



PROCEEDINGS

OVERCOMING THE ROADBLOCKS TO HOMELAND MISSILE DEFENSE

The remarks below were delivered at a symposium on “Overcoming the Roadblocks to Homeland Missile Defense” hosted by National Institute for Public Policy on July 20, 2022. The symposium highlighted policy, technology, organization, and budget issues related to improving missile defense of the U.S. homeland.

David J. Trachtenberg

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First, despite the significant growth in both Russian and Chinese nuclear arsenals, their more aggressive behavior in challenging U.S. national security interests, and their growing collaboration—which Presidents Putin and Xi have referred to as a “friendship” with “no limits”¹—it remains U.S. policy to keep the homeland deliberately vulnerable to Russian and Chinese strategic missile strikes on the apparent presumption that deterrence will work reliably and that active defenses against either nuclear peer competitor are either unnecessary at best or provocative and destabilizing at worst.

Indeed, the FY20 National Defense Authorization Act codifies that, as a matter of policy, the United States will “rely on nuclear deterrence to address...intercontinental missile threats to the homeland” posed by Russia and China.² This goes well beyond the Trump Administration’s 2019 Missile Defense Review, which acknowledged that the United States currently relies on the deterrent threat of offensive retaliation vis-à-vis Russia and China but did not establish this as a policy in perpetuity. I hope our panelists today will discuss the implications of congressional actions and whether Congress is likely to reconsider the current policy of deliberate societal vulnerability to potential missile strikes from either Russia or China, or both.

The Biden Administration’s *Missile Defense Review* has yet to be publicly released. But the president’s prior strong opposition to the U.S. withdrawal from the ABM Treaty, his earlier criticism of what he called a “theological allegiance to missile defense,”³ and his expressed belief that a robust homeland missile defense could spark a new arms race, do not suggest cause for optimism that the current administration will take the lead in proposing to end—or even significantly reduce—U.S. vulnerability to peer adversary nuclear threats and the coercive effect such threats can have on U.S. policies and actions.

¹ *Joint Statement of the Russian Federation and the People’s Republic of China on the International Relations Entering a New Era and the Global Sustainable Development*, February 4, 2022, available at <http://en.kremlin.ru/supplement/5770>.

² Section 1681 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92), December 20, 2019, available at <https://www.congress.gov/116/plaws/publ92/PLAW-116publ92.pdf>.

³ Cited in Council for a Livable World, “65 National Security Leaders Urge President Biden to Put Missile Defense on the Table,” June 3, 2021, available at <https://livableworld.org/63-national-security-leaders-urge-president-biden-to-put-missile-defense-on-the-table/>.



Second, our homeland missile defense program today is focused on rogue state threats and essentially consists of the same ground-based interceptors that we first began deploying almost two decades ago—when Russia was no longer considered an adversary and China was far from a nuclear peer competitor. Even adding another 20 interceptors to the 44 currently deployed, as is planned, is hardly adequate to defend against the thousands of warheads Russia and China can potentially target on the United States.

If we are to get serious about defending the homeland from more robust missile threats—including more sophisticated rogue state missile capabilities as well as cruise missile threats from various quarters—it may be time to consider advanced technologies, including space-based assets and directed energy systems. I hope our discussion today will touch on the availability and practicality of advanced technologies to support a missile defense posture more attuned to the current and prospective threats posed by both nuclear peer adversaries and rogue states, as well as the prospects for moving U.S. policies and programs in that direction. I would note that during his trip to Israel this month, President Biden was briefed on Israel’s “Iron Beam,” a directed energy laser system that could revolutionize missile defense and radically change the offense-defense, cost-benefit calculus in the defender’s favor. If this type of technology proves out and can be adapted to the U.S. homeland defense mission, it potentially could be a real game changer.

