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**Vulnerability is No Virtue and  
Defense is No Vice:  
The Strategic Benefits of Expanded  
U.S. Homeland Missile Defense**

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NATIONAL INSTITUTE FOR PUBLIC POLICY

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Defense is No Vice:  
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## Preface

The rapid pace of change in the security environment, and the increasingly severe attendant consequences, makes the feverish search for new analytical insights appear all the more justified. “New threats require new thinking” is a tempting paradigm, but, in fact, there is nothing new under the sun. Stripped to its fundamentals, the United States faces great power rivals with obvious and growing ambitions and the means to make life very difficult for the United States and its allies around the world. The question for policymakers is, as always: how should the United States prioritize and pursue its national interests with acceptable levels of cost and risk?

The expanding number and sophistication of missile-based threats to the U.S. homeland is bringing into sharp relief a reality that Americans are reminded of only episodically: that adversaries can strike the U.S. homeland with devastating effect. The attacks of December 7, 1941, and September 11, 2001, should serve as calls to action as Russia and China pursue strategies of coercion backed by missile capabilities against the U.S. homeland, designed to limit the options of U.S. leaders during a crisis or conflict, and potentially deter, degrade, disrupt, or even defeat U.S. efforts to defend allies overseas against their aggression. As part of facing this danger, the United States does not need to reinvent the wheel by spending millions of dollars developing a new concept or framework to guide Department of Defense policy. Instead, it should look to the time-tested principles and insights of the past, gather the lessons learned, and cautiously apply the relevant findings to the emerging security environment.

This *Occasional Paper* is, I believe, a first step in that process. Typically, analysts like to promote their work because they believe they are saying something new, something original that moves the debate forward. Yet,

there is hardly anything truly new in the current debates over nuclear or missile defense policy – most of what passes for “new” is simply a re-packaged variant of something that someone said 50 years earlier, a fact often unknown to the “original” thinker. Therein, I believe, lies the problem. Some of the greatest strategic minds of the 20<sup>th</sup> century, people like Wohlstetter, Kahn, Gray, and Adams, studied the same basic problems the United States faces today, and yet their insights are not widely known, much less applied, in great part because their writings are scattered across dozens of books, articles, and testimonies written decades apart.

I set out on this writing project with the twin goals of compiling the great lessons learned of the past concerning active homeland defense, and applying those insights to the emerging set of coercive threats to the U.S. homeland. To the extent readers find anything “new” in this text that they had not thought of before, my hope is that it will spur them to read the classic texts I have cited throughout the report – if they do, they will be rewarded richly, and U.S. policy will benefit.

To the best of my knowledge, the last major project most similar to this *Occasional Paper's* focus was written over 30 years ago, perhaps not coincidentally, by my mentor and boss Dr. Keith Payne, to whom I owe a great debt for the completion of this report. I also wish to thank Senator Jon Kyl and Ms. Rebecca Heinrichs for the crucial comments they made during a discussion of the report. Also, Hon. Dave Trachtenberg made helpful edits and comments that strengthened the finished product. Additionally, I wish to thank Dr. Rob Soofer, Dr. Peppi DeBiaso, and Mr. Brad Clark for imparting their wisdom on the subject to me, and for serving as a sounding board for my ideas over the years.

I invite readers to keep the following quote from the great Prussian strategist Carl von Clausewitz in mind as they read this report and consider the implications: “If the enemy is to be coerced you must put him in a situation that

is even more unpleasant than the sacrifice you call on him to make. The hardships of that situation must not of course be merely transient – at least not in appearance. Otherwise the enemy would not give in but would wait for things to improve... The worst of all conditions in which a belligerent can find himself is to be utterly defenseless.”<sup>1</sup>

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<sup>1</sup> Carl von Clausewitz, edited and translated by Michael Howard and Peter Paret, *On War* (New York: Alfred A. Knopf, 1993), p. 85.





## Executive Summary

“Defense of the homeland” is the long-standing number one mission of the U.S. Department of Defense. Even more fundamentally, the 2001 *Quadrennial Defense Review* stated that “Defending the Nation from attack is the foundation of strategy.”<sup>2</sup> Yet, since the 1960s when the Soviet Union gained the ability to conduct large nuclear-armed missile attacks on the U.S. homeland, American defense leaders have sought to build a national defense strategy that accounts for the reality of U.S. vulnerability, but still advances U.S. national interests through deterrence threats that would not be suicidal to carry out. Historians and strategists may debate how successful U.S. leaders were in building this strategy during the Cold War, but today’s threat environment is considerably more complex, especially given the growing number and sophistication of the missile threats to the U.S. homeland. The United States faces a stark choice as it is confronted with threats of coercive strikes from Russia and China, and the growing North Korean nuclear arsenal: is unmitigated homeland vulnerability a virtue for deterrence stability? Or is it a vice that might hasten deterrence failure?

