THAAD, interceptor procurement, fielding and training support, along with reliability in cybersecurity improvements. In collaboration with the U.S. Army, we have fielded the THAAD 4.0 capability to batteries in Korea and on Guam and are in the process of fielding 4.0 to the all-remaining THAAD batteries by the end of 2025. THAAD 4.0 integrates Patriot capabilities with THAAD to increase Patriot-Defended area and engagement opportunities. We will also begin design work to improve the THAAD system to take on ever-advancing regional threats.

The Department continues development of a 360-degree layered missile defense capability for Guam. MDA construction on the Joint Command Center AN/TPY-6 radar site and launch site will begin in fiscal year 2025. And by the end of this year, we will execute a flight experiment with the SM-3 Block 2A against a medium-range ballistic missile target controlled with the initial Aegis Guam system using the first TPY-6 transportable array unit.

Looking forward, MDA continues to pursue end-to-end capabilities to defeat the serious challenge posed by hypersonic maneuvering threats. Today, our sea-based terminal defenses protect assets at sea and forces ashore from hypersonic threats. Working with the Navy, we anticipate delivering follow-on increment three capabilities in fiscal year 2025.

The Glide Phase Interceptor program, or GPI weapons system, will enable layered defense against hypersonic glide threats. By the end of fiscal year 2024, in coordination with our future international partner Japan, MDA will select a single GPI interceptor design to complete development. We will continue to develop a mature GPI capability and support the planned cooperative development of that Glide Phase Interceptor with Japan.

On the detection and tracking part of the kill chain, as mentioned by Ranking Member Moulton, we launched the hypersonic and ballistic tracking space sensor, or HBTSS, prototype satellites in February to demonstrate fire control solutions generated against hypersonic maneuvering threats. Following successful demonstration of HBTSS, the responsibility for fielding HBTSS like fire control capabilities will be transferred to Space Force.

I am honored by this opportunity and look forward to your questions.

[The prepared statement of General Collins can be found in the Appendix on page 51.]

Mr. LAMBORN. Thank you.

General Gainey.

**STATEMENT OF LIEUTENANT GENERAL SEAN A. GAINNEY, USA,
COMMANDING GENERAL, U.S. ARMY SPACE AND MISSILE DE-
FENSE COMMAND**

General GAINNEY. Chairman Lamborn, Ranking Member Moulton, and distinguished members of this subcommittee, I am honored to testify before you and represent this incredible one-team organization of 2,300 soldiers and civilians, spanning 13 time zones and 19 locations worldwide. These professionals tirelessly provide space, high-altitude, and missile defense forces and advance capabilities to the Army and joint warfighter. I am honored to represent them, and I thank you for your unwavering support for this team and their families.

In January, I took command of the U.S. Army Space and Missile Defense Command and Joint Functional Component Command for Integrated Air and Missile Defense, also known as JFCC-IMD, also acting as the senior commander for both Fort Greely, Alaska, and U.S. Army Garrison Kwajalein Atoll. Additionally, I also serve as the Army's lead enterprise integrator for air and missile defense, and my organization, JFCC-IMD, provides operational-level missile defense expertise and integrates trans-regional missile defense functions across the joint and combined warfighting force.

As the Army's air and missile defense enterprise integrator, today I will use this role to leverage and highlight the Army air and missile defense remains the Army's most heavily deployed force with the highest demand signal amongst the combatant commands every year. This high op tempo continues to provide a significant strain on our formations and families, and we must continue to address their needs.

As you know, the urgency for multi-domain, trans-regional combat effects continues to increase exponentially. Our adverse air and missile defense-related threats have rapidly expanded in recent years in quantity, variety, and sophistication, rapidly expanding their space R&D [research and development], instigating cyber attacks, and test complex missile systems. We see this today in Ukraine and looming on the horizon in the Pacific. It has never been more imperative that we and our allies and partners enhance our missile defense and space capabilities to impose costs on our adversaries, denying them the benefits of using these weapons and ensuring the safeguarding of our Nation.

As our adversaries increase their emphasis on space and missile capabilities, the U.S. Army grows in kind. In December, the Secretary and Chief of Staff of the Army and the Sergeant Major of the Army signed the Army space vision supporting multi-domain operations, specifying the Army's role in integrating space capabilities into joint and coalition operations while also interdicting the space capabilities of adversaries.

It is also increasingly apparent that integrating our space operations and missile defense operations is of critical importance to our national security. Our integration is essential to effectively contribute to strategic deterrence and respond in crisis. What worked for yesterday's military must evolve.

Today, we must integrate space and missile defense at the very onset of our prototyping, concept development, and application. And we do it all in concert with our Army joint and coalition partners, one voice together around the globe. Our allies and partners are critical for layered and tiered operations to degrade, disrupt, and defeat adversaries, share burdens, integrate technology, and protect our mutual homelands.

But all these operational considerations pale in comparison to the will, determination, and the trust the amazing men and women that operate and sustain these advance systems. These soldiers and their families make life-altering sacrifices to serve across the globe. Thank you for your efforts in supporting them with timely budget, caring for them and their families, and building trust with the American people now and in the years to come. Caring for our soldiers and their families is paramount to win in any environment around the globe.

Thank you for supporting such an incredible mission-ready team. I look forward to addressing your questions.

Thank you.

[The prepared statement of General Gainey can be found in the Appendix on page 70.]

Mr. LAMBORN. Thank you.

General James.

**STATEMENT OF LIEUTENANT GENERAL THOMAS L. JAMES,
USA, DEPUTY COMMANDER, U.S. SPACE COMMAND**

General JAMES. Good morning, Chairman Lamborn, Ranking Member Moulton, and distinguished members of this subcommittee. It is an honor to be here today representing General Whiting and the nearly 18,000 soldiers, sailors, marines, airmen, guardians, DOD [Department of Defense] civilians and contractors of the United States Space Command. Our expertly trained and mission-focused workforce remains our most valuable asset.

As you have heard from my distinguished colleagues here on the panel, our strategic competitors' offensive missile systems are significantly increasing in capability and scale. They will challenge our ability to conduct operations and protect and defend U.S. and our allies' vital interest. Our competitors are rapidly evolving, diversifying, and proliferating their inventories of advanced missiles and technologies. Hypersonic glide vehicles and cruise missiles pose diverse threats that will complicate our missile warning and missile defense missions.

In April 2023, the Unified Command Plan assigned United States Space Command with the responsibility for trans-regional missile defense planning and operational support. That decision was the culmination of a comprehensive study in alignment with numerous policy documents and with the 2022 Missile Defense Review. This was a natural fit given our Unified Command Plan responsibilities, such as space operations and global sensor manager, as the missile defense mission continues to converge with the space missions.

Part of the transition of trans-regional missile defense planning and support missions included alignment of the Joint Functional Component Command for Integrated Missile Defense under U.S. Space Command, commanded by my good friend, Lieutenant General Sean Gainey. JFCC-IMD ensured the continued execution of the responsibilities during the transition without any mission degradation. We, the United States Space Command, have integrated JFCC-IMD into our command structures and processes and are exploring ways to further optimize their execution of critical missions.

As the global sensor manager, USSPACECOM [U.S. Space Command] is responsible for planning, managing, and overseeing the operations of all assigned space domain awareness, missile defense, and missile warning sensors. Our terrestrial sensors are a critical enabler to the combatant command and national-level military command centers, most performing missile warning, missile defense, and space domain awareness mission simultaneously.

Our space-based sensors provide the first alert of a missile launch from anywhere on the planet. They provide this to our national leaders, the National Military Command System, combatant commands, and select international partners. USSPACECOM employs a joint, combined, and partnered approach to our operations, which expands our access to sensors and their information. This includes our Combined Space Operations Center's Commercial Integration Cell and our National Space Defense Center's Joint Commercial Operations Cell, commensurate with the Department's recently published Commercial Space Strategy. The JCO [Joint Commercial Operations] also includes 14 allied partners that are fully integrated into our space domain operations.

It is vital that we keep pace with the emerging threats and technologies while ensuring that our sensor architecture remains optimized and modernized. While we pursue integrating new capabilities, we must still aggressively leverage and integrate our legacy sensors in support of our critical missile warning and missile defense functions today as part of a comprehensive missile defeat strategy.

Continued funding for research and development for the next generation of space-based and terrestrial sensor systems is critical to keep pace with the competitors and the potential adversaries that we face today. These capabilities must be resilient, and we must be able to defend and reconstitute them to achieve space across domain mission assurance for the Joint Force.

In closing, the 2022 Missile Defense Review states, "It is a strategic imperative of the United States to continue investments and innovation in the development of full-spectrum missile defeat capabilities to maintain deterrence and offer protection while hedging

against uncertainty. Consistent with the Missile Defense Review, the Department must explore and enact the full range of capabilities to counter advanced adversary offensive missiles and hybrid threats across the spectrum of conflict.

U.S. Space Command with fellow combatant commands, services, allies, and interagency, and commercial partners stands ready to perform our unified command plan responsibilities to maintain and expand our competitive advantage. USSPACECOM appreciates Congress' continued support as we ensure the delivery of space-based capabilities and achieve our foundational moral responsibility to protect the Joint Force, the Nation, and our allies through all levels of competition and conflict.

I have submitted my written statement for the record. Thank you, and I look forward to your questions.

[The prepared statement of General James can be found in the Appendix on page 83.]

Mr. LAMBORN. Thank you.

We will now go to questions from the panel—from the committee.

General Collins, as I talked about in my opening statement, I am very concerned about the Glide Phase Interceptor. Last year, the program planned to continue development and to maintain competition between two industry teams for at least another 5 years. A preliminary design review, or let's say PDR, was planned for 2029 with the potential down-select decision following PDR. Now, the program is planning to select a single contractor this year without the development activity to prove out new technologies and with a lot less information.

First, a general question. Competition in a program reduces risk, drives innovation, and helps ensure the government is getting a good value. Wouldn't you say that, in general, that is a fair statement?

General COLLINS. Yeah. Mr. Chairman, as a career acquisition officer, competition within an acquisition strategy does buy down risk, keeps both teams sharp throughout the acquisition, and intends to—it is a best practice within the Department, yes, sir.

Mr. LAMBORN. Okay. Thank you.

So how concerned are you then that making a down-select decision this early in the program will increase risk?

General COLLINS. Sir, that is a job that we will be attacking greatly now with the decision that will be coming later this fiscal year. There are other mechanisms to manage competition and risk within a program lower than the prime level. We certainly will be looking forward to keeping the program on pace and, based on section 1666, look for opportunities to bring hypersonic capability to the fight much sooner.

With the GPI program as established today, working with our soon international partner Japan, we will continue to look for opportunities to buy down that risk judiciously, potentially with competition at a lower level within—at the component or subsystem level.

Mr. LAMBORN. Okay. So let's dive a little bit more into that. What concrete steps—and you have already alluded to some—can we take to mitigate this risk or to give ourselves options if technology development doesn't go as planned?

General COLLINS. Yes, sir. Much of this is—as part of the decision to come with down selecting, we are in the midst of upgrading our acquisition strategy and finalizing the decision criteria for making this decision. Part of that will be finalizing in taking a look at how to establish the program and, going forward, depending on the selection and the risks associated with that particular prime, we will then have to take a look at, with the prime, the steps that would be taken. Each prime has a different set of risks based on their designs and that we would have to specifically identify, based on the decision, which one would drive what decisions and actions we would take going forward.

Mr. LAMBORN. Well, I still am concerned. I know that you will do your best to play the hand of cards that you have been dealt, but I really am concerned about this. I just think we are taking on too much risk that we otherwise would be able to mitigate through continuing the competition more into the future.

This leads to my next set of questions about the program schedule. You would think that if the program had advanced sufficiently and technology is mature enough for the government to select a single prime contractor 5 years earlier than originally planned, that we would be in a position to accelerate the schedule, but it looks like the opposite is happening.

In last year's hearing, your predecessor, Admiral Hill, and I discussed the program's schedule and how delivering a capability in 2034 was not adequate. He agreed and said, quote, "Out in the mid-30s is almost irrelevant. We are not meeting the threat," unquote. But this year's budget would add additional delay, and now does not anticipate deploying a capability until 2035.

Do you share Admiral Hill's view that this makes it irrelevant to go more than 10 years into the future?

General COLLINS. Sir, I definitely agree with waiting 11 years to bring a hypersonic glide phase capability to the warfighter is too long, and looking into options within the GPI program and other options, that could bring an interim capability sooner. We do have a requirement to come back with those options to you, and we are working through that. And a report will be provided by September that goes through those different option spaces, both within the GPI program and broader across the missile defense enterprise to try to get any capability we can out of the weapon systems we have and also into the future with a GPI program.

Mr. LAMBORN. What can you tell us in this setting for the record that you will do specifically? You already alluded to the intention to try to accelerate some things, but what are concrete steps that you are going to be able to take or plan to take?

General COLLINS. Yes, sir. Right off the bat, one is we have engaged with both of our primes that we have on the GPI program today to identify opportunities that they see within their industry space and their broader enterprises to come up with acceleration options that we could be taking within the program, within the GPI program. Otherwise, I am also looking across at other weapon systems that we have in place today to understand what, if any, residual capability they may have and/or what potential developments, smaller developments could we take within those other

weapon systems that could bring some type of residual capability or interim capability to the fight.

Mr. LAMBORN. Okay. Thank you. I will end my questions there, but I will just quickly summarize my concerns.

This budget, as proposed, cuts the funding, delays the schedule, and adds risk to the acquisition approach. I understand that it will save some dollars and is cheaper, but I am just not sure it will even lead to success in the long run, much less address the threats in the meantime.

With that, I turn to the ranking member for any questions he might have.

Mr. MOULTON. Thank you, Mr. Chairman. I certainly share some of these same concerns.

Lieutenant General Collins, Lockheed's F-35 and Northrop Grumman's Sentinel are two examples of programs that currently have zero competition and are grossly over budget and grossly behind schedule. Now, you have extensive acquisitions experience. Can you cite an example of a program that benefited from down selecting and reducing competition early? When has such a reduction in competition fielded a better technology faster and it reduced cost?

General COLLINS. Ranking Member Moulton, thank you for that question. Um——

Mr. MOULTON. Well, I think the silence speaks volumes. Let's move on.

Mr. Hill, the Department indicated to this committee that cancellation of the SM-3 Block 1B was done in part to purchase more SM-3 Block 2As. We will set aside that there are no additional 2As in this budget request and focus on the policy issues I have continued to raise. Is it accurate to say that SM-3 Block 1B is solely a regional missile defense asset?

Mr. HILL. SM-3 Block 1B is for regional missile defense against medium-range ballistic missiles.

Mr. MOULTON. Is it also accurate to say that SM-3 Block 2A has been proven to intercept an ICBM-range threat, the type of threat designed to be handled by the ground-based midcourse defense system?

Mr. HILL. I believe from a kinematic perspective it has been shown to be able to intercept at that beginning edge——

Mr. MOULTON. Right.

Mr. HILL. —but it is—the operational concepts for it are as a regional missile defense missile. It is mostly for medium-range and——

Mr. MOULTON. Right. But I am just asking about its ability.

Mr. HILL. I believe as a test—there was a test that was done——

Mr. MOULTON. Yeah. That is a very long way of saying yes.

Mr. HILL. Yeah.

Mr. MOULTON. So my question is: was there a policy evaluation done on how our adversaries, to include China, Russia, North Korea, would respond to a further increase of SM-3 Block 2As, which have capability against a strategic missile, in lieu of the 1B variant, which does not?

Mr. HILL. Yeah, that was done before my time doing this, but I think the implications of the SM-3 2A, which you are talking

about, being deployed in fleets at different places around the world is not something that should logically cause China or Russia to have any concerns from a strategic stability perspective.

Mr. MOULTON. Well, if you could provide that report to the committee, it would be helpful. When you said there was some analysis done——

Mr. HILL. No, the decision and that test was before I was doing the missile defense business, so I can look into the history of what was done there.

Mr. MOULTON. Well, look, the point is that what matters here for strategic stability is not just what we think is perfectly logical but what our enemies think, and we have to consider these concerns when we are making these budgetary decisions. I think, you know, SM-3 Block 2As have an important role, but the quantities we are currently buying are about a third of what was intended for the 1B. And if we suddenly reverse that and triple our 2A buy, we could very well embolden our adversaries to further proliferate and advance their technology in a way that not only makes our regional defense posture weaker at a time where regional missile defense is of prime importance, but also impact stability at their strategic level.

I also get the sense that this decision was not thought through on an operational business. I mean, General Collins, from your perspective, is a future Navy fleet equipped with primarily SM-6 interceptors and some SM-3-2A interceptors consistent with the direction you see the threat going?

General COLLINS. Sir, Ranking Member Moulton, good question. What I would take is, I would be concerned with the capacity of capabilities that are in a fleet and our ability to support with enough 2As moving forward given the capacity that we take from that production line today.

Mr. MOULTON. Well, we obviously share those concerns.

General Collins, has MDA completed analysis of the impacts on this decision on its ability to support and sustain the current inventory of 1Bs, meet the needs of allies, and support the Navy's requirements? Has that analysis been completed?

General COLLINS. Sir, we have not completed that analysis. We have been waiting for the 2024 appropriation to understand the amount of money we were going to get within the SM-3 1B line to support the negotiation for an additional lot of 1Bs. That work is going on currently today to understand the impact to both the 1B final lot as well as the future of the 2A line, all of that to inform what type of sparing would we require within the 1B line to support the lifecycle of 1Bs.

Mr. MOULTON. Well, I think, to quickly summarize as the chairman did, we both share a concern about the lack of competition. That seemed to be echoed by your silence. We both share concern about simply the magazine capacity that we have if we are reducing the number of regional defense assets we have at a time when we are using them quite regularly. And I have additional concerns about what this all means for our strategic stability that it just sounds like have not been analyzed or even considered carefully. So we have a lot of questions, and I think that is important.

Just one final question. Lieutenant General Collins, there have been a lot of discussions from this subcommittee about the potential need for a third CONUS [continental United States] interceptor site. Has JROC [Joint Requirements Oversight Council] validated any sort of requirement for a third site?

General COLLINS. No, sir, there is no requirement.

Mr. MOULTON. If they were to validate such a requirement, is the location that was looked at almost 10 years ago at this point still where you believe that third site should be located, as the last study explicitly indicated that MDA would need to relook at the analysis prior to moving forward with any sort of program once you had a requirement?

General COLLINS. Sir, that is correct. We would take a look as, if a requirement for an East Coast site was identified as a requirement and validated. As mentioned when the final report came out, we would take a look at the current threat, the current performance of the system, the current state of affairs to assess and evaluate what that optimal site would be.

Mr. MOULTON. Right. So just to summarize, as of right now, you don't need a third site. If you were to need a third site, you wouldn't just go with what was selected 10 years ago, you would do another analysis.

And, Mr. Hill, I would just add, I hope that we would, per my questions about strategic stability, look at the implications of a third site on the views of our adversaries.

Mr. HILL. That is correct. The focus on a third site would be the things we are already investing in rather than a third site.

Mr. MOULTON. Great.

Thank you, Mr. Chairman. I yield back.

Mr. LAMBORN. Thank you.

Representative DesJarlais.