Finally, there seems to be a “business as usual” attitude when it comes to homeland missile defense, with missile defense programs competing with other priorities for limited resources. The Services appear uninterested in significantly ramping up efforts to defend the homeland from more sophisticated missile threats, as doing so would detract from other Service priorities. Over the past decade, the Missile Defense Agency’s budget has hovered on average at around \$10 billion a year.⁴ This year’s MDA budget request is slightly less.⁵ This suggests to me a “treading water” approach. To spend less than 2 percent of the overall defense budget on missile defense and a fraction of that on defending the homeland seems wildly out of touch with the current realities of the new global strategic environment facing the United States.

⁴ Wes Rumbaugh and Tom Karako, Seeking Alignment: Missile Defense and Defeat in the 2022 Budget, December 2021, available at https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/211210_Rumbaugh_Seeking_Alignment_0.pdf?FJmZgswXoV.XP9VFjqXkwGJ7RW2lcuLN.

⁵ Jen Judson, “Missile Defense Agency seeks \$9.6 billion in FY23 budget,” *Defense News*, March 29, 2022, available at <https://www.defensenews.com/congress/budget/2022/03/29/missile-defense-agency-seeks-96-billion-in-fy23-budget/#:~:text=The%20MDA%20asked%20for%20%248.9,a%20total%20of%20%2410.4%20billion..>

Matthew R. Costlow

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I will focus my short remarks today on one of the major policy obstacles to expanding the size and scope of U.S. homeland missile defenses. The United States expects to increase its homeland ballistic missile defense interceptors to 64, from the 44 today, deployed by 2028. Cruise missile defense of the homeland has growing interest on the Hill, but very little in the way of budget allocation. The Missile Defense Agency is developing an interceptor against hypersonic threats, but it will initially be only for regional threats.

To put it mildly, there is a very large delta between the missile threats to the U.S. homeland and the U.S. ability to counter them kinetically. This is in part due to a deliberate policy choice by U.S. officials, administration after administration. Russia has not followed the U.S. lead, preferring instead to build increasingly capable, and larger numbers, of missile defenses designed to defeat U.S. intercontinental capabilities. If that is not enough, Russia is helping China build its own missile defense network against U.S. capabilities. As Don Brennan and others pointed out over 50 years ago, it is incredibly strange that the United States—which so values the lives of its citizens—is the one which repeatedly rejects missile defenses; while Russia and China—who quite obviously do not value the lives of their citizens as much—are the ones building defenses for their countries.

For 20 years, and likely going back even further, the U.S. Department of Defense has said in nearly every major national strategy-level document that “defense of the homeland is the number one mission.” As Donald Rumsfeld wrote in the 2001 Quadrennial Defense Review, released on September 30th, 2001, “Defending the Nation from attack is the foundation of strategy.”

If defending the homeland is the number one mission, or more fundamentally, the “foundation of strategy” itself, and the threats to the homeland so stark and growing in severity, then why is homeland missile defense so difficult to promote successfully? As the other panelists will no doubt address in their remarks, the answer lies at the confluence of difficult engineering problems and entrenched Cold War orthodoxy that passes for “common sense” these days.

There is no doubt in my mind that anyone who proposes to expand the size and the scope of U.S. homeland missile defense efforts will be criticized for making a radical departure in U.S. defense policy. Let me suggest that one way to overcome this criticism is to respond that an expanded U.S. homeland missile defense system actually corrects a radical discontinuity in U.S. defense policy. As the eminent strategist Colin Gray once wrote, “bureaucratic inertia is hardly a sound foundation for strategy.” Expanding homeland missile defense—beyond all the deterrence and damage limitation benefits—will make the U.S. policy of “defending the U.S. homeland as the number one mission” a far more credible policy. The United States is alone among the great nuclear powers of today as the only state who prizes deliberate vulnerability to a certain class of weapons as a virtue, not a vice.

Let me close by saying that, in my view, one way we can begin to reverse the corrosive effects of the current commitment to vulnerability against Russian and Chinese threats to the homeland is by pointing out to the American voter that the United States can do far more to defend the homeland, but it so far has not. We, as defense analysts, can sometimes get so wrapped up in debates about preemptive first strike incentives, arms racing, and architecture attributes that we forget to make the point explicitly to the American voter, that we can do more to protect them and their families from outside attack, while improving deterrence. It is a simple message, but I believe a powerful one. A Department of Defense that does not support an expanded U.S. homeland missile defense system is a Department that is neglecting its number one mission. That is unacceptable and I think the average American, and their Representative, just might agree.