This *Occasional Paper* challenges the still-dominant Cold War view that U.S. homeland vulnerability is both fundamentally an unchangeable reality and, on balance, a net positive for deterrence that should be preserved. Criticizing U.S. policy in this regard is not new, as U.S. defense strategist Don Brennan wrote in 1969: “From the mid-1950s to the mid-1960s, the strategic postures of the superpowers were dominated by the logic that, since we

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<sup>2</sup> U.S. Department of Defense, *Quadrennial Defense Review Report* (Washington, D.C.: Department of Defense, September 30, 2001), p. 14, available at <https://history.defense.gov/Portals/70/Documents/quadrennial/QDR2001.pdf?ver=AFts7axkH2zWUHncRd8yUg%3d%3d>.

could not defend, we had to deter. This position, for which there was originally ample justification, now seems to be interpreted in some minds – chiefly certain American ones – to mean that, since we must deter, we cannot defend. This should count as the non sequitur of the decade.”<sup>3</sup> Regrettably, the position that deterrence depends on being defenseless remains embedded deeply in American strategic thought.

This alone would be a manageable concern if states like Russia and China shared the U.S. view; yet, not only does it appear they do not share this view, they are in fact actively building strategies of coercion, with a growing array of missiles as the foundation, that are tailored to exploit the vulnerability of the U.S. homeland. Their apparent theories of politico-military victory depend on presenting a credible threat to critical targets in the U.S. homeland, either through the coercive threat of missile strikes to deter U.S. intervention overseas, or through the employment of missile strikes to disrupt, delay, or deny U.S. force projection. It is no exaggeration to state that any threat to U.S. force projection from the homeland is a threat to U.S. defense strategy writ large. Given the distance between the United States and its allies overseas, and the time it takes to mobilize military forces within the U.S. homeland, an adversary’s coercive conventional and nuclear threats could shape U.S. will, and coercive strikes could enormously affect U.S. freedom of action in coming to the defense of allies and partners.

The United States has sought to deter regional aggression, and thus the threat of escalation to the homeland, by pursuing more flexible and discriminant deterrent options, like the supplemental nuclear capabilities advanced by the 2018 *Nuclear Posture Review* and conventional hypersonic weapons. These capabilities are

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<sup>3</sup> D. G. Brennan, “The Case for Missile Defense,” *Foreign Affairs*, Vol. 47, No. 3 (April 1969), p. 442.

likely necessary, but not sufficient for deterrence purposes. Russia and China are building ballistic, cruise, and hypersonic missiles that could strike the U.S. homeland, despite knowing they face the possibility of a devastating U.S. response. This indicates that they may already believe that the potential benefits of wielding conventional and nuclear threats or conducting coercive strikes against the United States are sufficiently large, and likely, as to outweigh the potential risks of a U.S. response. In short, the United States might face in the near future a Russian, Chinese, North Korean, or some other unforeseen state leadership that either believes it can successfully deter the United States because it believes Washington lacks the political will to respond to targeted strikes on the U.S. homeland, or because the expected U.S. response to strikes on its homeland is a price it is willing to pay for regional gains.

It is at this point that the U.S. reliance on *offensive* conventional and nuclear threats to deter strikes on the homeland becomes open to question. If an adversary struck the U.S. homeland with a measured number of nuclear weapons for the purposes of coercion, for example, the United States would design its response to be devastating and outweigh any benefit the adversary may have expected – but that is cold comfort to the victims of the initial attack or to any further attacks by opponents. The promise to avenge is indeed powerful, but it cannot stop an attack as it occurs, and it certainly cannot guarantee that a conflict will end with the U.S. response. In short, *the reason deterrence failed originally may be the same reason it is unlikely to be re-established through a limited U.S. response.* If confirmation bias and groupthink are strongly rooted in an adversary's leadership's decision-making dynamic, then the likelihood that U.S. nuclear responses – no matter how significant or well-targeted – will successfully re-establish deterrence at

acceptable costs to the United States may be distressingly low.<sup>4</sup>

In other words, the potential consequences of deterrence failure based on offensive threats alone should compel U.S. policymakers to look elsewhere to strengthen deterrence, namely, via deterrence threats of denying the adversary its objective. Adversaries, simply stated, should not only fear the consequences of attacking the United States, but also the possibility that their attack will fail in its objective *and* provoke a devastating U.S. response – the worst of both worlds. U.S. officials should therefore consider expanding the mission set assigned to homeland missile defenses, opening up an entirely new set of fears for the adversary attack planner and leadership.