Dr. DESJARLAIS. General Collins, hypersonics have completely upended our prior conception of the global missile threat landscape with our ability to evade our legacy detection systems, and we are now in a position where we are playing catchup both in our ability to detect and defeat these novel capabilities. Can you update our committee on how you are addressing the issue of detection first with the capabilities like hypersonic and ballistic tracking space sensor satellites? And how are you collaborating with SDA [Space Development Agency] on these and other efforts pertaining to hypersonic missile defense?

General COLLINS. Thank you, Congressman, for the question. Hypersonic missile defense is certainly a key focus of the Missile Defense Agency and protecting our warfighters as we move forward. The hypersonic ballistic tracking space sensor that I mentioned in my opening statement and you just mentioned, that is a prototype set of satellites to demonstrate our ability in the technology to from space detect, track, and close the fire control loop against a hypersonic threat, to take a hypersonic threat and track it throughout its entire launch, from launch to intercept.

That is a key aspect of our future ability to detect and eventually intercept hypersonic weapons anywhere on the planet in the future. To get there, we have worked very closely with the Space Development Agency. They would be the operational transition agent for

us to take HBTSS and include it within the future proliferated warfighting space architecture. We have been working very closely with them, also the Space Warfighting Analysis Center, the SWAC, part of the Space Force. We have been working with them to ensure that our long-term fire control requirements are included within the force design of any future space architecture.

And so with those relationships within Space Force, we are ready when we complete the demonstration later this year to transition into the proliferated warfighting space architecture tracking layer to pick up on the hypersonic fire control tracking requirements for Missile Defense Agency.

Dr. DESJARLAIS. Okay. On the Glide Phase Interceptor, where are we at?

General COLLINS. Yes, sir. We have two primes awarded on other transaction authority agreements, and both are proceeding post-system requirements review and working to finalize designs, as well as tech maturation for each of their designs. There is a good amount of tech maturation of the design in the integration of the system that are being worked on.

Dr. DESJARLAIS. Okay. Is an acceleration research on hypersonic defense options necessary, and is it technologically feasible?

General COLLINS. Sir, we believe hypersonic defense is feasible. We have, today, a terminal case ability—capability to intercept hypersonic threats within the SM-6 sea-based terminal capability within the Aegis weapon system. So we are already fielded capability to intercept hypersonics in the terminal phase.

Glide Phase Interceptor, we have identified the technology areas that need to be matured within that program to do glide phase intercept farther away from the intended target, and we are in the midst of burning down all of those technologies to be able to field this capability. So, yes, we believe that technology exists with some maturation to come, but we do believe hypersonic glide phase intercept capabilities is feasible.

Dr. DESJARLAIS. Okay. Mr. Hill, what is the Department's policy on how the U.S. will address near-peer hypersonic threats to the homeland?

Mr. HILL. As General Collins just described, we are investing in capabilities as Congress directed. We created—we designated the Secretary of the Air Force for leading the cruise missile defense of the homeland project and, of course, Glide Phase Interceptors, many of them are cruise missiles. So we will defend them against that, recognizing that in many cases this is something that an adversary is using and developing, not in the context of a nuclear strike, but in the context of potentially defeating our ability to respond. We want to demonstrate that, no, we have the ability to follow up on the commitments we have made, and that means we will defend critical infrastructure in the United States.

Dr. DESJARLAIS. Thank you. I yield back.

Mr. LAMBORN. Thank you.

Representative Norcross.

Mr. NORCROSS. Thank you, Chairman, Ranking Member, for today's hearing, and certainly the witnesses.

We have had a number of discussions on this committee that talked about the ability to produce the weapons we need, the interceptors and, quite frankly, the entire industrial base.

Mr. HILL, today you talked about the investment in that industrial base. So just for the sake of an argument, let's assume we have the technical expertise to design and build and we might be able to build a prototype. When you look across the U.S. missile industrial base and the workforce, are you comfortable with where we are in terms of being able to produce the numbers that we are talking about?

Mr. HILL. I think—I am concerned that we have taken a bit of a holiday and that we are playing some catchup here. I am concerned that we have an adversary in Russia that is on a war footing in Ukraine, and we and our allies in Europe all need to look more carefully at the investments and improve our abilities to replenish when we draw down munitions and other key systems.

Mr. NORCROSS. So you talked about the investment in the industrial base. What specifically would you point to in this budget that is actually going to mitigate some of those concerns?

Mr. HILL. You know, I think it is—there are—focused particularly on munitions area and expanding capacity, and some of that is a function of when you are buying in larger quantities, when you are buying with using the authority that the committee has given us to have multiyear procurement, now you are creating an environment in which you are not just relying on the government's money but companies are also willing to put their money into expanding their capacity. Those are —

Mr. NORCROSS. So what are we doing to address that exactly? What signals are we sending industry? And I am very familiar with much of the ammunition, what we are doing over there.

Mr. HILL. Yeah.

Mr. NORCROSS. I am more concerned, at least at this hearing, at our missile industrial base.

Mr. HILL. Yeah.

Mr. NORCROSS. When you start talking about investing in our workforce, what does that mean? You can send a signal, but unless a contract follows it, it is a hollow signal.

Mr. HILL. Right. The contract following it is going to be the question of the resource allocations in finite budgets. This is the question that we have been discussing earlier today about how many are we acquiring.

Mr. NORCROSS. Well, I am not trying to pin you. Well, actually, I am—

Mr. HILL. You are.

Mr. NORCROSS. —trying to pin you down, because we are doing this to address exactly what we are talking about. And I get it, we make the decision and all the complexities and dealing with that and then we say we need it yesterday. I mean, that is historically what we do. And if we look at some of the numbers that we are requesting, and particularly Mr. Moulton and what he was saying, even if you change your mind, they cannot ramp up in time.

So when we start looking towards investing in that industrial base, we have to send the signals that are true to industry, and we have to build it ahead of time because the longest lead item is not

a piece of material; it is a human. And that is why I continue to bring this up meeting after meeting.

But with that, I will yield back to the Chairman. Thank you.

Mr. LAMBORN. Thank you, Representative.

Representative Bacon.

Mr. BACON. Thank you, Mr. Chairman.

Thank you, gentlemen, for being here.

Could you help me understand why the overall budget numbers have gone down significantly for missile defense in the upcoming budget versus what we did last year? That is what it appears to me. Is it because of the budget caps or maybe there is other priorities? So I am trying to understand that.

Mr. HILL. Sure. I will start. Definitely, the Fiscal Responsibility Act did set a ceiling. We had to work within that ceiling. You had must-pay bills, payroll increases, healthcare programs, child support, a lot of those things that go on in the Defense Department. And then you find you are having to make some choices in your end game.

Mr. BACON. Right.

Mr. HILL. My readiness today for the things I am working on, my investment for the future, not easy choices. That is the general environment.

Mr. BACON. I think it is something for the Armed Services Committee to maybe review. Seems like missile defense is an area that we do not want to be cutting. I mean, I know the budget has gone up a little bit, but I was just surprised to see the amount of the cut going on for missile defense.

A second question. I am not sure who is appropriate—the best to ask this to. It is concerning when you see the bases, particularly like Iraq, being repeatedly hit out of—from Iran. What could we be doing better to protect our forward bases from this, or what are we not doing? I know this could be a theater commander's question too, but you have a great insight.

General GAINEY. Congressman, thank you. I will take that question.

In my current role and previous roles specifically is the Army is providing the preponderance of missile defense and counter-UAS defense for those bases forward. Again, continuing to add funding for the forward warfighter to employ capabilities. You heard General Kurilla advocate for the additional funding that he has requested for additional counter-UAS capability to proliferate across all of our bases forward.

We do have capability there now that has proven successful. We are putting in technology and directed energy and also other type of kinetic systems, and continuing funding of those systems will allow us to put in volume additional capability on those bases.

Mr. BACON. Thank you.

It is alarming to see the amount of targeting Iran is doing at our bases in Iraq, and seems like we should be doing everything we can to protect against that.

In the last NDAA, we put some missile defense measures in for Kurdistan. How will that look, you think, or will that be a hard challenge for you all to accomplish? There was a provision that helped the Kurds get missile defense in the last NDAA.

Mr. HILL. Yeah, I am sorry, I actually heard Kyrgyzstan, but—

Mr. BACON. Well, the Kurds.

Mr. HILL. Kurdistan.

Mr. BACON. Sorry.

Mr. HILL. No, that is just my hearing. So, absolutely, support to the Kurds have been part of this. Balancing that relationship, their relations in the region is also part of that question.

One of the other—to add to some of General Gainey's comments as well, we have also in the Red Sea context obviously struck back at some of those sites where some of these Iran-aligned militia groups operate, the Houthis most notably, and that is an essential complement to the force protection the missile defense provides.

Mr. BACON. Thank you.

One last question for General Gainey, if I may. We have been reading some reports of fatigue and burnout because of the high ops [operations] tempo for your servicemen and -women. What can we do to help mitigate that?

General GAINEY. The Army has taken a holistic look, and as you heard me earlier highlight the significant strain on the force. But what I will tell you is, I am amazed at how those soldiers continue to respond and continue to maintain a positive attitude and high reenlistment rate moving forward.

As the Army looks to get after how do we improve the quality of life and improve the op tempo, goes to our modernization efforts and continuing supportive funding for our modernization efforts, because Patriot system is the most deployed system because it is our workhorse system. As we modernize with integrated battle command system as the core point inside of that modernization, we will then integrate several different effecters and capability that provides the range of capabilities across several threats. So you will no longer have to deploy just a Patriot battery; you can now deploy several different components. And the Army's growth of that capability in the last R-struct will also add additional capacity, so that will help moving forward.

Mr. BACON. Well, we appreciate the men and women who serve in your command and, in that matter, for all of your all's commands. And missile defense is such an important mission and it is in high demand everywhere, so we are grateful to you and your people.

Mr. LAMBORN. Perfect timing. We will now go to Representative Vasquez.

Mr. VASQUEZ. Thank you, Chairman. Thank you to the Ranking Member.

Thank you to our witnesses for being here today this morning.

I have the privilege of representing New Mexico's Second District, home to White Sands Missile Range. It is the birthplace of America's space and missile program. And though White Sands continues to be the Department of Defense's premiere research and testing facility for our Nation's most important weapons programs, they also continue to face struggles maintaining modern technology and facilities.

Now, during my visit to White Sands this January, base leadership shared with me that their long-range radars, which are supposed to provide critical tracking capabilities for weapons testing,

have been in service and have not been upgraded since the 1960s, posing significant challenges to keeping them operational and in line with modern missile technology.

Beyond these maintenance challenges, I have understood that these radar challenges and the failures during tests have become increasingly frequent, occurring as often as five times per month and with tracking and accuracies that are off by hundreds to thousands of yards. Not being able to accurately track weapons during testing not only poses a safety risk to the folks that are working there but also to surrounding communities, but threatens our readiness and national security, and I think that is completely unacceptable.

We should do everything in our power to ensure White Sands has the necessary equipment to safely and accurately track weapons tests so that we are providing our warfighters with the best tools and information possible to accomplish their mission.

Lieutenant General Gainey, are diminished testing conditions like these acceptable to you? And how do deficient testing standards pose a threat to our national security?

General GAINNEY. Congressman, thank you for the question. White Sands Missile Range remains an integral part, as you know, to our testing in the Army's Air and Missile Defense Program. As the senior mission commander for Kwajalein Atoll, I also have strategic testing at those sites where I also maintain an infrastructure and sensors to be able to get after that. And I believe continuing funding and improvements of all of those capabilities are critical to continuing to ensure that we have the best capability as we test our critical systems moving forward.

Mr. VASQUEZ. Thank you so much. In New Mexico, as you know, Lieutenant General, we have a long legacy of not just missile testing, but a lot of research and development that has contributed to the strength of this Nation's national security. We also have a toxic legacy of impacts at local surrounding communities from testing activities, which is one of the reasons I am fighting and others here in Congress are fighting to reauthorize RECA [Radiation Exposure Compensation Act]. And so we just want to make sure that those technologies are updated, and that we don't make the same mistakes of the past, at the same time, protecting national security.

Now, Mr. Hill, given the importance of White Sands testing capabilities, what is stopping the department currently from updating these critical testing systems?

Mr. HILL. Congressman Vasquez, I am not familiar with the specific decisions on those, but we can certainly take the question. And in the general sense, obviously, the previous discussions about the overall top line and making tradeoffs within finite resources I am sure is part of the calculations that is happening.

Mr. VASQUEZ. Thank you, Mr. Hill. I appreciate you paying attention to this issue in future budget requests. Now beyond the missile testing and evaluation done at White Sands, we are home to the largest manufacturer of space grade solar cells that are a key component to providing power to our satellites. Producers in my district power a significant portion of our Nation's national security satellites directly contributing to the strength of our missile warning fleet and space.

Mr. Hill, for components like solar cells that are critical for our missile defense and warning infrastructure, what does it mean to the Department to have a reliable, domestic supply chain? And how can Congress help support robust production capabilities like those in my State?

Mr. HILL. I think these reliable domestic production chains, we see how important they are across a number of fields. One of the things that we have done is we most recently issued our commercial space integration strategy, recognizing how much innovation is being driven by the commercial side of space. And understanding that we in the Defense Department need to shift from trying to contort them into meeting our requirements to being flexible about our requirements so we can leverage what they are doing. That would be an example of creating an environment in which more innovation happens inside domestic production capacity.

Mr. VASQUEZ. I appreciate that, Mr. Hill. And we certainly are at the forefront, I think, of that commercialization, both in the research and development phase but also know in light assembly and manufacturing when it comes to all these different components that are going into these modern systems. And I appreciate your continued attention and investment to New Mexico's Second District. Thank you so much. Chairman, I yield back.

Mr. LAMBORN. Thank you. Representative Strong.

Mr. STRONG. Thank you, Chairman Lamborn, and Ranking Member Moulton, and I thank each of you for being here today.

General, it is great having each of you in my office last week. It was interesting to learn that not only is Huntsville the Rocket City, but it is also apparently the City of Love since this is where you met your wife, General James.

And I also found out that General Gainey's parents met at Red Stone Arsenal. So it is interesting to hear that. Red Stone Arsenal is truly making a name for itself. I have said it before, and I will say it again, we have got some great things coming out of Huntsville.

General Collins, just a few weeks ago, General Guillot with NORTHCOM [U.S. Northern Command] reconfirmed to this committee that the next generation interceptor is critical for defending the homeland.

Last spring, your predecessor testified to the benefits of keeping multiple contractors on the NGI program through critical design review. But since late last year, we have learned that this is no longer the plan. This really concerns me and many others.

Looking back to 2019 when the redesign kill vehicle—RKV—program was canceled, we had all our eggs in one basket. There wasn't a backup plan. And because we didn't have a backup plan, we had to extend the life of our interceptors and start an entirely new program. This cost taxpayers a lot of money, it costs us capability, and it costs us time when there is a ticking clock over in the Indo-Pacific and throughout the world.

What has changed? Why is MDA now making an earlier than planned down-select decision before critical design review next year?

General COLLINS. Congressman, thanks for that question on NGI. It is absolutely our foundation for homeland defense into the

future. And we have continued to focus the agency very much on NGI and its incorporation in no later than 2028.

Two things to note, one we have talked about is certainly the fiscal realities and the decisions that needed to be made with—across the missile defense portfolio has been far-reaching. But second, we have also been keeping the NGI program on track. Both primes have completed a preliminary design review. Both have completed full qualification of all of their parts for the radiation environment. And many of the subcomponents have been taken to the critical design review stage of design. All of that brought together, we, the agency, believe we have a full, in-depth understanding of the designs from the two primes. We fully understand, and the transition to production plans and the risks that are still involved with both primes. And we believe that the level of risk is well below the Department's standard of making a decision such as this. So we believe we have the technical depth and knowledge and understanding of risk as we move forward to make that decision.

Mr. STRONG. Thank you. I know that some very smart people have done great work to keep our current interceptors in the game longer, but we cannot keep life-extending the fleet. Is that right?

General COLLINS. That is correct, sir.

Mr. STRONG. Thank you. I know that the confidence and NGI succeeding is high. I credit a big part of that to the incredible work being done at Red Stone Arsenal with both industry teams in Huntsville, Alabama. But the consequences of something going wrong with NGI are much higher now than it was back in 2019. Would that be a correct statement?

General COLLINS. Yes, sir. There is still additional risk ahead of us on the program, and we will continue to stay very focused on where that risk is. Sorry. We will continue to stay focused on where that risk is and focus on mitigating that risk as best as possible.

Mr. STRONG. I totally agree. They are much higher this time, because just as you said, we can't fall back on doing another life extension of the current system. We have already used our get-out-of-jail free card with the RKV. I worry that the Biden administration is wanting to dismantle the significant industrial capacity that has been built up over decades. And MDA's budget and plans are taking a detrimental hit due to some short-sighted decisions here.

Is there a report or study that MDA has conducted that supports down-selecting before critical design review over sticking with the original acquisition strategy?

General COLLINS. No, sir, we do not have any reporter assessment on that.

Mr. STRONG. Thank you. So where budget constraints, the primary or initial reason for the change in strategy, or is it because the teams have progressed better than expected?

General COLLINS. I would have say, sir, it is a combination of both. Both teams have progressed very, very well. But there was a catalyst that was driven by the fiscal decision as well.

Mr. STRONG. I thank each of you for being here. Mr. Chairman, I yield back.

Mr. LAMBORN. Thank you. Representative Carbajal.

Mr. CARBAJAL. Thank you, Mr. Chairman. Hearing all the nexus that you have to Representative Strong's district and not Paradise, which is my district, makes me start questioning your judgment, I must say. We know our adversaries possess hypersonic capabilities. Defending against and defeating this threat is proving to be challenging, both technically and physically.

General Collins, how are advanced manufacturing technologies, such as additive manufacturing being utilized to reduce costs and acquisition timelines for future hypersonic defense programs?

General COLLINS. Thank you, Congressman, for that question. I fully agree with your notes on the difficulty in developing an industry base to accelerate our hypersonic offensive and defensive weapons as we move forward. And in my previous job within the Air Force buying hypersonic weapons, we had the same challenges is developing the industry base to produce critical technologies we require for hypersonic weapons.

At the Missile Defense Agency, we are very focused on bringing any of the new advanced manufacturing capabilities and technologies to bear to help war and reduce costs of building hypersonic weapons in the future as well as helping to scale and increase pace of capacity of lines going forward.

We are very much looking into advanced manufacturing or additive manufacturing. As you mentioned, we have a group within our S&T [science and technology] division that is closely looking at and investing in small business maturation capabilities of additive manufacturing and particular capabilities that are required within a hypersonic weapon.

One in particular is carbon/carbon additive manufacturing, which is key to the front edge thermal protection systems of our hypersonic weapons. A key technology and a limiting factor within our ability to scale the industry base. So we are very much investing across the traditional and nontraditional bases to ensure we have the manufacturing capability for hypersonic weapons.

Mr. CARBAJAL. Thank you. General Collins, earlier this year, the Missile Defense Agency, MDA, launched two hypersonic and ballistic tracking space satellites, HBTSS. MDA received additional funds in fiscal year 2024 defense appropriation bill to do calibration testing and training on threat representative hypersonic targets.

Can you please describe the status of the satellites, and how MDA is going to execute the additional \$25 million for calibration provided in fiscal year 2024 omnibus?

General COLLINS. Yes, Congressman, absolutely. It was a major activity on Valentine's Day of this year when we lost the—

Mr. CARBAJAL. That is my anniversary, by the way.