Lt. Gen. Henry “Trey” Obering, III (Ret.)

Lt. Gen. Henry “Trey” Obering, III (Ret.) is former Director of the Missile Defense Agency.

The mission of the Missile Defense Agency (MDA) is to provide an integrated, layered missile defense system to defend the United States, our deployed forces, allies and friends against all ranges of missiles in all phases of flight. This includes long-range, intermediate-range, and short-range missiles in the boost, midcourse and terminal phases of flight.

Why an integrated defense? An integrated defense expands dramatically the defended area or launch area denied for the adversary. For example, by integrating a TPY-2 land-based radar to the Aegis SPY radar, it is possible to reduce the number of ships required to provide defensive coverage of Japan from three to one.

Why a layered defense? Each phase offers unique advantages and disadvantages. Intercepting a missile in its boost phase maximizes the defended area and kills the vehicle before it can deploy decoys. The downside is that it is a very short period of time of vulnerability of the missile. The midcourse phase offers a much longer intercept window, but typically the missile can deploy decoys to confuse the defense. In the terminal phase, decoys usually have been stripped away by the atmosphere, but you have a short amount of time to engage and a relatively small defended area.

How has the missile defense climate changed since 2001? The missile defense climate has changed significantly since the Star Wars ridicule era. The conversation has moved from will it work to how much missile defense capability do we acquire and deploy. This is primarily due to the success of missile defense in its testing programs, the National Reconnaissance Office satellite shootdown in 2008, the performance of “Iron Dome” in Israel and to the more recent successful operational engagement by a THAAD missile in Saudi Arabia. It appears the arguments are no longer “religious” in nature.

Why was it religious to start with? For many years, arms control enthusiasts derided missile defense as “destabilizing” and pushed to rely solely on arms control agreements.

They argued that missile defense was unnecessary due to our strategic deterrence posture and contradictory to mutually assured destruction.

Another historical event which changed the environment: the North Koreans were preparing to launch their Taepo Dong-2 long range missile in 2006 and not revealing its purpose or trajectory. Several senior missile defense critics recommended pre-emptively attacking the launch site. Fortunately, President Bush decided to “stabilize” the situation by relying on MDA’s Ground Based Midcourse Defense system to defend U.S. territory if the missile proved to be a threat. This event clearly pointed out how “destabilizing” an offensive attack can be without having missile defense in the President’s toolbox.

How has the Ukraine War changed this environment? The world saw the utter destruction which can be wrought by ballistic missiles hitting Ukrainian civilian infrastructure. As a result, I have witnessed an upswell of support for missile defense systems in conversations I have with my colleagues. Unlike during the Cold War, where critics painted missile defense in opposition to strategic deterrence, the Ukraine War has brought into focus what happens when you face a non-deterred enemy and need protection.

Russia demonstrated its first combat use of hypersonic weapons and blackmailed the Biden administration by threatening the first use of nuclear weapons.

For two decades, Russia has been investing heavily in a large and diverse nuclear force and China is rapidly expanding its nuclear arsenal, which the Commander of U.S. Strategic Command has described as “breathtaking.”

Warning policymakers of the looming danger ahead, Admiral Richard, recently said, “We are facing a crisis deterrence dynamic right now that we have only seen a few times in our nation’s history... The war in Ukraine and China’s nuclear trajectory—their strategic breakout—demonstrate that we have a deterrence and assurance gap based on the threat of limited nuclear employment.”

To increase the credibility of our deterrent, we must communicate to our adversaries our confidence in the ability to withstand and counter such attacks. This requires a combination of capabilities, both to punish the attacker through offensive retaliation, and to deny his objectives through active defenses.

Missile defenses, including homeland defenses, must be an integral component of strategic deterrence and allied assurance. This applies to deterrence and defense against not only North Korea and Iran, for whom we have sized our homeland missile defense capabilities, but also for the most likely missile threats to our homeland posed by Russia and China.