This *Occasional Paper* recommends a U.S. homeland missile defense system designed to deter, and if necessary, defeat coercive attacks from Russia and China while staying ahead of the rogue state threat and protecting against accidental and unauthorized launches. Such a system would be designed to defeat the kinds of coercive attacks against the U.S. homeland that Russia or China might contemplate in pursuit of their hegemonic goals as a means of deterring, disrupting, or delaying U.S. intervention in defense of allies overseas. This option would be designed to both defeat a core tenet of Russia's and China's military theories of victory against the United States and defend America's preferred strategy of basing many of its military forces in the homeland to be dispatched abroad when needed.

A defense against "coercive" attacks is meant to convey the U.S. intent to defeat attacks that are restricted in their size and scope as envisioned by Russian and Chinese

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<sup>4</sup> For additional commentary on this point, see, Colin S. Gray, "Presidential Directive 59: Flawed but Useful," *Parameters*, Vol. 11, No. 1 (1981), pp. 29-37.; and, Colin S. Gray, "Defense, War-Fighting and Deterrence," *Naval War College Review*, Vol. 35, No. 4 (1982), pp. 38-43.

defense officials, to discourage U.S. actions to combat their regional aggression overseas. U.S. intelligence estimates would necessarily inform missile defense architecture designers, especially with – to the extent available – analysis on what Russia and China may target in coercive attacks, and with how many, and what types of, missiles. Since deterrence requirements can, and likely will, shift, there is no precise “right” number of interceptors or missiles to be defeated – only better or worse-informed estimates of what might be needed to allow deterrence to continue to function.

If the United States adapted its homeland missile defense policy to this emerging reality, it may reap a number of benefits for itself and its allies. For example, a U.S. homeland missile defense system that is designed to defeat coercive attacks could greatly improve deterrence by raising the threshold or “entry price” for attacking the U.S. homeland, while still holding in reserve the deterrent threat of a devastating U.S. offensive response. In this sense, the deterrent threat of denial is additive to the deterrent threat of punishment – an attack could fail *and* be too costly. The presence of an expanded U.S. homeland missile defense system denies the adversary his preferred coercive attack plan – it raises risks, increases costs, and adds uncertainty. U.S. homeland missile defenses capable of defeating coercive level attacks could force the adversary to consider the need to launch a comparatively larger attack – an attack size that then is more likely to be deterred by U.S. strategic response capabilities. Thus, given the potential consequences of miscalculation, an adversary’s leadership may require a high confidence assessment that its proposed coercive attack on the United States will work as planned, so the uncertainties, risks, and tradeoffs produced by U.S. homeland missile defenses may prove decisive for deterrence.

Another important benefit of an expanded homeland missile defense system is that it can limit damage in a safer

manner than offensive strikes alone. That is, an expanded homeland missile defense system likely poses far less escalation risk when employed during a conflict and can protect critical infrastructure – thus allowing the United States to maintain its military readiness. Given the collocation of critical infrastructure and populous urban centers in the United States (ports, railyards, power plants, military bases, etc.), even an imperfect defense against conventional strikes – and in some cases, even nuclear strikes – could potentially save many lives and limit damage to recoverable levels.

Additionally, an expanded homeland missile defense system will grant great credibility to the Department of Defense’s number one stated mission: protecting the U.S. homeland. By protecting critical potential targets at home, the United States can project power abroad. This benefit can be summarized as providing the U.S. leadership “freedom of action.” First, such a system can allow U.S. leaders to consider new options that may not be brought up when the homeland is vulnerable. Second, such a system could reduce the risk of particular options to acceptable levels that U.S. leaders may have considered too risky with a highly vulnerable homeland. An expanded set of options for the U.S. leadership, newly available options, and those with reduced risk, open up new avenues for defending U.S. and allied national interests in ways that may be more likely to succeed than before.