General COLLINS. Sir, those satellites are still progressing through launch and early orbit testing. We have a very slow methodical process whereby we turn on the satellites, we turn on the payload. Over the last month, we have had first light, what we call the first time we have turned on the payloads, and actually looked with them and started taking a look at the data to calibrate. That calibration continues. We started to do a number of cooperative activities where there may be a launch or a test that somebody else is executing. And we have been using those as capabilities, as opportunities to calibrate that payload.

Later this summer, we will be executing our first HTB Hypersonic Testbed One launch in June. That is a launch specifically designed for our HBTSS satellites to look at a hypersonic threat and track it through its time of flight. They use—there will be another HTB2 test later in the summer. Those are the two same wickets that we are looking at to calibrate and certify the fire control solution and technology that we have.

Back to the earlier conversation, another opportunity we are getting is the Space Development Agency for wide field review satellites were launched on the same booster. They are in plane with our two satellites. And so we are actually going to be able to utilize some testing of the wide field review capability in concert with RHBTSS technology as well. A key capability as we look forward to a future missile warning, missile defense, and missile defense space architecture. Thank you, sir.

Mr. CARBAJAL. Thank you. General James, the value add of HBTSS is that it will provide fire control quality data to track and intercept hypersonic threats. Can you speak to the importance of fire control quality data, the importance of using threat represent—representative hypersonic targets to calibrate and train against, and how space command plans to do that across future year defense programs?

General JAMES. Yes, Congressman, I sure can. Thanks for the question. I came a long way. I have a few things to say. So thanks for the question. Absolutely, important, incredible. As SPACECOM continues to flesh out its transregional missile defense mission, and we continue to press on that, and we see those natural links between what you have heard the other colleagues say here about the convergence of the space and the missile defense mission. How we use our space assets and develop those to get at the technology changes we see to your point, the hyper velocity or the cruise missile threats that we see, we are going to have to use space-based systems. We are going to have to be able to provide that level of targeting quality information. And so, that's exactly the things that we are looking on as we continue to develop the net centric command and control systems, and the information systems, like C2BMC [Command Control Battle Management Communications] as we continue to press for that. You will see that in our list as an important factor that we need to continue to press on to increase our ability to command and control and pass that information from close to sensor, sensor to best shooter to be able to make those connections. There is a lot of work that happening more than just in USSPACECOM, and are tying into all of that with MDA, with SNDC, Army's convergence, Nimble Titan, lots of different exercises, JIAMD. Nimble fire. We exercise all of those to continue to build our expertise in that.

Absolutely critical because terrestrial sensors are not going to allow us to track and target the threats that we see coming the way we have in the past. That will have to be space-based. And all the things that General Collins just talked about from SDA and the work with HBTSS from the space force and other capabilities, absolutely important, and integrating commercial and integrating the allies. That is an area that USSPACECOM has done tons of work

with over the years, and it falls naturally to how we are going to move forward with missile defense.

Mr. CARBAJAL. Thank you. And thank you, Mr. Chair, for the additional time. Mr. Chair, I yield back.

Mr. LAMBORN. Well, it is really more for Lieutenant General James. Representative Wilson.

Mr. WILSON. Thank you very much, Mr. Chairman. Indeed, I hope Mr. Secretary General, as you see, that incredibly, this is bipartisan with the leadership of our chairman and ranking member, and even including Congressman Carbajal. And so—but truly, we want you to succeed. And I have a personal interest. I served 31 years in the Army Guard and our Reserves, and I really appreciate military service. And I am grateful my oldest son served in Iraq field artillery. My second son was a doctor out of track, he was in the Navy, but I still claim him serving in Baghdad, my third son, Signal in Sinai. And my youngest a year, Afghanistan as an engineer. So all credit to my wife, Roxanne, for actually training these guys.

But the bottom line is we want you to succeed. And, equally, it is more important than ever, Mr. Secretary General, we are in a conflict we did not choose. And to me, it is a conflict, a war, between dictators with rule of gun who are invading democracies with rule of law. Sadly, it began February 24, 2022, when war criminal Putin just murderously invaded Ukraine, just seeking out civilians to murder civilians. I have been there to Bucha to see the inhumanity of what has been done. I actually was in Kiev in August last year possibly for the first hypersonic missile attack. And the tactic of war criminal Putin is so inhuman, and that is to attack a civilian target like an apartment complex, and then that is not the real attack. Twenty years—twenty minutes later when the first responders are there, the fire service, the EMS personnel law enforcement, that is when the real attack occurs.

And it is just shocking to think of the tactics that Putin has to try to intimidate the people of Ukraine, just as they did the people of the Aleppo in Syria, and then to come back and try to intimidate first responders. Then, of course, it continued on October the 7th when the puppets of the regime in Tehran invaded and, again, 1,200 innocent civilians mercilessly murdered intentionally without any sense of propriety or concept. Indeed not in uniform, just everything that could be a violation of laws of war they conducted. And then, of course, sadly we have had over 150 attacks that have occurred in the Red Sea, as correctly identified by Congressman Moulton in Iraq. Over and over again, we see these attacks. Over 150. And then culminating on January the 28th with three young members of the Army Reserves from Georgia who were killed by a Hezbollah, again, another puppet of Iran, killing three of our personnel and wounding 40 others.

And so, it is just incredible to me the challenges that we have, and we want the best. And wanting the best, General Gainey, in particular, I am concerned with the level of deployment of such an important branch, the air defense artillery. And, actually, I want to commend. It is no surprise, General, Congressperson Don Bacon was ahead of the curve. And that is the deployment level that is being conducted. And I know with the leadership we have, bipar-

tisan, we would like to back you up in any way to try to address that.

With all of this in mind, General Gainey, in particular, how are we addressing the technological development of the Chinese Communist Party war criminal Putin, the regime in Tehran, the Kim Jong Un? How are we addressing this?

General GAINNEY. Congressman, thank you for the question and appreciate your thoughts. As—I will speak first on the Army perspective. The Army is undergoing its most modernized effort in several, several years. We are moving from a Patriot centric force, and I highlighted earlier how we are asking Patriot to essentially do everything in a fight, give after tactical ballistic missiles, cruise missiles, and, in some cases, with our partners even going after drones with the Patriot system. The U.S., through our modernization program, U.S. Army, is now looking at integrated battle command system as the cornerstone of that system. We have that system in test right now with our unit out at Fort Bliss. What that unit—that integrate—that C2 system does is it integrates several components and not just a system. It takes a lower tier air missile defense sensor as the cornerstone of that capability, and then it adds in other sensors, whether ground-based sensors or airborne platforms, and also adds in shooters into that common C2. So now given the operator to leverage several different sensors to provide several different effectors against the range of threats. And also that lower-tier air missile defense sensor provides significantly more capability than the current system does, which would allow it to now optimize most of those interceptors that are part of that C2 system.

And if you look at this challenge from a joint perspective in my JFCC IMD hat, that is where we look at how do you bring all of these systems together in a larger C2 construct? And that is something as we work towards the defensive wall, one of the areas we are looking at is how do you take the Army integrative battle command system integrated with some of the systems that the missile defense agency is putting together on Guam? And so, therefore, we are looking at we will have an enduring solution that moves forward that essentially integrates all those several systems, leverages the sensors and the shooters together. That is the medium, lower to medium range.

Now, if you look at the counter UAS in the protection to the maneuver capability, the Army has also significantly invested in that area also where we have added several maneuver, short-range defense systems integrated into our division in BCPs to be able to provide capability against cruise missiles. Looking at technology like directed energy, 50-kilowatt directed energy that we have deployed out there right now testing that capability, and also refueling high-power microwaves into our formations to be able to get at those threats.

So if you look at a capability, a system that is able integrate all of these sensors, all of these effectors, and then be able to put the proper fires on target, the appropriate interceptor or effect on the appropriate target, that is how we are moving forward in modernization. That is how it is going to allow us to move forward.

Mr. LAMBORN. Thank you. Representative Garamendi.

Mr. GARAMENDI. Thank you. If there is ever a committee that is faced with a problem, it is this one. I am on a lot of military committees, and I never had a committee that had so many acronyms. To try to understand what each and every one of these things actually is, it is a challenge. But I am going to try to take this in a different direction. Following on some of the work that my colleague, Mr. Moulton, put forward earlier in his remarks, we will forever be playing defense, trying to catch up with the offense. We can use the NFL [National Football League], we can use the experience of what we are hearing here today. Much of this discussion today is about defense.

And we know that in that defensive environment, there is great risk. What has happened over the course of the last 23 years is a very significant shift in this entire arena. Prior to 2002, there was an ABM treaty, an antiballistic missile treaty. It would do well for all of us to understand the details of the actual language of the treaty. We usually think it only applies to intercontinental ballistic missiles. It didn't. It went beyond that. The United States withdrew from that. To this day, Russia uses the withdrawal of the—of America from the ABM treaty to justify their continued buildup of intercontinental ballistic missile systems and the weapons that go with it.

Interestingly, in recent days, the last few years, China is using that very same withdrawal, American withdrawal from the ABM treaty system to justify its buildup of intercontinental ballistic missiles, including silos, which this committee has discussed.

It is fair to argue that that withdrawal from that treaty has led to the current nuclear arms race, and much of the discussion today has to do with how we are going to defend using the GMD system. And my concern here is that we are in a never-ending cycle of offense followed by defense that presumes to be successful against the then-known offense, and yet when we are around.

My point here is that as much time as we are spending on, in this committee, defense, we ought to be looking at how to break this cycle of an arms' race. Now you can add the nuclear piece to it, which you must do, and it becomes even more significant. It is never-ending. And I know the members of this committee, and certainly the gentlemen before us understand in detail what this race is all about, the risks that are in it.

And my question to you, Mr. Hill, is, is it useful for us policy-makers and for you and your team to spend as much time thinking about how to stop the cycle, or at least slow down the cycle of offense, defense, defense, offense, and back and forth, all of which creates greater risk? Mr. Hill, I would love to hear your thoughts on it.

Mr. HILL. Sure. Congressman Garamendi, very, very key piece in the entire puzzle of what you are getting after here. Clearly, there was a time, there was an era when we had someone we could work with on the other side of a negotiating table. During the Soviet Union, that era and the Cold War, we did negotiate agreements with them successfully. We are in a—and that is a key piece to any kind of arms control situation. Do you have someone you can work with? Now, you have three, and you have a very different Russia

in some ways in terms of can you deal with them as a credible negotiating partner right now?

So, it is not to—it is to say you always need to be thinking about that as one of the pieces of what you have to work with to try and maintain strategic stability, defense, offense, as well as can you come up to a confidence level with somebody on the other side of the table. China's a third player in this now, which adds to the complications. But I think the tool never goes away. It is how do you use it in the environment you have?

Mr. GARAMENDI. I am going to take 5 more seconds. Every one of the arms control mechanisms that went into effect during the Cold War occurred almost immediately after the most difficult of moments in that Cold War. I will let it go at that. That is a historical issue. But thank you. I am out of time. And for me, I am going to spend as much time talking about this as I do about offense and defense. Thank you.

Mr. LAMBORN. Representative Stefanik.

Ms. STEFANIK. Thank you, Chairman Lamborn. First, I would like to correct the record earlier in this hearing. The ranking member said that the Department of Defense chose Fort Drum as the preferred missile defense site for the third homeland missile defense site nearly 10 years ago. That is incorrect. Despite the fact that you said that is correct, General Collins, you are aware that the date that that was designated was 2019, correct?

General COLLINS. Yes, ma'am.

Ms. STEFANIK. So the 10 years ago was incorrect?

General COLLINS. Yes, ma'am, 4 years ago.

Ms. STEFANIK. Great. You also are aware that just last year, General Milley and Vice Admiral Hill testified in front of this committee that the construction of a third site at Fort Drum would be strategically worthwhile, correct?

General COLLINS. Yes, ma'am.

Ms. STEFANIK. Are you aware of that testimony?

General COLLINS. Yes, ma'am.

Ms. STEFANIK. Yes. And you are also aware that in multiple NDAA's, the language designating Fort Drum was the preferred third site for an East Coast missile defense site has been included in multiple NDAA's. Are you aware of that?

General COLLINS. Yes, ma'am.

Ms. STEFANIK. And just let the record reflect, the ranking member voted in support of that language, not once, but multiple times, as well as voted for appropriations as did the majority of the members of this committee.

Now, in the fiscal year 2014 Appropriations Act and the NDAA, we worked to secure \$10 million in planning and design funds for the Missile Defense Agency to begin construction activities for a third homeland missile defense site at Fort Drum.

My question to you, General Collins, is as the director of MDA, can you confirm to me that this \$10 million is being used as dictated by Congress as explicitly stated by Congress at Fort Drum to begin the planning and design of a third missile defense site.

General COLLINS. Ma'am, the \$10 million has been authorized and appropriated for that purpose, and that is the purpose we are executing it for.

Ms. STEFANIK. And what are you using that for?

General COLLINS. That is to do the initial planning and development of design for continental interceptor site to take it to the 10 percent design level.

Ms. STEFANIK. At Fort Drum?

General COLLINS. We are pursuing an agnostic design that would support—

Ms. STEFANIK. That is not what the language said.

General COLLINS. By providing and—by doing it as an agnostic site, we would not slow down the capability to do it.

Ms. STEFANIK. That is not what the language that was passed by Congress said. And you understand that in the NDAA for multiple years, it had designated Fort Drum. There were three sites under consideration in three different States. There was a process and environmental impact study. This has been a very thorough process. And so, you are saying to me today that the \$10 million is not designated at Fort Drum for the planning and design?

General COLLINS. It is—it supports continental interceptor site at any location that is determined to be optimal in the future in line with the 2019 memo that the Department signed out.

Ms. STEFANIK. Designating Fort Drum?

General COLLINS. Fort Drum, and it also designated that when a requirement was set for a continental site, that there would have to be a readdress and a reassessment of location based on performance.

Ms. STEFANIK. Even though you said in my office, when we met General Collins in my office, that you understood that the \$10 million would go to the design planning at Fort Drum as specified by the NDAA.

General COLLINS. When a decision—if a decision is made to pursue a Fort Drum site, the \$10 million will be 100 percent in line with being able to accomplish that.

Ms. STEFANIK. But you do understand that multiple NDAA's Fort Drum has been designated as well as by DOD?

General COLLINS. I am aware, ma'am, of the report that the department signed out and the previous NDAA's.

Ms. STEFANIK. Okay. Great. With that, I will yield back.

Mr. LAMBORN. All right. Thank you. That concludes the public portion of this hearing. We have votes that will be called roughly 11:45 or shortly thereafter. So we will be in recess, and we will go into a closed hearing up in room 2337, until such time as votes are called, and then we will adjourn the subcommittee at that point. So we will be in recess and be upstairs.

[Whereupon, at 11:18 a.m., the committee proceeded in closed session.]

A P P E N D I X

APRIL 12, 2024

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

APRIL 12, 2024

Written Statement of Mr. John D. Hill
Deputy Assistant Secretary of Defense for Space and Missile Defense Policy
House Armed Services Committee Strategic Forces Subcommittee
“Fiscal Year (FY) 2025 Budget Request for Missile Defense and Missile Defeat Programs”
April 12, 2024

Introduction

Chairman Lamborn, Ranking Member Moulton, and distinguished members of the Committee. On behalf of the Office of the Secretary of Defense, thank you for the opportunity to testify on the topic of the President’s “FY 2025 Budget Request for Missile Defense and Missile Defeat Programs.” I am honored to join Lieutenant General Heath Collins from the Missile Defense Agency (MDA), Lieutenant General Sean Gainey from the U.S. Army Space and Missile Defense Command (SMDC), and Lieutenant General Thomas James from U.S. Space Command (USSPACECOM).

Today, I will review how air and missile threats have evolved over the last year, provide an update on our progress in policy and strategy implementation, and explain how the Department’s FY 2025 budget request of \$28.4 billion for missile defense and missile defeat programs supports continued efforts.

The Evolving Threat

As the 2022 Missile Defense Review (MDR) highlights, missiles are “a principal means by which adversaries seek to project conventional or nuclear military power.” Conflicts around the globe continue to demonstrate the centrality of missiles in modern warfare and global strategy, and the indispensable role of integrated air and missile defenses in protecting military capabilities, civilian populations, and national sovereignty.

It has been over two years since Russia launched its full-scale invasion of Ukraine. In response, Ukraine's employment of a wide array of air and missile defenses – including legacy Soviet and NATO-interoperable systems contributed by allies and partners – has been fundamental to defending Ukrainian forces and civilians, protecting critical infrastructure, and preserving freedom, self-determination, and sovereignty against ruthless, authoritarian aggression. Innovative solutions and resourcefulness have embodied these efforts, as seen through the example of the “FrankenSAM” program, wherein the Department, working with Ukrainian forces, successfully adapted legacy Ukrainian launchers to utilize Western-supplied missiles, enabling more widespread air and missile defense coverage than would otherwise be achievable. However, absent action on the Administration's national security supplemental request, this support is at risk, putting innocent lives and a democratic nation's existence at risk. Meanwhile, Russia is bolstering its production of missiles and drones and is acquiring additional systems from Iran and the Democratic People's Republic of Korea (DPRK).

In the Middle East, Iran-aligned militia groups (IAMGs) have targeted Israel, U.S. military forces, and maritime commercial shipping operating in the Red Sea, the Bab al-Mandeb Strait, and the Gulf of Aden. Hamas, Lebanese Hizballah, the Houthis, and IAMGs in Iraq and Syria accept Iranian military support in many forms, including capabilities such as uncrewed aerial vehicles, ballistic missiles, and cruise missiles. In the aftermath of the October 7 attacks, the United States temporarily transferred its two Iron Dome batteries to Israel and replenished Iron Dome interceptors. The United States has relied on air and missile defenses, such as the Navy's AEGIS Weapon System with Standard Missiles and the Phalanx close-range defense system, to counter threats to our forces, commercial shipping, and our partners in the region.

Additionally, the United States surged Terminal High Altitude Area Defense (THAAD) and PATRIOT to the region.

In the Indo-Pacific region, the People's Republic of China (PRC) and the DPRK continue to develop a range of missile capabilities that – combined with coercive activities – threaten regional stability. As outlined in the National Defense Strategy, the most comprehensive and serious challenge to U.S. national security is the PRC's coercive and increasingly aggressive efforts to refashion the Indo-Pacific region and international system to suit its authoritarian preferences. The PRC is also developing and growing its offensive arsenal, including rapid advancement of ballistic, hypersonic, and cruise missile capabilities. As highlighted in the Department's 2023 China Military Power Report, the PRC is developing a hypersonic glide vehicle that is likely intended to be capable of striking U.S., allied, and partner military bases and fleets in the Indo-Pacific region.

The DPRK also continues to diversify its missile and nuclear programs in line with Kim Jong Un's defense modernization goals. In 2023, the DPRK launched a solid-propellant intercontinental ballistic missile (ICBM) and a purported submarine-launched cruise missile. The DPRK also continues to diversify its launch platforms. The DPRK also unveiled a new ballistic missile submarine and tested an underwater drone that it claimed was nuclear-capable. Finally, in March 2023, Kim inspected what the DPRK claimed was a tactical nuclear weapon. These programs both undermine regional stability and expand DPRK missile threats to the U.S. homeland.