Both theater and homeland missile defenses undermine the adversary’s confidence that he can achieve his policy goals using force. No missile defense architecture should require a “zero leak” standard. As with any defensive capability, that is impossible and unnecessary. What is required for deterrence is sufficient capability to disrupt the expected success of the adversary’s planed aggression.

Where do we go from here? Space

To deter and defend against missile threats from Russia and China as well as the accelerating missile threats from Iran and North Korea, the United States must develop and deploy space-based capabilities, including space-based kill capabilities and other advanced means to defeat missile attack. Ground-based and sea-based systems, while useful, cannot cost effectively be scaled to meet these advanced threats. A space-based kill capability is the necessary evolution to the layered missile defense architecture.

Moving to space is the only way to defeat a growing quantity and quality of adversary threats. It is the only means to provide an effective boost/ascent phase missile defense capability essential to defeat current and future threats. There is simply no other technically feasible option.

Skeptics have tried to argue that space-based defenses constitute the “militarization of space,” but space is already a highly contested environment in which we face growing threats from Russia, China, and others. There is no law or treaty prohibiting the deployment of missile defense to space.

U.S. space-based missile defenses will contribute to protecting existing and planned U.S. space assets, both military and commercial – making another contribution to strategic stability.

Space-based missile defenses are affordable and achievable. Engineers have made major progress in every technological sector needed for deployment. The technologies for space-based capabilities are like those being employed by Uber, Google, SpaceX, and other private sector enterprises.

Significant missile defense capability from space can be provided by swarms of nanosats utilizing integrated sensing, artificial intelligence, peer to peer networks, and low-cost space launch opportunities pioneered by the commercial sector.

Space Force and Space Command have active space control portfolios that can and should be used synergistically with a space-based missile defense capability.

Moving forward with a space test bed is the modern parallel to the previous period when Congress seeded missile defense programs with the policy commitment to build on the progress of those programs. This permitted President George W. Bush to unshackle the United States from the Cold War Anti-Ballistic Missile Treaty and field the Ground-based Midcourse Defense system to defend against rogue state threats in less than four years. Today’s parallel is to begin now to build the infrastructure needed for deployment, such as sensors and command and control.

Where do we go from here? Directed Energy

Another technology that could be brought to bear in the future is especially suited to space...directed energy.

MDA’s Airborne Laser program, or ABL, successfully shot down both short-range solid and liquid propellant missiles back in 2010 while flying at approximately 35,000 ft. The lesson we learned from that experience to apply to long-range missile defense was that we needed to get out of atmosphere to reduce laser power needed to be lethal and reduce jitter,

which affects laser beam quality and control. By deploying lasers to space, you take advantage of the vacuum and precision control offered by the environment and the satellite platforms. In addition, you can achieve greater ranges through the use of relay satellites, thereby reducing the laser constellation size.

There are several ongoing laser programs which we could eventually deploy to space, with the most promising being the Diode Pumped Alkali Laser System or DPALS at Lawrence Livermore National Labs. We have the technology; we just need the resources and will to develop and deploy such weapons.

Only when the United States adapts to the new and rapidly changing threat environment can we confidently deter our adversaries. This requires a clear-eyed assessment of the dangers, foresight, and a commitment to defend the American people.

Rebecca Heinrichs

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According to U.S. NORTHCOM Commander General Glen VanHerck, “NORTHERN COMMAND and NORAD face the most dynamic and strategically complex environments in our respective histories.”⁶

North Korea continues to test nuclear-capable ballistic missiles. On April 22, 2020, Iran successfully launched its first military satellite *Noor-1* (“light”) into low-earth orbit, and importantly it was the Islamic Revolutionary Guard Corps (IRGC) that took responsibility for the launch.

But those are not the only nations investing in capabilities to hold specific critical infrastructure at risk. Russia and China continue to invest heavily in advanced long-range cruise missiles, hypersonic missiles, and delivery platforms.