As another benefit, if deterrence is in danger of failing because an adversary perceives the U.S. leadership is lacking political will, the addition of an expanded U.S. homeland missile defense system could significantly contribute to reversing, or at least diminishing, that belief. Given the inherent credibility that the United States would employ missile defenses to defend its homeland, the adversary will likely attribute *a greater* level of resolve to U.S. leaders than otherwise would be the case. This may, in

turn, contribute to deterring an attack on the homeland if the adversary perceives the increased credibility of a potential U.S. initiation of force, or the increased credibility of an effective U.S. response to an adversary's initiation of force.

In addition, with an expanded homeland missile defense system in place, U.S. leaders may be seen as more able to take risks in defense of allies and partners – even nuclear risks. Such a decision will certainly not be taken lightly, even in the presence of significantly effective homeland missile defenses, but such a system may be the crucial factor that lowers the perceived risks to acceptable levels according to U.S. leaders. It is in the U.S. national interests to reduce the chance that allies perceive the United States as a less-than-credible defense partner by expanding its homeland missile defenses, increasing the U.S. ability to successfully resist coercion, and reducing the risks of assisting allies.

A number of other potential benefits of an expanded U.S. homeland missile defense system are worth mentioning here as well, including: the potential to “buy time” for mobile command and control assets to disperse during an unexpected attack; improved options for crisis stability with perhaps less perceived need for preemptive strikes; a way to limit damage or escalation after inadvertently crossing an adversary's “red line;” a strengthened technological base for further missile defense “breakthrough” research; and, a hedge against bluffers, lunatics, fanatics, mishaps, and rapid military shifts.

Critics will undoubtedly respond that even if these benefits of an expanded U.S. homeland missile defense accrue, the potential dangers outweigh the benefits. For instance, one Cold War-era criticism of improved U.S. homeland missile defenses is that it could produce two separate dangers, perhaps simultaneously: first, the presence of very capable U.S. homeland missile defenses



will cause first strike incentives among U.S. leaders because they believe the defenses can negate the uncoordinated and diminished adversary response to a U.S. first strike within acceptable levels of risk and damage. Second, the adversary will perceive an increased risk of a massive U.S. first strike because the United States is modernizing its nuclear arsenal, in addition to its significant conventional precision-strike capabilities, to the point where even imperfect defenses could negate its response – thus inducing first strike incentives in the adversary’s leadership during a crisis.

Both criticisms falter on the fact that such concerns sound plausible in theory, but in practice, a whole host of factors make these concerns likely to be unfounded. On the concern that improved missile defense might make U.S. leaders more cavalier in contemplating a first strike, this possibility appears remote indeed. In reality, an expanded U.S. homeland missile defense system will likely dampen any perceived need for preemption because intercepting adversary missiles after they are confirmed to have been launched presents a plausible alternative to preemptive strikes during a crisis. Additional factors also make increased preemptive incentives unlikely, especially when one considers the operational risks (multiple U.S. weapons failures, more than expected surviving adversary weapons, unexpectedly effective adversary tactics, etc.) and the political impediments (lack of domestic support, a Congress critical of building a first strike-capable force, lack of allied support). On the concern that improved U.S. homeland missile defenses might incentivize an adversary’s first strike against the United States, this possibility also seems far-fetched. Russia and China have historically lived under the supposed threat of a U.S. first strike without resorting to first strikes themselves – choosing instead to pursue arms control discussions to limit U.S. capabilities, as Russia has done on occasion, or choosing the path of military

competition (not confrontation), as Russia and China have done.

Another criticism of the U.S. pursuit of expanded homeland missile defenses is the claim that they will never meet the “Nitze criterion.” That is, homeland missile defenses will not be “cost effective at the margin,” always requiring the United States to spend more money to defeat an adversary’s missile than the adversary spends to build and launch its missile. While cost is undoubtedly a major factor in judging a military system’s worth, it should not be elevated to having a veto over a decision to build expanded U.S. homeland missile defenses. Indeed, it is difficult to imagine even one major U.S. military weapon system that could pass the “cost-effective at the margin” criterion, nearly every military weapon can theoretically be defeated by a cheaper countermeasure – thus exposing the illogic of elevating this particular criterion as uniquely applicable to homeland missile defense. Additional unstated assumptions behind the “cost effective at the margin” criterion further undermine its constant invocation, such as the assumption that the adversary knows the “true” cost-exchange ratio, or, even more fundamentally, that the adversary can (has the resources) and will (has the intention to) counteract U.S. homeland missile defenses.