U.S. Missile Defense Policy

The 2022 MDR describes missile defense as “a core deterrence-by-denial component of an integrated deterrence strategy.” Missile defenses are integral to achieving the National Defense Strategy’s top priorities of defending the homeland and deterring strategic attacks against the United States. Missile defenses undermine adversary confidence in offensive missile use by:

- reinforcing U.S. diplomatic and security posture;
- reassuring allies and partners that the United States will not be deterred from fulfilling its global security commitments;
- introducing doubt and uncertainty into adversary attack planning;
- raising the threshold for conflict by reducing the incentive by adversaries to conduct small-scale, coercive attacks;
- denying the benefits of an uncontested attack by adversaries; and
- mitigating damage should deterrence fail.

In short, missile defenses, paired with advanced early warning systems, expand the decision space for our military and civilian leaders and preserve our forces’ freedom to maneuver.

As current conflicts in Ukraine and the Middle East demonstrate, kinetic interceptors remain the primary means to defend against offensive missile, artillery, and rocket attacks. To keep pace against this rapidly evolving threat requires continued improvement of our active missile defenses as well as pursuit of comprehensive missile defeat approaches to expand our response options.

To address these challenges, the Department is prioritizing efforts across the entire engagement space to improve the probability of a successful intercept and reduce interceptor salvo size. To achieve these goals, we are developing and fielding better sensors – on Earth and in space – that can provide higher fidelity warning, tracking, and kill assessment data to reduce the number of interceptors required to defeat each incoming threat missile. These investments will also deliver improved fire control and discrimination capabilities. Space-based sensors now being deployed in proliferated constellations will contribute improvements and resilience to both homeland and regional missile warning, missile tracking, and missile defense architectures. The Department is also putting a greater emphasis on both kinetic and non-kinetic missile defeat capabilities, which encompass right- and left-of-launch capabilities, to expand our possible options against these threats.

Investments

For FY 2025, the President’s Budget Request included \$28.4 billion for missile defeat and defense to defend the homeland, our deployed forces, allies, and partners against increasingly complex missile threats. Important missile defense and defeat investments include:

- \$2.5 billion to develop the Next Generation Interceptor (NGI) for ground-based midcourse defense, and to extend the service life of the current Ground Based Interceptors.
- \$1.9 billion for hypersonic defense programs, which includes \$175 million for the Glide Phase Intercept (MDA), \$653 million for SM-6 Block IA (Navy), and \$963 million for PAC-3 Missile Segment Enhancement (Army).

- \$4.7 billion for Space-Based Missile Warning Systems, which includes \$2.6 billion in resilient low Earth orbit (LEO) and medium Earth orbit (MEO) missile warning/missile tracking systems, and \$2.1 billion in Overhead Persistent Infrared Systems.
- \$1.5 billion for the Army and MDA for the development and procurement of the Guam Defense System.
- \$1.3 billion for Sea-Based Weapons Systems. The Department will stop procurement of the SM-3 Block IB missile after FY 2024.
- \$1.0 billion for Army Integrated Air and Missile Defense.
- 1.0 billion for Lower Tier Air Missile Defense Sensor (LTAMDS) research, development, test, and evaluation (RDT&E) and \$0.96 billion for PATRIOT (PAC-3) Missile Segment Enhancement (MSE) Missile procurement.
- \$383.6 million for Over-the-Horizon Radar modernization and Cruise Missile Defense of the Homeland.

The Department's FY 2025 missile defense and defeat budget meets evolving threats head-on as one critical element of the Department's broader integrated deterrence strategy.

Homeland Missile Defense

As stated in the National Defense Strategy, the Department's top priority is to defend the U.S. homeland. The United States relies on strategic deterrence to address and deter large intercontinental-range nuclear missile threats to the homeland from the PRC and Russia. The Ground-based Midcourse Defense (GMD) System protects the homeland – including Hawaii and Alaska – against ICBM threats from the DPRK and potentially Iran, if it were to develop an

ICBM capability. The most technically effective, least costly, and rapid approach to staying ahead of the growing DPRK threat and the potential Iranian threat is to increase our ability to successfully prosecute a missile defense engagement and reduce the numbers of interceptors needed to accomplish an engagement. To this end, in addition to sensor developments and deployments previously discussed, we are developing the NGI for future ground-based midcourse defense. We plan to emplace the first NGI by 2028, and to acquire 20 NGIs for deployment at Fort Greely, Alaska, where silos are currently available.

In September 2023, Secretary Austin issued policy guidance for Air and Cruise Missile Defense of the Homeland. The Secretary's action followed a comprehensive re-assessment of our approach to air defense of the homeland as currently reflected in Operation NOBLE EAGLE. The revised guidance will inform development of future years' budgets, with the investments necessary to pace homeland defense air activities to the growing multi-domain threat posed by the PRC while also accounting for the acute threat posed by Russia. In the near term, to address the emergent threat posed by advanced cruise missiles, the Department is taking defensive measures, including fielding over-the-horizon radars and cloud-based command and control systems that will improve our ability to detect and respond to such strikes and thereby decrease the risks from cruise missile strikes against U.S. critical assets.

Additionally, following the Deputy Secretary's 2022 designation of a lead Military Department to begin planning for and coordinating the acquisition of air and cruise missile defenses of the homeland, the Air Force, with the support of the Army, is nearing completion of a comprehensive analysis of alternatives that will inform our investments in this strategically important capability.

The 2022 MDR is clear that an attack on Guam or any other U.S. territory by any adversary will be considered a direct attack on the United States and will be met with an appropriate response. The architecture for defense of Guam against diverse missile attacks therefore must be commensurate with its unique status as an unequivocal part of the United States, its vital geography, and the numerous operational capabilities it hosts. The Department is developing and funding a persistent 360-degree layered defense capability to protect Guam against simultaneous raids of cruise, ballistic, maneuvering, and hypersonic threats. MDA is currently conducting an Environmental Impact Statement to assess the potential environmental impacts and required mitigation associated with an Enhanced Integrated Air and Missile Defense system for the defense of Guam.

The Department's efforts to create a layered Integrated Air and Missile Defense (IAMD) architecture on Guam is neither simple nor without cost. We have to knit together diverse, Military Service-specific IAMD capabilities with broader command and control systems and into an optimal mix of sensors and shooters. IAMD systems – with both active and passive features – must also be linked with other elements of offensive military posture. These are just a few examples of the challenges that we face. Nevertheless, U.S. homeland IAMD in the Indo-Pacific region is a top priority.

Regional Missile Defense

The United States has developed layered, conventionally armed, multi-domain missile defense architectures to protect our deployed forces and support our allies and partners against theater-range threats. For example:

- On land, the United States fields THAAD batteries to counter short-range ballistic missiles (SRBM), medium-range ballistic missiles (MRBM) and intermediate-range ballistic missiles (IRBM), as well as PATRIOT battalions for terminal defenses against SRBM and MRBM, cruise missiles, aircraft, and uncrewed aircraft systems (UAS). The Army will field the first Indirect Fire Protection Capability (IFPC) battery, designed to defeat cruise missiles, UAS, and rocket, artillery, and mortars, in FY 2026. IFPC is currently undergoing developmental testing and scheduled to move to operational assessment later this year.
- In the maritime domain, the United States continues to improve AEGIS ballistic missile defense-capable destroyers and cruisers loaded with a variety of interceptors, such as the Standard Missile (SM)-3 Block IIA and IB, the SM-6, the SM-2, and the Evolved Sea Sparrow Missile (ESSM). Additionally, in conjunction with Japan, MDA is developing the Glide Phase Interceptor (GPI) to defend against regional hypersonic threats.

Space Contributions to Homeland and Regional Missile Defense

- In the space domain, the U.S. Space Force (USSF) has commenced launching tranches of LEO satellites every two years to provide robust global coverage for missile warning, missile tracking, and low-latency, fire-control quality data for weapons engagement within the Missile Defense System. USSF is leveraging the advances made by MDA's Hypersonic and Ballistic Tracking Space Sensor (HBTSS) prototype program to contribute to this roadmap. In February, MDA and the USSF launched two HBTSS prototype satellites into orbit.

- USSF plans include fielding two epochs of MEO satellites by FY 2031 to perform missile warning and missile tracking. A full LEO and MEO constellation will have the ability to detect and track hypersonic weapons, ballistic missiles, and raids in a high-clutter environment through missile burnout.
- USSF also plans to launch two Next-Generation Overhead Persistent Infrared (OPIR) geosynchronous Earth orbit satellites by FY 2027, and two Next-Generation OPIR polar satellites by FY 2031 to perform missile warning.

Allies and Partners

NATO

At the 2023 NATO Summit at Vilnius, NATO Allies committed to further strengthening the Alliance's IAMD readiness, responsiveness, effectiveness, and interoperability. Building on that commitment, several NATO IAMD initiatives are underway that are increasing NATO IAMD capability, improving Allied air surveillance, increasing the Alliance's IAMD readiness and posture, and enhancing NATO's BMD capability. Likewise, NATO Allies continue to acquire their own IAMD capabilities through national, bilateral, and multilateral frameworks, including some that the United States is directly supporting, and which further strengthen NATO's deterrence and defense. NATO's announcement earlier this year that the Alliance would facilitate on behalf of a coalition of Allies the acquisition of up to 1,000 PATRIOT interceptors and support the construction of a PATRIOT production facility in Germany exemplifies this trend. As a member of the Alliance, the United States is contributing technical, programmatic, and policy expertise to inform these initiatives. In addition, the United States is

on track to complete construction on the Aegis Ashore site in Poland later this spring and transfer command and control of the capability to NATO this July.

Europe

The Department is working closely with our European Allies and partners on missile defense initiatives to increase their IAMD capabilities, improve our collective ability to share data, and increase integration between our forces. Allies such as Germany, Poland, Romania, Sweden, Finland, Norway, and the Netherlands are acquiring their own IAMD capabilities, and building multinational IAMD procurement initiatives such as the European Sky Shield Initiative.

Air and missile defenses remain vitally important in Ukraine. Because of U.S. security assistance, and that of our Allies and partners, Ukraine has been able to better protect its citizens, reduce damage to critical national infrastructure, and prevent Russian air superiority. Through the Ukraine Defense Contact Group, and newly announced Integrated Air and Missile Defense Capability Coalition, the United States and dozens of Allies and partners continue to meet Ukraine's urgent requirements, including by developing innovative air defense solutions. This support remains important to U.S. national security, and that of our Allies and partners. The United States – alongside our Allies – remains steadfast in our commitment to help Ukraine fight Russian aggression.

Middle East

The Department continues to partner in the Middle East to design and implement an IAMD architecture. U.S. Central Command is leading these efforts, which include an array of regular workshops, exercises, and trainings. These efforts, combined with security cooperation

tools, battle management/command, control and communications systems, and technical assistance, advance the goal of a shared network capable of coordinated defense. U.S. air and missile defense deployments to the region bolster deterrence. U.S. capabilities also support our partners' access to early warning missile data and information sharing so that they are better able to defend their territory and citizens and contribute to wider regional security against Iran-backed air and missile threats.

Through an annual U.S. allocation of \$500 million for missile defense to Israel, the United States continues its longstanding cooperation on co-development, co-production, testing, and fielding of the Arrow Weapon System and the David's Sling Weapon System, and co-production of the Iron Dome Defense System. In FY 2022, Congress provided Israel with an additional \$1 billion for Iron Dome replenishments and upgrades. Since the October 7, 2023 attacks, Israel's missile defense systems have been vital to protecting Israel's population against missile attacks from multiple directions.

The United States continues to work with the Kingdom of Saudi Arabia and the United Arab Emirates (UAE) to deliver the combat-proven THAAD system to defend against short-, medium-, and intermediate-range ballistic missile threats. The Department is currently executing a \$13 billion foreign military sales case to deliver seven THAAD batteries to the Kingdom of Saudi Arabia. The first THAAD interceptors were delivered in July 2023 and the first THAAD battery is on-track to achieve initial operational capability in 2025. The UAE has been operating two THAAD batteries since 2016 and, in January 2022, successfully executed its first real-world intercept against an incoming Houthi ballistic missile. This success has led to follow-on efforts with the UAE to deliver additional missile defense launchers, interceptors, and system sustainment valued at \$2.9 billion. The United States is also currently in the process of

delivering to the Kingdom of Bahrain its first PATRIOT batteries and expects Bahrain to fully operate them in 2025.

Indo-Pacific Region

As we upgrade U.S. IAMD capabilities throughout the Indo-Pacific region, including Guam, we are simultaneously working closely with key international partners such as Japan, the Republic of Korea (ROK), and Australia. This is not simply a force posture issue. Extending deterrence to allies and partners in the region – which includes pursuit of a robust IAMD architecture – is an integral aspect of our mission and provides reassurance that the United States will uphold its international security commitments.

Our IAMD-related engagement with these allies is robust. Japan – one of the United States' strongest partners on missile defense – just concluded a State visit by its Prime Minister to Washington, D.C. Given rapidly increasing Indo-Pacific threats, Japan plans to increase defense spending to roughly 2 percent of GDP by its fiscal year 2027, with significant new investments in missile defense, counterstrike, and other capabilities. Foremost among these efforts is the counter-hypersonic Glide Phase Interceptor cooperative development project, a top priority to which Japan will allocate \$1 billion. Glide Phase Interceptor cooperative development will build on synergies accumulated from decades of missile defense cooperation.

The overall scope of our IAMD cooperation with the ROK has expanded significantly under President Yoon's Administration. We have improved the ROK's support for the United States' THAAD posture on the Korean Peninsula, and we are pursuing additional initiatives aimed at improving integration and interoperability.

Trilaterally, the Department has been actively involved in facilitating IAMD cooperation between the ROK and Japan. These efforts have resulted in new operational arrangements such as the December 2023 activation of a trilateral early missile warning data-sharing mechanism against DPRK threats.

We are also working closely with Australia to enhance its regional IAMD capabilities. Australia is investing in joint battle management systems to improve its interoperability with the United States and other allies and partners, and we are actively engaged in broad-based, IAMD-focused discussions with the Australians to help drive future bilateral collaboration.

Overall, current U.S. efforts in the Indo-Pacific region are aimed at laying the diplomatic, security and technical foundations needed for the establishment of a regional IAMD architecture. While this vision of connectivity will ultimately take years to realize, near-term tactical victories remain achievable and will help build support among Indo-Pacific allies and partners with unique priorities and sometimes competing national perspectives.

Conclusion

As current conflicts in Ukraine and the Middle East demonstrate, and as seen in the pacing challenge posed by the PRC and the destabilizing threats of the DPRK and Iran, in this era of missile centric warfare, active missile defenses are an essential element of a credible military force posture and integrated deterrence. This year's budget makes crucial investments in missile defenses to protect the homeland, our forces abroad, and our allies and partners around the globe. At the same time, prompt action on the Administration's national security supplemental request remains critical.

Thank you again for this opportunity to testify and thank you for the role this sub-committee plays in supporting our homeland and regional missile defense interests. I look forward to our discussion and to answering your questions.

JOHN D. HILL

Deputy Assistant Secretary of Defense for Space and Missile Defense

Mr. John D. Hill was appointed as the Deputy Assistant Secretary of Defense for Space and Missile Defense in January 2022.

A Presidential Rank Award recipient and member of the career Senior Executive Service, Mr. Hill served as the Principal Director for Space Policy from 2013-2021 and has held a diverse variety of assignments in the Department of Defense (DoD) beyond the space portfolio. He was DoD's representative in negotiations with Afghanistan on the Security and Defense Cooperation Agreement that enabled a post-2014 presence of United States and NATO forces. Mr. Hill has held two prior Principal Director positions in DoD, overseeing defense policies and programs regarding Afghanistan, Pakistan, and Central Asia from 2010-2012, and holding similar responsibilities

regarding the East Asia region from 2006-2010.

In previous assignments as the Director for Northeast Asia and as the Senior Country Director for Japan, Mr. Hill led DoD's management of U.S. alliance relationships with Japan and the Republic of Korea and oversaw security policies regarding the Korean Peninsula.

Mr. Hill's career includes extensive experience across a wide range of international negotiations encompassing defense posture, status of forces, nuclear non-proliferation, defense industrial collaboration, international trade, and host nation support agreements. His early career highlights included roles in developing the longstanding U.S. policy on offsets in military exports and development and implementation of the Gulf War program under which coalition partners contributed \$53 billion to defray U.S. costs.

As a member of the inaugural class of Mansfield Fellows, Mr. Hill served assignments on detail to the Japan Defense Agency, the Japan Federation of Economic Organizations (Keidanren), and Japan's Ministry of International Trade and Industry.

Mr. Hill joined DoD through selection to the Presidential Management Internship Program, serving assignments with the Army Security Assistance Command, the Office of Management and Budget, and the Office of the Secretary of Defense.

Mr. Hill received his Master of Arts in International Affairs from American University, and earned a Bachelor of Arts in Political Science at UCLA. He and his wife Lynn live in Fairfax, Virginia. They have three daughters who are embarked on their own professional careers.

**Lieutenant General Heath A. Collins, USAF
Director, Missile Defense Agency
Before the
House Armed Services Committee
Strategic Forces Subcommittee
April 12, 2024**

Chairman Lamborn, Ranking Member Moulton, and distinguished Members of the subcommittee, I am honored to appear before you today to discuss the Missile Defense Agency (MDA) budget request of \$10.4 billion for Fiscal Year (FY) 2025. Our request will enable the continued execution of the MDA mission to develop, deploy, and support a layered Missile Defense System to defend the United States and its deployed forces, allies, and international partners from increasingly diverse and dangerous missile threats.

Our potential adversaries place a high priority on developing capabilities to defeat U.S. and allied missile defenses. They are well resourced and are testing and fielding advanced ballistic, hypersonic, and cruise missiles that are increasingly accurate, survivable, and capable of achieving longer ranges and higher levels of maneuverability. Today, many of the newest systems, including hypersonic and anti-ship ballistic missiles, are undergoing unprecedented combat evaluation in Ukraine and the Middle East. This could potentially lead to innovations that challenge missile defenses and lead to broader proliferation as the battlefield effectiveness of these systems is demonstrated.

Ensuring our Combatant Commanders and Services have what they need to fight today and win tomorrow is my top priority. Continuous and frank collaboration with the Warfighter is essential to delivering adaptable, affordable capabilities as fast as possible to defeat an increasingly diverse and unprecedented missile threat set. As part of the

Department's missile defense enterprise, MDA is committed to collaborating closely with the Warfighter throughout the lifecycle of a capability. There are proven processes in place to identify, prioritize, assess, and validate Warfighter requirements and requests for modifications and upgrades to systems already fielded. MDA works with the Warfighter early in the technology development and product development phases to address a requested capability. We also support Lead Military Department efforts to plan for Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy factors. Once a capability is fielded, close collaboration with the Services and Combatant Commands is essential to sustaining and enhancing that capability throughout its service life. Finally, MDA provides real-time technical support to the Warfighter, as demonstrated during recent real world operations.

Urgency of Hypersonic Missile Defense

Initially just focused on ballistic missile defense, MDA today is developing weapons systems and sensors to defeat the serious threat posed by hypersonic glide vehicles and maneuvering threats. MDA continues to develop a layered defense capability to defeat regional hypersonic threats with the Glide Phase Intercept (GPI) development program. By the end of FY 2024, MDA will select a single GPI interceptor design with which to complete development. In FY 2025, MDA will continue to develop and mature the GPI capability with a focus on critical technology maturation and risk reduction activities. We will also continue to update the Aegis Weapon System to integrate the GPI interceptor. Our FY 2025 budget request supports the planned cooperative development of the glide phase interceptor with Japan. We expect to

complete the formal agreement on that project this spring. Japan will fund and develop key missile components, primarily propulsion elements.