Interestingly, General VanHerck has highlighted that Russia’s fielding of long-range cruise missiles has been ongoing throughout its war against Ukraine. (“And as we’ve seen throughout Russia’s unprovoked and irresponsible invasion of Ukraine, Russia has fielded large numbers of long-range cruise missiles, including hypersonic missiles that can cause enormous damage to infrastructure, create strategic effects with conventional warheads. These conventional precision strike capabilities and advanced delivery platforms are designed specifically to hold critical infrastructure in the homeland at risk below the nuclear threshold.”)⁷

And yet there are several major hurdles to improving homeland missile defense that have proven too high for any administration, Republican or Democratic, to keep pace with even the rogue nation threat. I’m going to list just seven.

⁶ Testimony of General Glen VanHerck before the Senate Armed Services Committee Subcommittee on Strategic Forces, May 18, 2022, available at https://www.armed-services.senate.gov/imo/media/doc/22-48_05-18-2022.pdf.

⁷ Ibid.

- 1) The effect of a general confidence in what U.S. planners and policymakers believe would be our adversaries' rational calculations. Or, put more plainly, the belief that our adversaries simply would not be so irrational as to attack the U.S. homeland.
- 2) A belief held without evidence that the United States could unintentionally provoke an adversary to invest in strategic systems if they believe U.S. homeland missile defense is too strong and tempting us to act offensively.
- 3) Military culture that is not persuaded by the deterrent value of denial—even imperfect denial. Operators want shooters, not shields, if they are made to choose within a limited budget.
- 4) Cost—One senior defense official once said to me: The Missile Defense Agency is a \$10 billion agency, and we have to get used to that. Whatever they want to buy has to fit within that \$10 billion. (Recall, the Bush budget was around \$9 billion, and during a more benign threat environment.)
- 5) Poor leadership decisions meant to affect a single program that set back the entire homeland defense mission and that cause a backup that is very hard to recover from. I'll name three. One, when President Obama cut the Multiple Kill Vehicle (MKV) back in 2009 he prevented the United States from having the kind of capability that we now seek from the Next Generation interceptor (NGI). Perhaps that's an oversimplification and puts too much blame in one place when it should be distributed but I think it is mostly true. I remember that fight and many of us worked very hard in Congress and with the MDA to save MKV and could not. John Kirby penned an Op-Ed in 2017, defending the Obama's legacy on missile defense while conceding: "Of course, Obama's missile defense policy wasn't without flaws. Early on in his administration, he reversed President George W. Bush's decision to deploy air defense systems to the Czech Republic and ballistic missile interceptors to Poland, and he presided over significant cuts to MDA's budget. Those cuts continue to have a deleterious effect on critical research and development."⁸ Another example was Trump's cancelation of the Redesigned Kill Vehicle (RKV)—but that wasn't the worst of it; it has been the persistent refusal to go back and try to take what we learned from that and improve the homeland defense capability in the near term, even as we pursue NGI. We should be extending the service life of the Ground-based Missile Defense system, but we should be leveraging technology to improve it right now as well.
- 6) A hesitancy to develop technologies that would give us a space-based kill capability. Many of the arguments about space-based missile defense and against it are playing out in another way—defense of Guam. Some say: the threat is too great; it's too hard to defend against it; building defenses would be provocative,

⁸ John Kirby, "Trump is Wrong: Obama Wasn't Weak on Missile Defense," *CNN*, August 11, 2019, available at <https://www.cnn.com/2017/08/10/opinions/trump-obama-missile-defense-opinion-kirby/index.html>.

etc. Now, there are big differences, too. I'll let Trey handle the piece about what is technologically feasible in space-based missile defense or space-enabled missile defense. But the point is, because something is "hard" is not a reason to eschew it. The space domain is the frontier from which the United States must compete with China and Russia.

- 7) And so, the last one really includes all of these hurdles: it's political leadership. Nothing will advance homeland missile defense without a commitment from the President himself. There are too many ways to slow the program and starve it. There is nothing in law that prohibits us from doing what is necessary to add defenses.

Remaining vulnerable is a choice. We need an administration committed to this mission; indeed, it is imperative.