The Nitze criterion appears even less relevant when applied to current real world conditions. For example, it seems quite likely that it costs the United States more to intercept a North Korean ICBM than it costs North Korea to build and launch its ICBM, but will residents of Los Angeles, or their representatives, really complain about that fact if the United States successfully intercepts the ICBM mid-flight? Obviously, no. This observation instead points to a more useful definition of “cost effective” which bases a missile defense system’s value not on how much it costs to potentially defeat it, but on the value of what it defends – be it a city, a port, an air base, or command and control nodes.

That is, a U.S. homeland missile defense system's value lies in how it contributes to U.S. defense priorities. Given the oft-stated number one mission of the Department of Defense is "defense of the homeland," this top priority should provide the necessary context for policymakers deciding how much to allocate to such defenses.

The third and perhaps most common criticism of expanding U.S. homeland missile defense is that doing so might cause an "arms race." While seemingly intuitive on its face, this criticism greatly lacks evidence historically and ignores the varied host of reasons why states typically procure weapons. Based on Cold War and post-Cold War experiences, there is little historical evidence that there is a mechanistic "action-reaction" dynamic at play relating to missile defense. For example, even after the United States gave up its only homeland missile defense system in the mid-1970s, far from inducing Soviet restraint, the Soviet Union greatly increased the rate of its intercontinental missile production. Additionally, the "action-reaction" arms race theory predicts that as the United States built its homeland missile defenses in the early 2000s after withdrawing from the Anti-Ballistic Missile Treaty, Russia should have correspondingly built up its ICBM forces – but no such buildup took place.

Critics will likely respond that even if a Russian reaction did not take place, then perhaps China's missile buildup might be attributed to the U.S. pursuit of improved homeland missile defenses. This, however, is a classic case of confusing correlation and causation. Proponents of U.S. homeland missile defense do not deny that China likely has and will react to U.S. missile defense capabilities at some level, but the evidence that U.S. missile defenses are the causative, or even a primary, motivating factor for changes in China's nuclear arsenal grows weaker every year. Given the rapid shift in policy and the sheer magnitude of China's preferred force size, plus the relative projected consistency

in U.S. missile defense capabilities, U.S. homeland missile defenses do not appear to be a major factor in China's nuclear expansion. If they were a major factor, one would expect to see, at most, a gradual growth in China's nuclear arsenal that matches expected U.S. advances – not the projected sudden and very rapid growth.

In short, there is nothing either automatic or predictable about what weapons a state develops, why, and when. This dynamic indicates that real world defense acquisition is driven by far more factors than simply reacting to what the United States is doing. Russia, China, and North Korea all have their own domestically-driven considerations (bureaucratic power struggles, funding battles, budget limits, technical capability), ideological considerations (how particular weapons represent the state's status on the world stage, contribution to grand strategy, a weapon's potential propaganda value), and operational considerations (geographic limitations, contribution to short-term military goals, synchronization with other defense programs, infrastructure delays). The fact that Russia and China developed ICBM-centric nuclear arsenals while the United States developed an SLBM-centric nuclear arsenal, and the long-standing difference in overall force size levels, is indication enough that there is no mechanistic relationship between U.S. defense priorities and those of other states.

In conclusion, the threats to the U.S. homeland have inarguably expanded since the Cold War, so the question for U.S. policymakers is: should U.S. homeland missile defense policy shift in response? The nature of the emerging trilateral deterrence problem with Russia and China, and growing rogue state threats, pose new threats to the U.S. homeland, and ultimately to U.S. defense and deterrence strategies in support of allies and partners abroad. There is no greater U.S. policy goal than deterring adversary strikes, especially nuclear strikes, on the U.S. homeland. A more capable and expanded U.S. homeland missile defense

system can strengthen deterrence by denying the adversary confidence that his attack will be successful and raising the threshold for escalation and war. The United States can build a firmer foundation for its security and that of its allies, not based on unmitigated U.S. vulnerability, but on the ability both to limit damage and deter attacks on the center of U.S. power: the homeland.

## Introduction

*All history has proved the peril of being dependent upon a foreign State for home defence instead of upon one's own right arm... I dread the day when the means of threatening the heart of the British Empire should pass into the hands of the present rulers of Germany.*<sup>5</sup>

~ Winston S. Churchill, 1934

The United States appears to be entering a new era of increased conventional and nuclear missile threats to its homeland in the context of an emerging trilateral deterrence problem with Russia and China. While Washington hopes to sustain the existing U.S.-led liberal world order, Moscow and Beijing, among others, are strengthening their strategies of coercion via threats of missile employment against the U.S. homeland to either deter the United States from aiding its allies in an overseas regional conflict, or, if necessary, delaying and defeating U.S. efforts to intervene against regional aggression. Cold War orthodoxy holds that Russia's and China's increased capability to threaten the U.S. homeland with coercive missile strikes should not be a problem, and the potential cure, reducing U.S. vulnerability through active defenses, is worse than the disease because it could prompt arms racing and "destabilize" deterrence by prompting opponents' fears of preemption. It is debatable whether this sentiment ever reflected reality during the Cold War, but it certainly warrants reinvestigation now that the security environment, missile defense technology, and the stakes have changed.