The GPI weapon system design will provide a layered defense with currently deployed Sea-Based Terminal (SBT) capabilities. SBT provides terminal defense of assets at sea and forces ashore. We anticipate delivering SBT Increment 3 capabilities in FY 2025 to provide expanded capability. SBT will demonstrate a simulated engagement against an operationally realistic hypersonic glide vehicle target in FY 2025, and an engagement using a Standard Missile (SM)-6 against a hypersonic glide target in FY 2026.

The Missile Defense System will increasingly leverage the space domain with our Service partners to gain a strategic edge against advanced missile threats. MDA already has demonstrated the ability to generate a fire control solution to track and engage ballistic missile targets using the Space Tracking and Surveillance System demonstration satellites, which are now decommissioned. Today, MDA is on-orbit with the Hypersonic and Ballistic Tracking Space Sensor (HBTSS) and preparing to demonstrate fire control solutions generated from satellites against missile threats that glide and maneuver at hypersonic velocities through the atmosphere. MDA is collaborating with the U.S. Space Force Space Development Agency to demonstrate a fire-control capability to track and defeat advanced missile threats. HBTSS's Launch and Early Orbit Testing period, which began on February 14, 2024, will be followed by testing to characterize and validate performance of the two HBTSS prototype satellites by leveraging MDA and cooperative flight test events. Following a successful demonstration of HBTSS, the responsibility for fielding HBTSS fire-control capabilities

will be transferred to the Space Force. When fully operational, the fire-control capability developed through MDA's HBTSS program will be part of the Space Force Proliferated Warfighter Space Architecture and provide a capability to detect hypersonic, ballistic, and other advanced threats earlier than terrestrial radars and send tracking data to the Missile Defense System for handover to missile defense weapons for engagement.

MDA upgraded the Ballistic Missile Defense System Overhead Persistent Infrared (OPIR) Architecture (BOA) three years earlier than planned to provide expanded hypersonic tracking capability. Ongoing BOA 8.1 development updates the system architecture to integrate increased raid-handling capability in Increment 8/9. These system architecture updates enable initial integration of Space Development Agency Low Earth Orbit and Space Force Space Systems Command Medium Earth Orbit sensors into BOA for improved tracking and fire control. FY 2025 funding will continue to develop and test Increment 6C/7 to deliver expanded support that leverages systems and sensors to track maneuvering, hypersonic non-ballistic missiles as well as report maneuvering tracks and impact area predictions to external systems. Increment 6C/7 will also update Command and Control, Battle Management and Communications (C2BMC) to prioritize supporting sensors for defense against hypersonic glide threats.

Homeland Defense

The Ground-based Midcourse Defense (GMD) system has protected the U.S. homeland from rogue long-range ballistic missile attacks for almost 20 years. Today, we are improving the reliability of the in-service fleet and developing new capabilities to address the limited but increasingly advanced North Korean long-range ballistic missiles. We continue the U.S. Northern Command's Ground Based Interceptor (GBI)

Service Life Extension Program to improve reliability and availability, which we anticipate will extend portions of the existing fleet. These interceptors will help mitigate risk until the Next Generation Interceptor (NGI) is fielded no later than the end of 2028. In parallel, MDA continues to upgrade the ground system infrastructure, communications network, fire control system, Warfighter training systems, and missile fields to improve the reliability, capability, cybersecurity, and resiliency of the GMD weapon system.

In December 2023, we successfully executed a GMD intercept flight test, demonstrating the weapon system's capability to intercept an Intermediate Range Ballistic Missile target using the 2-/3-stage selectable GBI in 2-Stage mode equipped with a Capability Enhanced-II Block 1 Exo-atmospheric Kill Vehicle. This was the first intercept flight test of a 3-stage GBI operating in 2-stage mode, meaning the third stage was commanded not to ignite. The earlier release of the kill vehicle provides increased battlespace to the Warfighter to execute closer range engagements. With a successful Operational Capability Baseline decision for Increment 6.B in late FY 2024, the software enabling the selectable 2-/3-stage will be deployed for the GBI fleet.

We are developing the Next Generation Interceptor to improve the GMD system's ability to defend against future threats. The Next Generation Interceptor program is currently in its Technology Development Phase and will transition to its Product Development Phase in May 2024. Recently, each one of the two competing Prime Contractor teams successfully completed their Preliminary Design Reviews and Knowledge Points #1. MDA applied lessons learned from other large-scale defense programs that faced increasing costs due to extended design phases involving multiple

competitive solution teams which adversely impacted schedule. Due to accelerated contractor execution schedules, MDA had an appreciably larger body of technical knowledge and data available to assess contractor performance ahead of a traditional systems development at this point in the design maturation process. Consistent with the down select contract clause, MDA completed a best value determination using contractor provided objective evidence from their Preliminary Design Reviews and Knowledge Points #1. In April 2024, MDA anticipates it will select the contractor to continue development, testing, production, and fielding of Nation's Next Generation Interceptor.

To support defense of the homeland, MDA is developing, deploying, and sustaining a robust, cyber-secure and networked ground- and sea-based radar architecture that includes the Long Range Discrimination Radar (LRDR) located at Clear Space Force Station, Alaska. LRDR enhances tracking and discrimination, hit assessment, and space-intelligence data collection. The LRDR successfully tracked and discriminated a medium-range ballistic missile (MRBM) target in September 2023. When the radar is added to MDA's Operational Capability Baseline (OCB) in December 2024, LRDR will support the GMD capability against long-range missile threats. The LRDR completed a Space Domain Awareness (SDA) data collect event in January 2024 that proved the SDA capability, and the U.S. Space Force and MDA are in the process of formally declaring LRDR ready for SDA early use in April 2024. In FY 2025, LRDR will continue support of SDA and will be added to the OCB for the missile defense mission.

The Sea-Based X-Band (SBX) radar provides a relocatable, precision midcourse tracking and discrimination capability supporting homeland defense operations, Missile Defense System testing, data collection, and SDA. SBX completed a rigorous in-port maintenance and capability upgrade period in March 2023 and is currently deployed at-sea conducting homeland defense operations. Fabrication of the SBX replacement radome continues on schedule for installation in January 2026.

Upgraded Early Warning Radars (UEWRs) and the COBRA DANE radar support homeland missile defense and improve midcourse Missile Defense System sensor coverage by providing critical early warning, tracking, object classification, and cueing data. They also provide critical missile warning data and space object detection and tracking data for the Space Surveillance Network. While the Space Force is the overall UEWR and COBRA DANE sustainment organization, MDA provides sustainment support for the radars located in California, Massachusetts, Alaska, United Kingdom, and Greenland.

There are five AN/TPY-2 forward-based radar sites currently deployed worldwide that augment our capabilities to execute the homeland defense mission. Operating at forward locations in key regions, these radars extend detection and early warning capabilities and enhance our ability to track and discriminate inbound targets earlier.

The Space-based Kill Assessment (SKA) experiment of infrared sensors continues to demonstrate hit assessment capabilities for homeland defense. SKA sensors will continue to provide situational awareness of intercepts to U.S. Northern Command and participate in flight tests and engineering activities to characterize sensor capabilities that provide data to support future Post Intercept Assessment capabilities.

Meeting the current and future ballistic missile threat for homeland and regional defense requires global persistence and increased precision and accuracy. The Discriminating Space Sensor (DSS) program, designed to perform birth-to-death tracking and global coverage for discrimination against ballistic missile threat targets, is moving into the next phase of development after successfully completing its ground concept feasibility phase. The next phase, space demonstration, will develop the on-orbit demonstrator and follow a similar path as HBTSS capabilities leading to incorporation into the operational Proliferated Warfighter Space Architecture.

C2BMC Spiral 8.2-5 will enable homeland defense capabilities by providing critical LRDR data to GMD. C2BMC conducts command and control functions for LRDR and executes tasking in direct support of GMD engagements. C2BMC Spiral 8.2-5 delivers the initial ability to receive messages from space command and control to generate acquisition tasking for Aegis Ballistic Missile Defense (BMD) and LRDR. C2BMC S8.2-5 also enables the capability to task Aegis BMD and LRDR to detect, track and report on resident space objects.

Regional Defense

Globally deployed ship-based and land-based Aegis BMD capabilities are critical to the Nation's defense of our deployed forces, allies, and partners against a wide variety of short-, medium-, and intermediate-range missile threats. In FY 2025, MDA is designing improvements to the Aegis BMD capability, improving SBT defense, advancing weapon system and missile reliability, and enhancing Aegis BMD engagement capacity and lethality. We will continue to develop Aegis BMD weapon

system software to enhance functionality and leverage more-capable radars and National Technical Means.

MDA continues to support defense of NATO's European territory and forces against the ballistic missile threat from outside the Euro-Atlantic region. Aegis Ashore in Romania is operational, and the Chief of Naval Operations accepted Aegis Ashore Poland in December 2023, marking completion of a key MDA contribution to Phase 3 of the European Phased Adaptive Approach. The Poland site is undergoing a maintenance period to upgrade the computer networks and communications systems, which is funded and operated by the U.S. Navy. This will be followed by U.S. European Command acceptance of the site. Then there will be a transfer of authority from U.S. European Command to NATO. Both Aegis Ashore sites are designed to launch the SM-3 Block IBTU and Block IIA missiles.

In the FY 2025 budget, MDA continues to procure the SM-3 Block IIA missile. Previous and planned procurements are on pace to meet current Navy Inventory Objective requirements for Block IIA in FY 2032 as defined by the outcome of the Navy Munitions Requirement process. The FY 2025 Budget proposes to discontinue further production of the SM-3 Block IB missile in favor of SM-3 BLK IIA and continue to evolve the BLK IIA missile within the Aegis Weapons System. MDA will continue to deliver prior year procurements of Block IB and sustain the existing inventory. The final Block IB delivery is currently expected in FY 2028. The SM-3 Block IB has a twelve-year service life and the oldest Block IBs in the fleet will begin to reach the end of service life in FY 2026. The combination of demilitarization and termination of new procurements will result in SM-3 Block IB inventory peaking in FY 2027. The inventory of all variants

of SM-3 missiles is managed through the Navy's Global Force Management process to address the capacity requirements for Defense of Guam, European Phased Adaptive Approach, and other Combatant Commander requirements. We will continue to develop Aegis BMD weapon system software to enhance functionality and leverage more-capable radars and National Technical Means.

MDA provides software upgrades to Aegis integrated missile defense destroyers equipped with the AN/SPY-1 radar to support the Space Force Space Domain Awareness mission. The Aegis SDA capability is fully compatible with deployed Navy operations and has appropriate safeguards supporting full Aegis missile defense warfighting capability. We transitioned this important capability to the Navy and supported successful demonstrations on USS Rafael Peralta (DDG 115) in June 2023 and USS Mason (DDG 87) in October 2023. In FY 2025, we will continue to test and deliver this upgrade and support the Navy in future SDA demonstrations.

The Terminal High Altitude Area Defense (THAAD) Weapon System is a globally transportable, ground-based system that is highly effective against short-, medium- and intermediate-range missile threats inside and outside the atmosphere in the terminal phase of flight. MDA currently supports forward-deployment of two batteries stationed in the U.S. Indo-Pacific Command (INDOPACOM) area of responsibility and an emergency deployment in the U.S. Central Command (CENTCOM) area of responsibility. In FY 2025, we will continue U.S. THAAD interceptor procurement, production of battery hardware, obsolescence mitigation efforts, fielding and training support, the THAAD Stockpile Reliability Program, and modifications to meet growing cybersecurity threats. THAAD will continue to

demonstrate capability improvements with rigorous testing throughout the Future Years Defense Program.

THAAD, in conjunction with the U.S. Army, is in the process of fielding the THAAD 4.0 capability to all THAAD batteries. The upgrade was completed at the battery located in Guam in November 2023, and we are in the process of upgrading remaining batteries to be completed by the end of 2025. TH 4.0 capability enables remote launch, Patriot Launch-on-Remote, and integration of Army Patriot Missile Segment Enhancement (MSE) launchers and missiles into the THAAD battery. This capability increases Patriot defended area and engagement opportunities by allowing the MSE interceptor to leverage the highly effective THAAD AN/TPY-2 radar.

THAAD System Build 5.0 is in development and is the largest hardware refresh to-date with operational availability in July 2026. TH 5.0 includes hardware upgrades that address obsolescence and enhances the mission assurance and cybersecurity posture of the weapon system. TH 5.0 incorporates system safety enhancements and engagement refinements resulting in improved performance against the current THAAD assessed threat set.

THAAD System Build 6.0 operational availability has been expedited to 2027 from 2032 and will provide initial capability against maneuvering threats and increase the threat engagement space. TH 6.0 includes capability enhancements to the THAAD interceptor, increased integration with Patriot MSE, and improvements to the cybersecurity risk posture and program protection. Additionally, THAAD will begin initial systems engineering in FY 2025 to support the Army's Integrated Air and Missile Defense (IAMD) Battle Command System (IBCS) integration of THAAD.

AN/TPY-2 radars deployed abroad support THAAD batteries for regional defense. Radar 13, planned for delivery in the second quarter of FY 2025, will be part of THAAD Battery 8. Radar 13 includes significant obsolescence redesigns that are leveraged from ongoing Foreign Military Sales (FMS) cases. As a supplement to each of these weapon systems in regional defense roles, the AN/TPY-2 forward-based radars mentioned earlier extend the capabilities of each by expanding their detection range and enhancing their ability track and discriminate enemy launches. These radars greatly enhance our ability to protect our allies and deployed soldiers in a regional defense mission.

The C2BMC system includes the operation of a global network enterprise with equipment and personnel in 25 locations across 14 time zones. Funding in FY 2025 continues to provide situational awareness, battle management, training, and SDA capabilities to users within each Combatant Command as well as the global missile defense network. Over the past year the C2BMC system provided INDOPACOM with the ability to acquire and exchange missile track data with multiple partner nations' command and control systems to demonstrate strength in partnering with allies for collective regional missile defense. Funding in FY 2025 continues this effort and includes support for Warfighter contingency activities such as those in support of Israel. MDA's C2BMC system is providing sensor data to cue Aegis ships in the region from continued attacks on shipping and other partner interests in the region.

The Department is continuing development of a missile defense system for the defense of Guam against diverse missile threats. We will expand capability and capacity as the threat evolves. In collaboration with the Army and Navy, we are moving

towards meeting an INDOPACOM requirement for a persistent 360-degree layered missile defense capability on Guam against simultaneous raids of cruise, ballistic, maneuvering, and hypersonic glide threats. The MDA MILCON designs will complete this calendar year and the Environmental Impact Study will complete in Calendar year 2025. MDA construction will begin in FY 2025, establishing the joint command center, an AN/TPY-6 radar site, and a Navy Standard Missile Vertical Launch System (VLS) site. We will execute a flight experiment intercept in first quarter FY 2025 demonstrating the increased Guam protection capabilities the Department is developing for the western most territories of the homeland, while the integrated Aegis Guam System continues final design and testing.

Leveraging Science and Technology Innovation

MDA is investing in disruptive technologies to deliver dynamic, next generation missile defense capabilities. MDA has an integrated, strategic Science and Technology (S&T) approach that prioritizes identifying and maturing transformational, leap-ahead technologies to address the future threat. Additionally, we continue to rapidly develop near-term technologies to support incremental Missile Defense System upgrades. MDA is collaborating with OSD, the Services and Warfighters, National Laboratories, Universities/Academia, International partners, and Industry (traditional and non-traditional defense partners) to leverage technology development. We are aligning our S&T roadmap to maximize cutting-edge technology to close capability gaps and meet Warfighter requirements.

Kinetic capabilities by themselves will not be adequate to keep pace with threats, which continue to increase in complexity, range, and quantity. Accordingly, MDA plans

to enhance current kinetic kill capabilities with directed energy and other non-kinetic solutions. MDA is working with OSD and the Services to develop the technologies to support the development and integration of directed energy systems. In 2024, a directed energy Independent Assessment Team (IAT) completed an evaluation to incorporate directed energy into the Missile Defense System. Based upon recent Office of the Under Secretary of Defense for Research & Engineering-funded increases in electric laser power levels and projected increases to 500 kilowatt-class in two years, the IAT recommended that MDA fund a laser technology demonstrator. The Agency will initiate this effort with our Service partners beginning with long-range detect and track while technology continues to mature for the missile defense mission. We are also developing advanced sensors to improve position accuracy and range estimates of missile threats.

The NanoSat Testbed Initiative (NTI) is a collaborative, experimental approach leveraging commercial satellite platforms to mature technology and perform risk reduction for encrypted communications in a meshed network in space to support Service and Agency initiatives. Space Edge Experiments and Demonstration (SEED) is a small form factor, Commercial-Off-The-Shelf (COTS) processor that leverages artificial intelligence and machine learning (AI/ML). SEED will fly on the Space Test Program (STP)-H10 mission to the International Space Station. The Laser Communications Experiment (LaCE) will demonstrate the viability of a low-SWaP (increasing the power while reducing the size and weight) optical inter-satellite-link between two nodes in LEO as a method for secure and assured space-to-space communications.

MDA continues with Asymmetric Left Through Right-of-launch Integration (LTRI) activities to further enhance offensive-defensive integration and improve overall full spectrum missile defeat capabilities. Asymmetric LTRI optimizes the efficiency and effectiveness of situational awareness between intelligence activities, offensive attack operations, and right-of-launch defenses. MDA has developed a medium fidelity model to simulate LTRI and is beginning to apply AI/ML to LTRI. MDA is collaborating with other government asymmetric multi-domain missile defeat efforts against ever advancing threats to optimize missile launch operations and provide data to inform decision-making in time critical situations.

MDA is partnering and cost sharing with the Department of Defense and Services to leverage sounding rockets and experimental hypersonic platforms to develop and mature key technologies for advancing hypersonic defense. These activities are the Multi-service Advanced Capability Hypersonic Test Bed (MACH-TB), High Operational Tempo for Hypersonics (H4H), and Hypersonic Test Bed efforts, and include maturation of key technologies such as axial upper stage throttling, secured meshed communications, survivable and optically optimal seeker windows, advanced materials characterization, hypersonic wind tunnel testing, and low cost, high yield thermal protection systems capable of surviving the harsh hypersonic environment.

MDA is actively engaging with Allies and international partners to leverage opportunities for collaborative development of missile defense S&T to advance capabilities in the areas of hypersonic weapons, integrated air and missile defenses, advanced sensing, battle management command, control and communications, directed energy, and AI/ML.

International Programs

Close collaboration with our Allies and partners is critical for addressing today's security challenges. MDA's international cooperation supports guidance outlined in the Missile Defense Review, Combatant Command priorities, and partner requirements. MDA actively and closely engages with multiple partners across the globe to build capability and interoperability against missile threats.