This *Occasional Paper* examines the possibility and benefits of a policy shift that expands the roles of U.S. homeland integrated air and missile defense (IAMD) to

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<sup>5</sup> Winston S. Churchill, speech to the House of Commons, March 1934, as quoted in, Andrew Roberts, *Churchill: Walking with Destiny* (New York: Viking, 2018), p. 377.

include protection against coercive attacks by Russia and China - a step beyond the current focus on ballistic missile defense (BMD) against rogue state actors and, to a lesser degree, cruise missile defense. Such a policy shift would mark a major break from Cold War and even post-Cold War official U.S. policy, but the foundational idea that active defenses can strengthen deterrence and potentially improve conflict outcomes boasts a long line of bipartisan support among U.S. defense officials and strategists. In short, the idea of adding potentially credible deterrence by denial threats is neither new nor unique in the world, as Russia and China improve their own homeland missile defenses, but the prospect should garner new interest as missile threats to the U.S. homeland grow more diverse and severe.

First, this *Occasional Paper* provides an overview of the threat environment, with a special focus on the threat of coercive strikes against the U.S. homeland, and a description of why an adversary may pursue coercive military strategies based on the threat or employment of targeted missile strikes. Next, it describes why an adversary may wish to employ coercive strikes against the U.S. homeland and the potential benefits and risks associated with current U.S. deterrence policies and capabilities, i.e., threats of punishment. The following section then describes how threats of denial, through an expanded U.S. homeland IAMD system against coercive Russian and Chinese threats could contribute to U.S. deterrence goals and help deny an adversary's theory of victory. Finally, this *Occasional Paper* addresses potential counterarguments and recommends IAMD force structure principles that could strengthen the deterrent effect against coercive strikes on the U.S. homeland.

## **Threat Environment: Adversary Capabilities and Strategies**

U.S. defense officials over the past 10 years, both military and civilian, have steadily increased the severity and frequency of their warnings that the U.S. homeland faces a growing set of missile-based threats. For instance, in a 2012 report that speculated on the security environment in 2030, the National Intelligence Council stated, “The threat these [standoff] missiles pose to critical infrastructures (economic, energy, political, etc.) as well as to military forces will increase as their ability to be precisely targeted or carry weapons of mass destruction increases.”<sup>6</sup> Four years later, the U.S. Joint Chiefs of Staff published a similar forward-looking report, but included starker language, “In 2035, the United States will confront an increasing number of state and non-state actors with the will and capabilities to threaten targets within the homeland and U.S. citizens with the ultimate intention to coerce.”<sup>7</sup>

Today, such warnings are becoming commonplace and the increasing danger to the U.S. homeland continues. U.S. Northern Command (USNORTHCOM) is especially vocal about not only the growing set of adversary capabilities that threaten the U.S. homeland, but also how opponents may use those capabilities to advance their expansionist international political goals: “They [opponents] are preparing for potential crisis or conflict with the intent to limit decision space for our senior leaders by holding

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<sup>6</sup> National Intelligence Council, *Global Trends 2030: Alternative Worlds* (Washington, D.C.: Director of National Intelligence, 2012), p. 69, available at

[https://www.dni.gov/files/documents/GlobalTrends\\_2030.pdf](https://www.dni.gov/files/documents/GlobalTrends_2030.pdf).

<sup>7</sup> U.S. Joint Chiefs of Staff, *Joint Operating Environment 2035* (Washington, D.C.: Joint Chiefs of Staff, July 14, 2016), p. 24, available at [https://www.jcs.mil/Portals/36/Documents/Doctrine/concepts/joe\\_2035\\_july16.pdf?ver=2017-12-28-162059-917](https://www.jcs.mil/Portals/36/Documents/Doctrine/concepts/joe_2035_july16.pdf?ver=2017-12-28-162059-917).



national critical infrastructure at risk, disrupting and delaying our ability to project power from the homeland, and undermining our will to intervene in a regional crisis.”<sup>8</sup>

Russia appears to be placing increased emphasis on its ability to threaten the U.S. homeland with conventional or nuclear strikes from a variety of missile types and trajectories. For instance, Russia has fielded or is pursuing the Avangard intercontinental-range hypersonic glide vehicle (HGV), Tsirkon hypersonic missile, Kinzhal air-launched ballistic missile, the Skyfall nuclear-powered cruise missile, and the Sarmat heavy intercontinental ballistic missile (ICBM) – along with a range of sea-launched cruise missiles.<sup>9</sup> USNORTHCOM Commander Gen. Glen VanHerck has testified that these capabilities support a very specific mission: “In crisis or conflict, we should expect Russia to employ its broad range of advanced capabilities – nonkinetic, conventional, and nuclear – to threaten our critical infrastructure in an attempt to limit our ability to project forces and to attempt to compel de-escalation.”<sup>10</sup> He

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<sup>8</sup> Glen D. VanHerck, *Statement of General Glen D. VanHerck, United States Air Force, Commander, United States Northern Command, and North American Aerospace Defense Command* (Washington, D.C.: United States Senate Armed Services Committee, March 24, 2022), p. 3, available at [https://www.armed-services.senate.gov/imo/media/doc/USNORTHCOM%20and%20NORAD%202022%20Posture%20Statement%20FINAL%20\(SASC\).pdf](https://www.armed-services.senate.gov/imo/media/doc/USNORTHCOM%20and%20NORAD%202022%20Posture%20Statement%20FINAL%20(SASC).pdf).

<sup>9</sup> Charles A. Richard, *Statement of Charles A. Richard, Commander, United States Strategic Command* (Washington, D.C.: House Armed Services Committee, March 1, 2022), pp. 8-9, available at <https://www.stratcom.mil/Portals/8/Documents/2022%20USSTRATCOM%20Posture%20Statement.pdf?ver=CUIoOCLyos9xe9C9I0XjMQ%3D%3D>.

<sup>10</sup> Glen D. VanHerck, *Statement of General Glen D. VanHerck, United States Air Force, Commander, United States Northern Command, and North American Aerospace Defense Command* (Washington, D.C.: United States House Armed Services Committee, April 14, 2021), p. 3, available at <https://www.northcom.mil/Portals/28/USNORTHCOM%20and%20>

also testified that Russian leaders believe “capabilities below the nuclear threshold” will “constrain U.S. options in an escalating crisis.”<sup>11</sup>

China, for its part, also appears to be increasing its missile strike options against the U.S. homeland – from the traditional cruise and ballistic missiles to the exotic intercontinental-range hypersonic glide vehicle (HGV) “fractional orbital bombardment” system tested in 2021.<sup>12</sup> From the perspective of Commander of U.S. Strategic Command (USSTRATCOM), ADM Charles Richard, China’s missile strike capabilities and its growing number of nuclear warheads “... points toward an emboldened PRC that possesses the capability to employ any coercive nuclear strategy today.”<sup>13</sup> Likewise, Gen. VanHerck recently testified:

... China has begun to develop new capabilities to hold our homeland at risk in multiple domains in an attempt to complicate our decision making and to disrupt, delay, and degrade force flow in crisis and destroy our will in conflict... Later this decade, China seeks to field its Type 095 guided missile submarine, which will feature improved quieting technologies and a probable land-attack cruise missile capability. While China’s intent for employing its long-range conventional strike capabilities is not fully known, these weapons will offer Beijing the option of deploying strike platforms within range of our critical infrastructure during a conflict, adding a new

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NORAD%20Posture%20Statement%2014%20Apr%2021.pdf?ver=3wi7sa3VRMCpXftYTnPPrg%3d%3d.

<sup>11</sup> VanHerck, *Statement of General Glen D. VanHerck*, March 24, 2022, op. cit., p. 6.

<sup>12</sup> Richard, *Statement of Charles A. Richard*, March 1, 2022, op. cit., pp. 5-6.