In the INDOPACOM region, MDA's most robust and wide-ranging cooperation is with Japan. In addition to the collaboration on glide phase interceptor development, Japan continues to acquire SM-3 Block IB and Block IIA interceptors via FMS. MDA is also executing an FMS case to provide the weapon system components and associated software for two Japanese-built Aegis System Equipped Vessels. MDA is working with Australia to support its development of a Joint Air Battle Management System that will integrate Australia's air and missile defenses and enable interoperability with U.S. and other allied Integrated Air and Missile Defense capabilities. Finally, MDA conducts cooperative research and development projects and studies with Japan, Republic of Korea, and Australia.

In Europe, MDA is assisting the United Kingdom to develop requirements for its potential purchase of a persistent discrimination radar that will complement NATO missile defenses. MDA also has a number of ongoing cooperative research and development projects and studies with the Netherlands, Norway, Denmark, and the UK. Finally, MDA continues working closely with NATO by providing subject-matter expertise to the NATO Communication and Information Agency for the continuous testing and interoperability of BMD systems.

In the Middle East, MDA has a strong, long-standing relationship with the Israel Missile Defense Organization. Through this cooperation MDA provides \$500 million per year, and additionally any supplemental funding approved by Congress, for programs including Arrow, David's Sling, and Iron Dome – all of these systems have proven their value in Operation Swords of Iron. MDA has worked closely with our Israeli partners throughout this conflict to identify and assess areas where increased U.S. support would be beneficial. MDA's THAAD program is also a major asset for cooperation within U.S. Central Command's Area of Responsibility. Finally, MDA is leading a project to develop a regional missile early warning architecture for the Gulf Cooperation Council.

Conclusion

Chairman Lamborn, Ranking Member Moulton, Members of the Subcommittee, we are committed to attracting and building a strong, skilled workforce that will continue to focus on providing what the Warfighter needs to win today and tomorrow. I would like to recognize and thank the men and women who serve in our Armed Forces at home and abroad and who operate the Missile Defense System with the support of our dedicated civilian and contractor workforce. I appreciate your continued support for MDA and the missile defense mission, and I look forward to answering the committee's questions. Thank you.



LIEUTENANT GENERAL HEATH A. COLLINS

Lt. Gen. Heath Collins is the Director, Missile Defense Agency and advises the Under Secretary of Defense for Research and Engineering on Missile Defense programmatic policy, requirements, priorities, systems, resources and programs. MDA's global mission is to develop, test, field and sustain integrated, layered missile defense capabilities to defend the United States, its deployed forces, allies and friends against missile attacks in all phases of flight. Collins directs the \$11 billion global organization with more than 9,000 military, civilian and contract personnel. He exercises management oversight for the Missile Defense System to include program management of missile defense resources which he synchronizes with the services in support of Combatant Command requirements.

Prior to assuming his current position, Lt. Gen. Collins was the Program Executive for Ground-Based Weapon Systems for the Missile Defense Agency, Redstone Arsenal, Alabama. Programs in Lt. Gen. Collins' portfolio included Ground-Based Midcourse Defense, Terminal High Altitude Area Defense System, four Joint U.S. and Israeli programs and several classified programs collectively valued at over \$3.4 billion annually.

Lt. Gen. Collins entered the Air Force in 1993, receiving his commission through the Reserve Officer Training Corps program at Clarkson University. His acquisition, space, test, operations and staff assignments encompass weapons, electronic countermeasures, space, radar, intelligence, Surveillance and Reconnaissance, nuclear, fighter, bomber and missile defense systems. He has served in numerous program management and senior leader positions including Air Force Program Executive Officer for Weapons, Air Force Program Executive Officer for Fighters and Bombers, System Program Director for the Ground-Based Strategic Deterrent (Sentinel) program, Deputy Director for the Infrared Space Systems Directorate and the Remote Sensing Systems Directorate, Deputy Group Commander, Wideband Satellite Communications Systems and Commander, Space Based Infrared System Space Squadron. Lt. Gen. Collins has also served in the Office of the Under Secretary of Defense for Intelligence, overseeing the department's Airborne ISR, Space, and Special Programs. He is a graduate of the Air Command and Staff College and the Industrial College of the Armed Forces. He holds master's degrees from Florida State University, Air University and National Defense University.

EDUCATION

1993 Bachelor of Science, Electrical Engineering, Clarkson University, Potsdam, N.Y.
 1996 Master of Science, Electrical Engineering, Florida State University, Panama City.
 1997 Squadron Officer School, Maxwell Air Force Base, Ala.
 2004 Air Command and Staff College, Maxwell AFB, Ala., by correspondence
 2006 Air Command and Staff College, Maxwell AFB, Ala.
 2006 Master of Military Operational Art and Science, Air University, Maxwell AFB, Ala.
 2008 Air War College, Maxwell AFB, Ala., by correspondence
 2009 The Program Manager's Course, Defense Acquisition University, Fort Belvoir, Va.
 2011 Master of Science, National Resource Strategy, Industrial College of the Armed Forces, Fort Lesley J. McNair, Washington, D.C.
 2011 Senior Acquisition Course, National Defense University, Fort Lesley J. McNair, Washington, D.C.
 2013 The Executive Program Manager's Course, Defense Acquisition University, Fort Belvoir, Va.
 2015 Enterprise Perspective Seminar, Alan L. Freed Associates, Washington, D.C.
 2016 Leadership Development Program, Center for Creative Leadership, San Diego, Calif.

ASSIGNMENTS

1. September 1993–January 1994, Missile Analyst, 83rd Fighter Weapons Squadron, Tyndall Air Force Base, Fla.
 2. January 1994–August 1997, Advanced Missile Flight Test Engineer, 83rd Fighter Weapons Squadron, Tyndall AFB, Fla.
 3. August 1997–July 1998, Student, Education with Industry, Sanders, A Lockheed Martin Company, Nashua, N.H.
 4. July 1998–December 1998, Command and Control Engineer, 4th Space Operations Squadron, Schriever AFB, Colo.
 5. December 1998–November 1999, Chief, Command and Control Engineering, 4th SOS, Schriever AFB, Colo.
 6. December 1999–October 2000, Chief, Engineering, 4th SOS, Schriever AFB, Colo.
 7. November 2000–June 2001, Ops Support Flight Commander, 4th SOS, Schriever AFB, Colo.
 8. June 2001–July 2003, Manager, Advanced Satellite Payloads, National Reconnaissance Office, Chantilly, Va.
 9. July 2003–August 2005, Chief, Vehicle Engineering, NRO, Chantilly, Va.
 10. August 2005–June 2006, Student, Air Command and Staff College, Maxwell AFB, Ala.
 11. June 2006–April 2007, Chief Engineer, Wideband Satellite Communications, Wideband Satellite Communications Group, Los Angeles AFB, Calif.
 12. April 2007–January 2008, Program Manager, Wideband Global Satellite Communications Block I Program, Wideband Satellite Communications Group, Los Angeles AFB, Calif.
 13. January 2008–April 2008, Deputy Commander, Wideband Satellite Communications Group, Los Angeles AFB, Calif.
 14. April 2008–June 2010, Commander, Space-based Infrared Systems Space Squadron, Los Angeles AFB, Calif.
 15. July 2010–June 2011, Student, Industrial College of the Armed Forces, National Defense University, Fort Lesley J. McNair, Washington, D.C.
 16. June 2011–June 2012, Deputy Director, Airborne Intelligence, Surveillance and Reconnaissance Programs, ISR Programs, Office of the Under Secretary of Defense for Intelligence, Washington, D.C.
 17. June 2012–June 2013, Deputy Director, Space and Special Programs, Battlespace Awareness and Program Assessment, Office of the Under Secretary of Defense for Intelligence, Washington, D.C.
 18. July 2013–November 2014, Deputy Director, Senior Materiel Leader, Infrared Space Systems Directorate, Space and Missile Systems Center, Los Angeles AFB, Calif.
 19. November 2014–February 2016, Deputy Director, Senior Materiel Leader, Remote Sensing Systems Directorate, Space and Missile Systems Center,

EFFECTIVE DATES OF PROMOTION

Second Lieutenant July 20, 1993	
First Lieutenant July 20, 1995	
Captain July 20, 1997	
Major December 01, 2003	
Lieutenant Colonel June 01, 2008	
Colonel October 01, 2013	
Brigadier General October 02, 2018	
Major General June 26, 2022	
Lieutenant General December 05, 2023	

Los Angeles AFB, Calif.

20. February 2016–March 2018, System Program Manager, Senior Materiel Leader-Upper, Ground Based Strategic Deterrent, Air Force Nuclear Weapons Center, Hill AFB, Utah

21. March 2018–July 2020, Program Executive Officer for Fighters and Bombers, Air Force Life Cycle Management Center, Air Force Materiel Command, Wright-Patterson AFB, Ohio

22. July 2020–July 2022, Program Executive Officer for Weapons and Director, Armament Directorate, Eglin AFB, Fla.

23. July 2022–December 2023, Program Executive for Ground-Based Weapon Systems, Missile Defense Agency, Redstone Arsenal, Ala.

24. December 2023–present, Director, Missile Defense Agency, Redstone Arsenal, Ala.

SUMMARY OF JOINT ASSIGNMENTS

1. June 2011–June 2012, Deputy Director, Airborne Intelligence, Surveillance and Reconnaissance Programs, ISR Programs, Office of the Under

Secretary of Defense for Intelligence, Washington, D.C.

2. June 2012–June 2013, Deputy Director, Space and Special Programs, Battlespace Awareness and Program Assessment, Office of the Under Secretary

of Defense for Intelligence, Washington, D.C.

3. July 2022–December 2023, Program Executive for Ground-based Weapon Systems, Missile Defense Agency, Redstone Arsenal, Ala.

4. December 2023–present, Director, Missile Defense Agency, Redstone Arsenal, Ala.

MAJOR AWARDS AND DECORATIONS

Legion of Merit with oak leaf cluster

Defense Meritorious Service Medal with two oak leaf clusters

Meritorious Service Medal with oak leaf cluster

Joint Service Commendation Medal

Air and Space Commendation Medal

Air and Space Achievement Medal with oak leaf cluster

Joint Meritorious Unit Award

Air and Space Outstanding Unit Award with oak leaf cluster

Air and Space Organizational Excellence Award with four oak leaf clusters

OTHER ACHIEVEMENTS

2006 Distinguished Graduate, Air Command and Staff College

2016 Air Force ACAT I Program Manager of the Year

2017 Air Force Nuclear Deterrence Operations Professional Team of the Year

(Current as of December 2023)



70

RECORD VERSION

STATEMENT BY

LIEUTENANT GENERAL SEAN A. GAINEY, USA
COMMANDING GENERAL,
U.S. ARMY SPACE AND MISSILE DEFENSE COMMAND

AND

COMMANDER,
JOINT FUNCTIONAL COMPONENT COMMAND FOR INTEGRATED MISSILE
DEFENSE

BEFORE THE

SUBCOMMITTEE ON STRATEGIC FORCES
COMMITTEE ON ARMED SERVICES
UNITED STATES HOUSE OF REPRESENTATIVES

SECOND SESSION, 118TH CONGRESS

ON FISCAL YEAR 2025 AUTHORIZATION REQUEST FOR MISSILE DEFENSE

APRIL 12, 2024

NOT FOR PUBLICATION UNTIL RELEASED BY THE COMMITTEE

Introduction

Chairman Lamborn, Ranking Member Moulton, and distinguished members of the Subcommittee, thank you for your continued support for our Soldiers, Civilians, and Families and your continued support for the Army, U.S. Space Command (USSPACECOM), Department of Defense (DoD), and the space and missile defense community. Thank you also for inviting me to highlight the importance of space and missile defense capabilities and ongoing enhancements that enable the defense of our Nation, forward stationed and deployed forces, allies, and partners.

Since January of this year, I have had the privilege of commanding U.S. Army Space and Missile Defense Command (USASMD) and Joint Functional Component Command—Integrated Missile Defense (JFCC IMD) and acting as the Senior Commander (SC) for both Fort Greely, Alaska, (FGAK) and U.S. Army Garrison-Kwajalein Atoll (USAG-KA). I also serve as our Army's lead enterprise integrator for air and missile defense (IAMD).

It is no secret that our competitors are growing in capability and capacity, particularly in the areas of nuclear, space and missile systems, and in the forefront, ballistic missile threats will continue to increase in complexity. Competitors' ballistic missiles are more mobile, survivable, reliable, and accurate with longer ranges; and hypersonic glide vehicles delivered by ballistic missiles are a developing threat that will inevitably challenge current missile defense systems. They are fielding more advanced missiles in greater numbers to not only deter the United States from intervening in a regional conflict but also to target the U.S. homeland. The National Defense Strategy (NDS), Nuclear Posture Review (NPR), and Missile Defense Review (MDR) recognized these dynamic changes in the security environment and the imperative to strengthen our integrated deterrence using all our strategic capabilities.

Missile prelaunch survivability is also likely to increase as adversaries strengthen their denial and deception measures and increasingly base missiles on mobile platforms.

Furthermore, increasing technical and operational countermeasures continue to challenge defensive systems against ballistic missiles.

The cruise missile threat to U.S. forces is also increasing. While most current land-attack cruise missiles (LACMs) remain subsonic, supersonic and hypersonic missiles have already been deployed, and LACMs will also have increased survivability by minimizing radar signatures and/or using countermeasures.

Europe—and frankly the globe—faces a Russian Federation with about 1,400 deployed nuclear warheads on intercontinental ballistic missiles (ICBMs) and submarine launched ballistic missiles (SLBMs). Despite arms control limitations and resource constraints, development of new ICBMs and SLBMs remains a high Russian priority, and they are expected to retain the largest force of strategic ballistic missiles outside of the US.

In the Indo-Pacific, the People's Republic of China (PRC) has the most active and diverse ballistic missile development program, producing technologically advanced systems, selling ballistic missile technology, and expanding the reach of its ballistic missiles to deter foreign powers in future conflict.

Similarly, the Democratic People's Republic of Korea (DPRK) is also developing long-range ballistic missiles that can threaten the U.S. and its allies. They continue testing new ICBMs, intermediate-range ballistic missiles, solid-propellant short-range ballistic missiles, an SLBM, and a medium-range ballistic missile while maintaining a large short-range ballistic missile (SRBM) inventory.

In the Middle East, Iran has ballistic missile and space launch development programs, which will result in increased ballistic missile force lethality. Iran's ballistic missile force exercises extensively hone wartime operational skills and tactics, and their space program progress could accelerate their path to achieving ICBM capabilities given the inherently similar technologies.

Our competitors increasingly leverage their space capabilities and complex missile systems, including unmanned systems, to legitimize their domestic and international agendas. With lower barriers to entry than ever, we can see a future that promulgates directed energy, autonomous systems, machine learning, and a further increase in distributed operations. Indeed, as demonstrated in the current conflicts and at the forefront of the next war, missiles will certainly be employed for increasingly tactical objectives—the missile threat is growing, and we must continue to build a resilient force and adapt to deter and defeat it.

As the commander of USASMDC and JFCC IMD, I am advocating for smart investment in the mission areas of space and IAMD, while also developing other ways—like missile defeat—to deter our competitors. Not only must we deny them the benefit of their potential strikes through resilience and countermeasures as the NDS directs, but we must also credibly communicate our capabilities and capacity to instill doubt in crisis and complicate the adversary decision calculus.

At USASMDC, our mission is to develop and provide current and future global space, missile defense, and high-altitude capabilities to the Army, the joint force, and our allies and partners. We must enable multi-domain combat effects and enhance deterrence, assurance, and detection of strategic attacks to protect the Nation. USASMDC is the U.S. Army's Service component command (ASCC) for three combatant commands (CCMDs): U.S. Space Command (USSPACECOM), U.S. Northern Command (USNORTHCOM) for ground-based midcourse defense (GMD), and U.S. Strategic Command (USSTRATCOM). At USASMDC, our vision is that of "ONE TEAM," achieving our shared objectives via collaboration, feedback, assessment, and smart adaptation to continue demonstrating value to warfighters, our Army, our joint interservice and interagency teammates, our Nation, and our allies and partners.

Of course, we cannot do this alone. We integrate our efforts across the globe with organizations like the Missile Defense Agency (MDA), U.S. Space Force (USSF), Army Futures Command, Army Rapid Capabilities and Critical Technologies Office (RCCTO),

and Program Executive Offices (PEOs), spanning a myriad of space, missile defense, and high-altitude requirements of the operational environment.

Recent Developments

The President's 2023 Unified Command Plan (UCP) seamlessly transferred the responsibility for missile defense, including JFCC IMD, from USSTRATCOM to USSPACECOM in April of last year.

In October of last year, the Secretary of Defense (SECDEF) assigned the 100th Missile Defense Brigade (MDB) to USNORTHCOM. As a result, USASMDC became ASCC to USNORTHCOM for the GMD mission.

The *Army Space Vision Supporting Multidomain Operations* was signed last December by the Secretary of the Army, the Chief of Staff of the Army, and the Sergeant Major of the Army. It specifies the Army's role of integrating joint and coalition space capabilities into our operations while simultaneously interdicting adversary space capabilities.

Throughout third and fourth quarters of Fiscal Year (FY) 2023, USASMDC ensured successful transfer of the Theater Missile Warning mission to USSF's Space Operations Command (SPoC) Missile Warning—Delta 4. Official mission transfer occurred on October 1, 2023, with USASMDC providing residual support and manning to the Joint Tactical Ground Station (JTGS) sites through April of this year. The realignment of theater missile warning to our sister service enabled USASMDC to take on new mission sets focused on providing close space support to the tactical warfighter while still meeting our joint and coalition responsibilities. Four Army companies will officially case their colors on April 15, 2024, after nearly a quarter century of providing dedicated theater support to the joint and coalition forces worldwide.

One of the first opportunities occurred to integrate Army space-cyber-special operation forces (SOF) capabilities in May 2023. This took place during Army SOF National Training Center Rotation, and during this rotation, the fusion of Army space elements

with SOF units in support of their missions in an operational environment was completed successfully. USASMDC supported SOF elements through the production of space-enabled effects and products, and these elements were also invaluable in the joint operations center (JOC) targeting process.

As of September 2023, the USASMDC Force Tracking Mission Management Center (FT MMC) began executing its joint force tracking (FT) mission on behalf of USSPACECOM, which provides continuous FT data services to combatant commanders, U.S. Government agencies, and designated coalition partners in support of command and control, situational awareness, and fratricide reduction. The FT MMC receives data from over 70 different tracking device manufacturers, converts that data into a common message format, and disseminates a tailored data feed out to authorized end users across the Department of Defense and U.S. Government. This allows end users to concentrate on their mission sets while the FT MMC concentrates on force tracking data at an enterprise level. The FT MMC currently processes friendly force tracking (FFT), tagging, tracking and locating (TTL), and personnel recovery (PR) data with over 300,000 devices under management, generating approximately 21 million messages per day.

Pacific Sentry/Space Sentry 23 (PS/SS23), was a tier I exercise where USASMDC provided support to USINDOPACOM and USSPACECOM. USASMDC used PS/SS23 to integrate space control planning teams with USSPACECOM forward elements to provide joint non-kinetic targeting data. USASMDC also integrated with the Australian Defense Force space component throughout the exercise. The exercise demonstrated that the methods used to disseminate intelligence over secure means did not adequately replicate standard intelligence dissemination and that USASMDC will work with the Department of the Army to define the requirement, mitigate risk, and satisfactorily resource USSPACECOM's intelligence requirements.

Keen Edge 24 (KE24), was a USINDOPACOM lead exercise, with support from USSPACECOM and capability and planners from USASMDC. Furthermore, this

exercise also supported the coordination of two coalition partners. One of the lessons learned from this exercise was that the number of target aim points (NLRPs) were limited for the exercise, which resulted in the underutilization of space capabilities due to the lack of NLRPs.

In the near term, USASMDC supports several other events. The USASMDC Center of Excellence, Technical Center, and 1st Space Brigade participated in the Project Convergences Capstone 4 (PCC4) experiment to further explore future space capabilities such as the Theater Strike Effects Group (TSEG). USASMDC will also provide forces and full staff participation in Austere Challenge/Global Lightning/Vigilant Shield 24 (AC/GL/VS24). AC/GL/VS24 is USEUCOM's focused Tier I exercise. USSTRATCOM and USNORTHCOM integrated into USEUCOM's battle rhythm, and USSPACECOM will provide a response cell. USASMDC will also conduct external evaluations for the 1st Space Brigade and 100th GMD Brigade during this event, this will be the first tier I that USASMDC formally supports USNORTHCOM as an ASCC. The USEUCOM AOR is the backdrop for the exercise with limited impact to the homeland to support USNORTHCOM objectives. Finally, USASMDC continues direct integration with United Kingdom Space Command to provide space augmentation to USASMDC mission requirements and possibly provide liaison support in the United Kingdom.

Space Operations

As space, cyber, and SOF continue to work together, 1st Space Brigade capitalized on engagements with U.S. Army Special Operations Command (USASOC) to experiment with new tactical space control technology. Over the past 18 months, the brigade task organized to support a shift towards more expeditionary systems to operate in the corps' extended deep areas of conflict. Recalibrated formations such as the Army space control planning team and tactical experimentation team led these initiatives. The Army space enterprise is considering all options, including integration of existing commercial and government off-the-shelf technologies to demonstrate concepts that fulfill the current demand for a ruggedized, tactical space control system. These new, small form factor systems fit in just a few man-portable cases and employ a team of five Army

space professionals. Space Soldiers utilized these systems to provide real-time space effects in a variety of experimentation exercises to include Project Convergence 22, Command Overland, USASOC capabilities exercise, two multi-lateral airborne trainings, and multiple Sage Eagles.

In these venues, Army space operator crews provided on-the-move support to SOF entities by leveraging smaller, more maneuverable technology at the ODA level. The 1st Space Brigade's Soldiers integrated capabilities and space operations into scenarios to demonstrate how space, cyber, and SOF can work together to support multi-domain and full-spectrum operations, providing SOF and the joint force with an enhanced ability to see, sense, stimulate, strike, and assess across the spectrum. SOF partners enable space Soldiers to gain the necessary placement and access to operate tactical Army space control systems in support of operations within denied, degraded, and disrupted austere operating environments.

To enable and achieve the Army Space Vision, USASMDC is investigating the establishment of an Army Space Operations Branch to deliver specialized, highly trained, and certified Soldiers with the experience and expertise to provide relevant and timely effects on the battlefield in support of maneuver commanders.

In parallel, USASMDC is championing the Army Space Training Strategy. This strategy provides a framework to educate and train the force, not otherwise trained in space operations, to integrate space knowledge, skills, and tasks into professional military education, maneuver training centers, and home station training with the requisite training devices while simultaneously taking an Army enterprise approach to prepare the force to fight, and win, in a contested multi-domain environment.

While technological advances can and will disrupt adversary position, navigation, and timing (PNT) and communications capabilities, we must also employ technological advances to interdict adversary space-based capabilities that provide surveillance and reconnaissance. By collaborating with joint partners, we can further integrate space and

high-altitude capabilities to the tactical edge while our science and technology (S&T) efforts continue underway to ensure dominance in space control, deep sensing, and increasing the survivability and capability of our sensing systems.

Integrating space operations into missile defense operations, and vice versa, is of utmost importance to our national security. Increasingly, space and missile defense enterprises depend on and enhance each other. Given recent trends, it has become apparent we cannot effectively contribute to strategic deterrence or respond in crisis if we approach the multi-domain environment with differing business sectors or phases of an operation. Yesterday's military relied on space for warning and targeting, and yesterday's military relied on missile defense to protect the force. Today, space and missile defense integration must be at the very start of our prototyping, concept development, and application—across and in concert with our Army, joint, and coalition partners. This integrated approach is both cost effective *and* mission effective.

IAMD

S&T investments in high-energy lasers (HEL) executed by USASMDC led to the fielding of the Palletized High Energy Laser (P-HEL) and the Directed Energy Maneuver Short Range Air Defense (DE M-SHORAD) systems by the RCCTO. We must continue S&T efforts to increase lethality; reduce size, weight, power, and costs; increase magazine depth; and increase the range-to-effect of high-energy laser weapon systems. USASMDC also continues collaborating with the RCCTO to ensure delivery of HEL systems that are reliable and affordable.

USASMDC will also continue to provide hypersonic test support to the RCCTO and Navy Conventional Prompt Strike Program Offices and develop hypersonic targets for testing of new and existing IAMD capabilities. USASMDC is prepared to support MDA development of the Guam Defense System (GDS) by providing military operator doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy (DOTMLPF-P) analysis and operator requirements support to MDA's acquisition process, development, and fielding.

Additionally, the Missile Defense Agency (MDA) provided software and hardware (HW) deployment of version CX4.0 across the fleet of Terminal High-Altitude Area Defense (THAAD) forward-based mode radars (AN/TPY-2), providing enhancements to initial hypersonic defense tracking, dynamic discrimination architecture, cybersecurity, electronic protection, objective debris mitigation, and spurious track mitigation.

MDA also completed MILCON activities for the construction of Missile Field 4 at FGAK and is currently installing and testing launch support equipment in each of the silo interface vaults. These activities will continue through the end of calendar year 2024. Furthermore, the additional 20 silos in MF4 will create flexibility for ground system operations and sustainment and will support the subsequent fielding of 20 Next Generation Interceptors in the future.

MF4 enhances interceptor capacity to defend the homeland against long-range ballistic missile attack. The expansion of MF4 increases the footprint of the Missile Defense Complex (MDC) on FGAK, and this increased footprint, along with additional assets, will require increasing physical security assets including personnel and devices. Security personnel requirements have been historically achieved through RFF or mobilized National Guard units from the lower 48 states, and security devices such as cameras, badging, and detection systems will also need to increase based on the expansion.

And finally, USASMDC also continues to ensure site security at FGAK, fielding additional C-sUAS systems in defense of the MDC. Several systems are now employed, and we continue to ensure that we have the most streamlined legal authorities and reporting practices to showcase these capabilities. Moreover, the 49th Missile Defense Battalion, 100th Missile Defense Brigade, and USASMDC continue to coordinate to provide updated, state-of-the-art technology in the continuous effort to defend the MDC against C-sUAS threats.

Senior Commander

The mission of the senior commander is to "care for Soldiers, Families, and Department of the Army Civilians, and to enable unit readiness." Therefore, the senior commander will routinely resolve installation issues with Army Material Command (AMC) and, as needed, the associated ASCC or Direct Reporting Unit. The senior commander also uses the garrison command as the primary organization to provide services and resources to customers in support of accomplishing this mission. All applicable commands support the senior commander in the execution of senior commander responsibilities; therefore, the senior commander is the commander supported by Army Materiel Command's Garrison Command and affiliated Installation Management Command (IMCOM) director, other installation service providers, and tenants.

I routinely work with the IMCOM director in the Pacific region, regarding concerns and investments at FGAK and USAG-KA. The Fort Greely Community Activity Center has been modernized and has new services that include a new coffee cafe and bar area, greatly improving the community's food and drink options and providing a safe and relaxing environment. Moreover, ground will be broken this year to add an indoor playground expansion to the activity center by late 2025. Additionally, the garrison continues to support 24-hour operations and intends to improve its aging infrastructure with efforts underway to de-centralize heating in all the buildings and become more energy resilient and less dependent on utility providers in the future. This is to combat projected increased energy costs across Alaska over the next 10 years.

FGAK's and USAG-KA's locations are crucial to our national security. Fort Greely is ideally situated in Alaska to address security challenges in Northeast Asia. Kwajalein is home to a U.S. Army garrison and the Ronald Reagan Ballistic Missile Defense Test Site, which is a vital site in the Pacific Islands region – a strategically crucial part of the broader Indo-Pacific.

The Compacts of Free Association between the United States and the Republic of the Marshall Islands, the Federated States of Micronesia, and Palau facilitate our strategic partnership with each of these nations. Under these agreements, the United States has

the rights of strategic denial and assured access. In return, we serve as the defense force for these countries. Kwajalein's Reagan Test Site protects key space assets, contributes to space domain awareness for USSPACECOM, and enables mission essential, missile operational and developmental test capability for USSTRATCOM. However, this unique place and its one-of-a-kind capabilities require significant investment now and in the future. In January of this year, for example, one of the U.S. Army Garrison's islands, Roi-Namur, was inundated by a series of rogue waves. Half of Roi-Namur, home to most of the Reagan Test Site's radars, was flooded, causing millions of dollars in damages to an already weakened infrastructure and leaving its radars inoperable for weeks.

Kwajalein's unique position brings joint value, and joint value requires joint investment. Therefore, USASMDC is committed to leading this effort for the Joint Force. We are actively evaluating command relationships and resourcing processes for efficiencies to revitalize this important multi-domain operations mission in the Pacific for the decades ahead.

However, even as I highlight the challenging decades ahead and USASMDC makes incredible strides in these essential, no-fail missions, I want to reiterate that our most important assets are the thousands of Soldiers, Sailors, Airmen, Marines, Guardians, Civilians, and Contractors who deploy and employ our IAMD system—and the families that sacrifice to make their efforts possible. Our “ONE TEAM,” family mindset at USASMDC has been foundational to our success and empowers mission accomplishment.

I appreciate the opportunity to address missile defense matters and look forward to addressing your questions.

LTG Sean A. Gainey
Commanding General
USASMDC

Lieutenant General Sean A. Gainey assumed command of the U.S. Army Space and Missile Defense Command and Joint Functional Component Command for Integrated Missile Defense on Jan. 9, 2024. In this role, he leads 2,600 military and civilian professionals in their no-fail mission of providing the Army and joint force trained and equipped space and global ballistic missile defense forces, and space, missile defense and high-altitude capabilities. The command serves as the Army Service Component Command to U.S. Space Command and U.S. Strategic Command and as the ASCC for ground-based midcourse defense to U.S. Northern Command.



Gainey graduated from Georgia Southern University in 1990 with a Bachelor of Business Administration and was commissioned a second lieutenant in the Air Defense Artillery. He also earned a Master of Science in personnel management from Central Michigan University. His professional military education includes the Air Defense Officer Basic and Advanced courses, Command and General Staff College, and Senior Service College at the Dwight D. Eisenhower School for National Security, where he earned a Master of Science in national security and resource strategy.

Gainey most recently served as the director, Joint C-UAS Office, and director, Fires in the G3/5/7, Headquarters Department of the Army. Other assignments include: chaparral/stinger platoon leader, Avenger Battery executive officer and assistant operations officer, 5th Battalion, 2nd Air Defense Artillery Regiment, Bamberg, Germany; assistant operations officer and commander of Charlie Battery, 3rd Battalion, 43rd Air Defense Artillery Regiment, Fort Bliss, Texas; Air Defense Artillery observer/controller and G3 plans officer, Combat Maneuver Training Center, Hohenfels, Germany; battalion executive officer and later brigade operations officer, 5th Battalion, 7th Air Defense Artillery, U.S. Army Europe; lieutenant colonel assignment officer and executive officer to the director of Officer Personnel Management Directorate, U.S. Army Human Resources Command, Alexandria, Virginia; commander, 5th Battalion, 7th Air Defense Artillery, Kaiserslautern, Germany; chief of Air and Missile Defense Division, U.S. Army Europe; commander, 108th Air Defense Artillery Brigade, Fort Bragg, North Carolina; chief, Global Force Management Division, Joint Staff, J3, Washington, DC; deputy commanding general, U.S. Army Cadet Command, Fort Knox, Kentucky; commanding general, 94th Army Air and Missile Defense Command, Hickam Air Force Base, Hawaii; and deputy director for Force Protection, J-8, overseeing the Joint Integrated Air and Missile Defense Organization, the Joint Requirements Office for CBRN Defense, and the Force Protection Division.

He has deployed in support of Operation Southern Watch, Operation Iraqi Freedom, Operation Joint Task Force-East, and Operation Enduring Freedom.

Gainey's awards and decorations include the Defense Superior Service Medal (with one oak leaf cluster), Legion of Merit, Bronze Star Medal, Meritorious Service Medal (with four oak leaf clusters), Army Commendation Medal (with three oak leaf clusters), Joint Service Achievement Medal, Army Achievement Medal (with one oak leaf cluster), Air Force Achievement Medal, Meritorious Unit Citation, and Parachutist Badge.

January 2024



UNCLASSIFIED

UNITED STATES SPACE COMMAND

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

STATEMENT OF: Lieutenant General Thomas L. James
Deputy Commander, United States Space Command

April 12, 2024

UNCLASSIFIED

UNCLASSIFIED

Introduction

After a lengthy examination by the Joint Staff and Combatant Commands (CCMDs), the April 2023 Unified Command Plan (UCP) tasked United States Space Command (USSPACECOM) with responsibility for Trans-Regional Missile Defense planning and operational support. The decision was the culmination of a comprehensive study of the roles, responsibilities, and authorities associated with the missile defense enterprise, and represented an alignment with the 2022 Missile Defense Review (MDR). Commander, USSPACECOM received this responsibility with the expectation USSPACECOM would benefit from synergies with our other Unified Command Plan (UCP) responsibilities, as the sensor and command and control (C2) elements of regional and Trans-Regional Missile Defense become increasingly space-based and space-reliant.

One example of those synergies is the alignment of Trans-Regional Missile Defense with USSPACECOM's existing role as the Global Sensor Manager, which is closely linked to broader operational efforts in space domain awareness, missile warning, and missile defense of the United States and our Allies. Incorporating the Trans-Regional Missile Defense responsibility, USSPACECOM will maximize the employment of multi-role sensors, terrestrial, and on-orbit. These sensors contribute to our understanding and awareness of threats in space, while also supporting the missile warning and missile defense missions. Trans-Regional Missile Defense plays a critical role in deterrence by denial, which aids in achieving the National Defense Strategy's priorities of defending the homeland, deterring strategic attack, and deterring aggression.

UNCLASSIFIED

UNCLASSIFIED

Environment

Our strategic competitors are evolving, diversifying, and proliferating their inventories of advanced missiles and technologies, which could threaten the U.S. homeland and our interests around the globe. Hypersonic glide vehicles and cruise missiles pose diverse threats which complicate targeting, tracking, and impact determination.

The People's Republic of China (PRC) is our pacing challenge and is expanding its missile capabilities with an emphasis on hypersonic systems and maneuverable reentry vehicles. The PRC's continuing investment in advanced weapons technologies will likely only expand their already diverse strike capabilities over the coming decades.

Russia continues to pursue upgrades to its nuclear ballistic and cruise missile arsenals. These upgrades present a significant strategic threat designed to stress our sensors and defensive postures. Throughout two years of combat operations against Ukraine, Russia has demonstrated the capability to sustain a limited combined fires campaign over an extended period despite sanctions, while also incorporating novel strike weapons received from nations sympathetic to its cause.

The Democratic People's Republic of Korea (DPRK) and Iran continue to expand their offensive strategic capabilities, developing hypersonic, ballistic, and cruise missiles that threaten our deployed forces, our Allies and partners, and in the case of DPRK long-range ballistic missiles, the U.S. homeland.

Lastly, the rise of affordable strike options using low-cost one-way-attack unmanned aerial vehicles (UAVs) and off-the-shelf UAV technology potentially allows any actor to asymmetrically threaten our critical missile defense systems and architecture, both in peacetime and throughout the course of any future conflict. Given these threats, we are entering a new era,

UNCLASSIFIED

UNCLASSIFIED

in which the U.S. and its Allies may be forced to defend against complex attacks combining high- and low-end technologies to lethal effect like never before.

USSPACECOM's Role in Trans-Regional Missile Defense

Our strategic competitors' offensive missile capabilities have accelerated. Today, multiple strategic competitors are capable of overwhelming our conventional missile defenses. They will also increasingly challenge our ability to execute operations and protect and defend U.S. and Allies' vital interests.

Given the global reach of potential adversaries' capabilities and the supra-global nature of our space-based and terrestrial sensor architecture, USSPACECOM's responsibility for Trans-Regional Missile Defense planning and operations support and Global Sensor Management demands that we posture the sensor element of the missile defense architecture to counter the evolving threat. With receipt of the Trans-Regional Missile Defense planning and operations support responsibility, USSPACECOM also gained the Joint Functional Component Command for Integrated Missile Defense (JFCC IMD) from United States Strategic Command (USSTRATCOM). Throughout the transition, JFCC IMD ensured the continued execution of these responsibilities without any degradation to the mission. USSPACECOM has integrated JFCC IMD into our command structures and processes and we are exploring ways to further optimize the execution of this important mission.

USSPACECOM's Role as Global Sensor Manager

As the Global Sensor Manager, USSPACECOM is responsible for planning, managing, and overseeing the operations of all assigned space domain awareness, missile defense, and missile warning sensors. The data the sensors provide is crucial to Department of Defense and national leader decision superiority. As the Global Sensor Manager, USSPACECOM is tasked

UNCLASSIFIED

UNCLASSIFIED

with coordinating with all CCMDs, Federal departments and agencies, and our Allies and international partners to integrate the fullest range of sensors capable of contributing to space domain awareness. Integrating these systems across CCMDs provides persistent awareness of both terrestrial and space-based threats, 24 hours a day, 365 days a year.

USSPACECOM's Technical Sensor Contributions

USSPACECOM's assigned sensors are a critical enabler to all CCMDs and national-level military command centers. Most assigned sensors perform missile warning, missile defense, and space domain awareness missions simultaneously. Many purpose-built, missile defense sensors are also capable of contributing to USSPACECOM's space domain awareness mission. For example, in partnership with other CCMDs, the Space Development Agency (SDA), and the Missile Defense Agency (MDA), USSPACECOM demonstrated how, without requiring tactical control, regional missile defense sensors can be used for more than one function to maximize their technical potential. Traditional missile defense sensors are capable of augmenting missile warning sensor coverage and have proven their value in detecting and tracking space threats exiting the atmosphere, transiting, and reentering from the space domain.

USSPACECOM sensors, like the Space-Based Infrared System (SBIRS) and Defense Support Program satellites, provide the first alert of a missile launch from anywhere on the planet to national leaders, CCMDs, the National Military Command System, and select international partners. This initial alert tips and cues USSPACECOM and other CCMD sensors through theater and homeland defense communications architectures connecting USSPACECOM's space-based warning segment to terrestrial warning and defense sensors for theater and homeland missile defense. Near term proliferation of these architectures and capabilities by the Department is critical to the Command's future approach. In conflict,

UNCLASSIFIED

UNCLASSIFIED

proliferation adds resilience to essential capabilities. In competition, resilience imposes costs on our strategic competitors' attack strategies and is critical to integrated deterrence. Resilience is essential but will not alone deter attacks or assure protection for our space assets. For USSPACECOM to protect and defend U.S. and as directed, Allied, Partner, and commercial space assets, the Command requires Congress' continued investment in joint military space capabilities, resilient architectures, and protection efforts.

USSPACECOM is working with other CCMDs and agencies to integrate and optimize multi-mission sensors across all our assigned mission areas. AN/TPY-2, Sea-Based X-Band Radar, and Aegis Combat Systems can each contribute to our collective understanding of events and activities in the space domain in both exercise and real-world operations. In coordination with other CCMDs and interagency partners, the Command is aggressively testing technical solutions that enhance both the supported CCMDs' regional missile defense missions and USSPACECOM's space domain awareness mission. Additional fusion of other intelligence disciplines through close cooperation with the Intelligence Community helps further improve the Command's vital multi-mission support.

USSPACECOM is working to leverage commercial space partnerships as part of the Command's Global Sensor Management role for multi-mission support. American commercial innovation is a competitive advantage our competitors do not enjoy, and our commercial partners are providing unprecedented capability in support of our response to the ongoing Russian war on Ukraine. USSPACECOM has published a Commercial Integration Strategy to enhance collaboration, integration, and partnership with U.S. commercial industry. This strategy establishes priorities and synchronizes commercial integration efforts so that USSPACECOM can mitigate capability gaps and improve space architecture resiliency.

UNCLASSIFIED

UNCLASSIFIED

Coordination with Other CCMDs and Agencies

USSPACECOM has partnered with United States Northern Command (USNORTHCOM), USSTRATCOM, and other agencies to provide exquisite Global Sensor Management capabilities. In the past year, this team collectively removed barriers in support of our nation's collective warning and defense interests. Our integration with USNORTHCOM on missile warning and missile defense helps provide sensor coverage for the homeland defense mission. In addition to our CCMD support, the Global Sensor Management role continues to expand our relationships and integration with Allied nations and organizations such as NATO.

Beyond our daily coordination in response to real-world operational demands, USSPACECOM regularly participates in advanced, coalition-integrated regional and global exercises and war-games to build and test our sensor management processes. Exercises like GLOBAL LIGHTNING, GLOBAL THUNDER, and AUSTERE CHALLENGE, and our first ever USSPACECOM-led Tier 1 Joint Force exercise, APOLLO GRIFFIN, provide opportunities to employ our sensors and sensor management capabilities. We use these exercises to train the Joint Force to operate in this complex environment, while also preparing Allies, and partners to better leverage the Global Sensor Management capabilities we provide. USSPACECOM will continue to demonstrate our sensor management and other operational concepts by conducting mission-centric exercises to prepare the command for APOLLO GRIFFIN and to refine our support to United States Indo-Pacific Command and United States European Command during their Tier 1 exercises.

Today's Trans-Regional Missile Defense Sensor Architecture and Future Capabilities

Combining Global Sensor Manager responsibilities with Trans-Regional Missile Defense and missile warning helps USSPACECOM advocate for integrated and efficient solutions that

UNCLASSIFIED

UNCLASSIFIED

modernize and recapitalize our aging sensor architecture. We face the continuing challenge of keeping pace with evolving threats and technologies while ensuring our sensor architecture remains optimized and modernized with key technical software and hardware upgrades. Sustaining and upgrading 20th century sensors that are increasingly obsolete and hard to maintain remains a challenge. The existing, limited portfolios of aging terrestrial and space-based sensors requires USSPACECOM to pursue the fielding of new capabilities while still leveraging and integrating legacy sensors in support of critical warning and active defense functions today. While we need to expand and improve our terrestrial capabilities, the optimal solution requires investment and leveraging of our advantages with a space-based sensor layer integrated with ground-based sensors to defeat advanced and evolving threats.

Continued funding for research and development efforts, such as next-generation, space-based and terrestrial sensor systems, is key to keeping pace with evolving competitors across all domains. These capabilities must be resilient, and we must be able to defend and reconstitute them to achieve space and cross-domain mission assurance for the Joint Force. On-orbit systems provide valuable solutions for layered tracking and discrimination capability for terrestrial threats, while terrestrial systems provide valuable solutions for tracking and characterizing activities in space. A proliferated space tracking and characterization constellation combined with next-generation, overhead persistent infrared systems would provide significant improvements necessary to detect, maintain custody of, and target emerging advanced threats. USSPACECOM is working with the SDA and United States Space Force to inform operational needs for future space-based missile warning, missile tracking, and C2 systems. These requirements include the ability to tip and cue sensors across multiple orbits, which will provide

UNCLASSIFIED

UNCLASSIFIED

global, pole-to-pole detection and tracking capabilities. These space-based layers must be able to detect, track, characterize, and target hypersonic and ballistic missile threats.

Whether future systems exist in space, air, land, or sea, they must possess multiple mission area capabilities and be integrated into the joint all-domain architecture. Space-based and terrestrial sensor architectures must be capable of supporting space domain awareness, missile defense, and missile warning missions simultaneously. Their disparate data must be fusible, displayable, and timely to allow decision makers to act on the best available information. To test these emerging capabilities, USSPACECOM continues to use policy-focused wargames like NIMBLE TITAN and Operator-in-the-Loop wargames, like NIMBLE FIRE, to test developmental concepts, evaluate advanced threats, and assess Joint doctrine. Only through achieving and maintaining decision superiority can we expect to sustain our edge throughout the spectrum of competition.

USSPACECOM strongly endorses continuing work on systems like MDA's Long-Range Discrimination Radar and spiral improvements to Command and Control, Battle Management and Communications (C2BMC); SDA's Low Earth Orbit-based Proliferated Warfighter Space Architecture providing Wide Field of View Infrared tracking, low-latency Combined Joint All-Domain Command and Control; and Space Systems Command's Medium Earth Orbit-based Medium-Field of View Infrared tracking. We are also preparing to integrate Space Surveillance Network sensors into C2BMC that will greatly enhance our multi-mission battlespace awareness. C2BMC provides USSPACECOM greater flexibility as the Global Sensor Manager and is critical to integrating the missile warning, missile defense, and space domain awareness missions.

Supporting the Transition to Comprehensive Missile Defeat

UNCLASSIFIED

UNCLASSIFIED

While advances in sensor capability will enhance the lethality of our forthcoming effector systems, these advances are insufficient to overcome the advancing adversary threat. The 2022 MDR states, “It is a strategic imperative for the U.S. to continue investments and innovation in the development of full spectrum missile defeat capabilities to maintain deterrence and offer protection, while hedging against uncertainty.” As the Department fulfills this charge to explore and enact the full range of capabilities to counter advanced adversary offensive missile and hybrid threats across the spectrum of conflict, USSPACECOM, with fellow CCMDs, Services, Allies, and Interagency and Commercial partners stands ready to leverage our advantages in the space domain to regain and expand our competitive advantage.

Conclusion

USSPACECOM’s nearly 18,000 joint military and civilian professionals work every day to provide unmatched execution of our Trans-Regional Missile Defense, missile warning, Global Sensor Manager, and other responsibilities through the innovative employment of our existing sensors. Moving forward, the development and incorporation of multi-use or expanded sensors will increase the resiliency of this critical network. We are working with MDA and the Services to bring this to fruition. We appreciate Congress’ support as we further integrate and optimize our assigned responsibilities to enable the Command’s foundational moral responsibility to ensure the delivery of space capabilities to the Joint Force, the Nation, and our Allies, while providing additional capability to protect the homeland, the Joint Force, and our Allies from advanced missile threats.

UNCLASSIFIED



LIEUTENANT GENERAL THOMAS L. JAMES

Deputy Commander

LTG Thomas L. James serves as the Deputy Commander for United States Space Command, Peterson Space Force Base, Colorado. United States Space Command is the Unified Combatant Command responsible for conducting operations in, from, and to space to deter conflict, and if necessary, defeat aggression, deliver space combat power to for the Joint/Combined force, and defend U.S. vital interests with allies and partners.

LTG James' previous General Officer assignments included Deputy Commander, Combined/Joint Force Space Component Command; Commander, Combined Joint Task Force-Space Operations; Commander, Joint Task Force-Space Defense; Director of Operations, USSPACECOM; Director, Operations, Plans, and Exercises, Joint Force Space Component Command; and Deputy Commander, Joint Functional Component Command for Space.



LTG James enlisted in the Mississippi National Guard serving in medical and Special Forces units. He was commissioned through ROTC while obtaining a Bachelor of Science Degree in Molecular Biology from the University of Southern Mississippi and entered active duty as a U.S. Army aviator.

LTG James' assignments include Team Medic, then Team Executive Officer, A Company, 2nd Battalion, 20th Special Forces Group (Airborne), Camp Shelby, Miss.; Battalion Liaison Officer, then Aeroscout Platoon Leader, then Assistant Battalion S-3, then Battalion S-1 and then S-2, 2-227th Attack Helicopter Battalion (AH-64), 4th Aviation Brigade, 3rd Armored Division, Federal Republic of Germany (served in Operation Desert Storm); Attack/Assault Helicopter Platoon Leader, then Company Executive Officer, and then Liaison Officer, 1st Battalion, 160th Special Operations Aviation Regiment (Airborne), Fort Campbell, Ky.; Assault Company Commander, B Company (UH-60), 2nd Assault Helicopter Battalion, 4th Aviation Brigade, 2nd Infantry Division, Republic of Korea.

LTG James' assignments since becoming an Army Space Operations Officer include Corps Plans Officer and Space and Information Operations Officer, Headquarters, III Corps, Fort Hood, Texas; Space and Information Operations Officer, Combined Joint Task Force-180 (XVIII Airborne Corps), Bagram, Afghanistan; Space Operations Officer, Combined Joint Special Operations Task Force – Bagram, Afghanistan; Future Operations Planner and Space and Information Operations Officer,

Combined Joint Task Force – 7 (III Armored Corps), Baghdad, Iraq; Chief, Space Capabilities Branch, Directorate of Combat Developments, U.S. Army Space and Missile Defense Command/Army Forces Strategic Command, Peterson Air Force Base, Colo.; Deputy Director of Space Forces, Central Command Combined Air Operations Center (Arabian Gulf); Army Liaison Element, National Security Space Institute, Colorado Springs, Colo.; Commander, 1st Space Battalion, 1st Space Brigade, Peterson Air Force Base, Colo.; Chief of Space, Third Army/Army Central, Camp Arifjan, Kuwait /Shaw Air Force Base, S. Car; Deputy Director of USASMD/ARSTRAT's Future Warfare Center, Redstone Arsenal, Ala.; Commander, 1st Space Brigade, Peterson Air Force Base, Colo; and the Director of Space Policy Implementation, Office of the Under Secretary for Policy, Office of the Secretary of Defense, Pentagon, Va.

His military education includes the U.S. Army Aviation Officer Basic and Advanced Courses; three master's degrees from the United States Air Force's Air University while attending the Air Command and Staff College; the School of Advanced Air and Space Studies; and the Air, Space and Cyber War College; and various Army and Air Force advanced space courses. Additionally, he holds a Master of International Relations degree from Auburn University at Montgomery and completed the Harvard Senior Executive Fellowship Program.

LTG James' awards and decorations include the Legion of Merit (oak leaf cluster), Bronze Star (oak leaf cluster), Meritorious Service Medal (three oak leaf clusters), Army Commendation Medal (silver oak leaf cluster and two bronze oak leaf clusters), Air Medal (second award), Joint Achievement Medal (oak leaf cluster), Army Achievement Medal, Southwest Asia Campaign Medal (three stars), Afghanistan Campaign Medal, Iraq Campaign Medal (three stars), Global War on Terrorism Expeditionary Medal, Global War on Terrorism Service Medal, Korean Defense Service Medal, Saudi Arabia-Kuwait Liberation Medal, Kuwait Liberation Medal, and Joint Meritorious Unit Award (three oak leaf clusters). He has earned the Army Master Space Badge, the Army Senior Aviator Badge, Ranger Tab, Parachutists Wings, and Air Assault Wings.

LTG James is married to the very lovely Nicole and is the proud father of daughter Rachel.

CAO Dec 23

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

APRIL 12, 2024

QUESTIONS SUBMITTED BY MR. MOULTON

Mr. MOULTON. Given that the President recently assigned to U.S. Space Command the responsibility for coordinating trans-regional missile defense, how does U.S. Space Command contribute to the complex and strategic role that missile defense plays in our national security?

General JAMES. The transfer of the trans-regional missile defense (TRMD) responsibility aligns with the global sensor management (GSM) responsibility under USSPACECOM and allows more efficient use of kinetic and non-kinetic sensor to shooter chains across multiple Combatant Commands. USSPACECOM is uniquely positioned to support and contribute to cross-Combatant Command coordination from the tactical to the strategic levels. USSPACECOM provides dynamic management of global terrestrial, afloat, and space-based multi-mission sensors while optimizing and defending associated command and control architectures. GSM and TRMD alignment create additional efficiencies by consolidating policy, planning, assessment, intelligence, training, and exercise support to the Joint Force. USSPACECOM provides planning support to other Combatant Commands, including a global perspective of Ally and Partner capabilities. USSPACECOM also ensures our defenses continue to evolve by articulating and emphasizing warfighter requirements; advising, assessing, and integrating warfighter feedback into the capability development process; and enabling enhanced synchronization to future operations.

QUESTIONS SUBMITTED BY MR. CARBAJAL

Mr. CARBAJAL. How are flight test opportunities being provided to enable the next generation of intercept systems?

General COLLINS. The Missile Defense Agency (MDA) follows a rigorous process to develop the MDA Integrated Master Test Plan (IMTP) on an annual basis, documenting the planned test opportunities of each system. The IMTP is delivered to Congress each spring synchronized with the President's Budget submission. The IMTP development process involves multiple phases to collect program requirements, design and schedule tests, cost estimate, and evaluate against budget constraints aligned with MDA's flight test priorities. This process intakes program requirements both within and beyond the Future Years Defense Program (FYDP) years to ensure long-lead test resourcing can be addressed within the FYDP. Additionally, the IMTP development process closely coordinates program test requirements with other external Department of Defense stakeholders.

External stakeholders, including but are not limited to the following:

- Director, Operational Test and Evaluation (DOT&E)

- Office of the Undersecretary of Defense for Research and Engineering Director, Developmental Test, Evaluation, and Assessments (DTE&A)
- Commander, Joint Functional Component Command for Integrated Missile Defense (JFCC IMD) (representing the combatant commands)
- Commander, United States (U.S.) Army Test and Evaluation Command (ATEC)
- Commander, U.S. Air Force Operational Test and Evaluation Center (AFOTEC)
- Director, U.S. Navy Operational Test and Evaluation Force (OPTEVFOR);
- Space Training and Readiness Command (STARCOM)
- Commander, Joint Interoperability Test Command (JITC).

DOT&E, DTE&A, JFCC IMD, ATEC, AFOTEC, OPTEVFOR, STARCOM, and JITC members engage with MDA on a weekly basis to develop flight test opportunities as reflected in the IMTP. These jointly coordinated test opportunities enable and demonstrate the capabilities of future Missile Defense System functionality, including currently documented test schedules for the Next Generation Interceptor, Glide Phase Interceptor, and Defense of Guam programs in IMTP v25.1.

Mr. CARBAJAL. Do existing hypersonic defense strategies focus on both strategic and conventional adversary threats, or are these threats being treated separately?

General COLLINS. Current United States (U.S.) policy distinguishes between regional hypersonic missile threats and threats capable of striking the U.S. homeland. It prioritizes the development of global warning and tracking capabilities to address all hypersonic threats (threats regionally and to the homeland), and the development of active and passive defense capabilities to defend against regional hypersonic threats. Though the United States maintains the right to defend itself against attacks from any source, per longstanding policy, the United States relies on strategic deterrence to address large and intercontinental-range, nuclear missile threats to the U.S. homeland from Russia and the People's Republic of China. I defer to the Office of the Undersecretary of Defense for Policy for more information on U.S. hypersonic defense strategy and policy.

Mr. CARBAJAL. How do the estimated hypersonic interceptor acquisition quantities compare to quantities for existing ballistic or cruise missile interceptors?

General COLLINS. There are currently an approximate 1,650 ballistic missile interceptors which include Ground Based Interceptor, Standard Missile three, Standard Missile six, and Terminal High Altitude Area Defense. Of the 1,650 ballistic missile interceptors, approximately 140 interceptors are dual-use to counter hypersonic threats. These quantities do not include Service capabilities or cruise missile interceptors external to the Missile Defense Agency.

QUESTIONS SUBMITTED BY MR. BACON

Mr. BACON. I am concerned that, with few exceptions, most key U.S. military installations lack dedicated land based air and missile defense:

A) What is the Department of Defense strategy to ensure our overseas air bases and key installations in Europe, the Indo-Pacific and the Middle East are defended from air and missile attack?

B) Has the Department of Defense established a current critical asset list (CAL) and defended asset list (DAL) for key military installations and operating locations in Europe, the Indo-Pacific and the Middle East? Who approves each of these lists?

C) How does the Department determine which military service is responsible for developing, resourcing and operating land-based air and missile defense systems for locations that appear on each CAL/DAL in Europe, the Indo-Pacific and the Middle East?

D) How many sites on each CAL in Europe, the Indo-Pacific and the Middle East are considered undefended (e.g. on the CAL but not on the DAL)?

E) What organization in DoD is responsible for organizing, training, equipping and presenting forces to USSNORTHCOM to defend key military installations in the Continental United States from cruise and hypersonic missile attack from an adversary?

Mr. HILL. A) In accordance with the 2022 Missile Defense Review, the Department of Defense works with allies and partners to provide threat-based, mission-tailored air and missile defense of overseas air bases and key installations to deter and defend against attack and enable conditions for effective U.S., allied, and partner military operations should deterrence fail.

This approach seeks to leverage U.S. and partner capabilities while balancing near-term risk to mission and forces with longer-term Department of Defense efforts to build integrated air and missile defense force readiness, capability, and capacity. We accomplish these objectives through a careful evaluation of air and missile threats and the assignment of U.S. Integrated Air and Missile Defense (IAMD) capabilities through the Department's Global Force Management (GFM) process.

Additional details can be provided in a classified setting.

B) The Department of Defense has established a critical asset list (CAL) and a defended asset list (DAL) for Europe, the Indo-Pacific region, and the Middle East. CALs and DALs are created and approved by combatant commander for their assigned area of responsibility to address mission requirements and reduce risk associated with current and emerging air and missile threats.

C) The Secretary of Defense's initial decision for force allocation is ordered through the Global Force Management Allocation Plan (GFMALP). The Secretary directs changes in military service responsibilities for land-based air and missile defense informed by CCMD requirements, Joint Requirements Oversight Council (JROC) recommendations, fiscal considerations, and changes in the national security environment. The Secretary of Defense determines the assignment of land-based missile defense assets among the combatant commands and determines the forces for land-based missile defense operations through the Global Force Management process.

More than one military service may be tasked to support a CCMD requirement.

D) The Combatant Commander is responsible for determining how best to employ assigned military forces to protect assets on the critical asset list and defended asset list. The number of assets protected, and level of protection offered are dynamic and can change rapidly based upon mission requirements, threats, and available resources. Additional details can be provided in a classified setting.

E) The Secretaries of the Military Departments, through the Military Services, are responsible for organizing, training, and equipping forces (including Reserve Component forces). The Secretary of Defense determines which forces are assigned or allocated to USNORTHCOM to defend key military installations in the continental United States from missile attack.