<sup>13</sup> *Ibid.*, p. 5.

layer of complication to our leaders' crisis decision-making.<sup>14</sup>

In earlier testimony Gen. VanHerck specifically mentions China's pursuit of "a new family of long-range precision-strike weapons capable of targeting key logistical nodes on our West Coast that support U.S. mobilization and sustainment."<sup>15</sup> If China is successful in its efforts to build a military naval base on Africa's West coast, then its burgeoning naval-based cruise missile capabilities could conceivably threaten both America's East and West coasts.<sup>16</sup>

Beyond the near-peer threats of Russia and China, North Korea and Iran continue to develop their long-range missile programs. Recent official U.S. assessments of North Korea indicate that its leader Kim Jong Un is committed to improving its intercontinental strike capabilities and developing multiple independently targetable reentry vehicles (MIRVs).<sup>17</sup> Iran is also "developing and testing ICBM-relevant technologies through its theater missiles and

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<sup>14</sup> VanHerck, *Statement of General Glen D. VanHerck*, March 24, 2022, op. cit., pp. 7-8.

<sup>15</sup> VanHerck, *Statement of General Glen D. VanHerck*, April 14, 2021, op. cit., p. 5.

<sup>16</sup> David Vergun, "General Says China is Seeking a Naval Base in West Africa," *Defense.gov*, March 17, 2022, available at <https://www.defense.gov/News/News-Stories/Article/Article/2969935/general-says-china-is-seeking-a-naval-base-in-west-africa/>.

<sup>17</sup> On MIRVs, see, Office of the Director of National Intelligence, *Annual Threat Assessment of the U.S. Intelligence Community* (Washington, D.C.: DNI, February 2022), p. 16, available at <https://www.dni.gov/files/ODNI/documents/assessments/ATA-2022-Unclassified-Report.pdf>.; and, on North Korea's ICBM developments, see, VanHerck, *Statement of General Glen D. VanHerck, United States Air Force, Commander, United States Northern Command, and North American Aerospace Defense Command*, March 24, 2022, op. cit., p. 6.

space launch platforms.”<sup>18</sup> In addition to North Korea and Iran, the United States may, in the future, face an as yet unknown state with intercontinental-range missiles, perhaps one that receives technical aid from North Korea and Iran or one that develops the technology indigenously.

In summary, revisionist states are increasing the number and sophistication of their missiles that can reach the U.S. homeland in support of their coercive strategies to deter the United States and achieve their regional ambitions. The United States can no longer focus on a single adversary with the capability to strike the homeland, as it did during much of the Cold War. Instead, multiple actors now have coercive military strategies designed to deter or defeat the United States below and above the nuclear threshold, and the capabilities necessary to support those strategies. Gen. VanHerck provides an excellent summary of the implications for the United States, and its preferred defense strategy:

If our competitors believe that they can destroy our will or ability to surge forces from the United States because of a perceived inability to defeat their attacks, they will be emboldened to aggressively pursue their strategic interests. In essence, this situation creates an opportunistic gap between our nuclear strategic deterrent and conventional deterrent capability for potential adversaries to exploit. This opportunity creates intent and, perversely, an incentive for adversary action. Put more boldly, a strategy that assumes

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<sup>18</sup> VanHerck, *Statement of General Glen D. VanHerck*, March 24, 2022, op. cit., p. 6.

unfettered power projection, given the current strategic environment, is a *losing strategy*.<sup>19</sup>

Given the potential stakes involved in a future conflict, and the growing number and sophistication of adversary missiles that can threaten the U.S. homeland, and thus threaten America's fundamental defense strategy, U.S. defense officials have suggested several remedial steps to strengthen deterrence.

## Current Efforts Toward Closing Deterrence Gaps

The 2018 *Nuclear Posture Review* (NPR) identified two supplements to the U.S. nuclear force posture, explicitly designed to "counter" any perceived and exploitable "gap" in U.S. regional nuclear capabilities. First, the NPR recommended the development and deployment of a low-yield submarine-launched ballistic missile warhead, what became the W76-2, intended to be capable of penetrating adversary defenses.<sup>20</sup> Second, as a complementary solution to this potential deterrence "gap," the NPR recommended

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<sup>19</sup> Emphasis in original. Glen D. VanHerck, "Deter in Competition, Deescalate in Crisis, and Defeat in Conflict," *Joint Forces Quarterly*, Vol. 101 (2<sup>nd</sup> Quarter 2021), p. 6, available at [https://ndupress.ndu.edu/Portals/68/Documents/jfq/jfq-101/jfq-101\\_4-10\\_VanHerck.pdf?ver=vVI2vBwL4HZBV9Sh91ar4w%3d%3d](https://ndupress.ndu.edu/Portals/68/Documents/jfq/jfq-101/jfq-101_4-10_VanHerck.pdf?ver=vVI2vBwL4HZBV9Sh91ar4w%3d%3d).

<sup>20</sup> U.S. Department of Defense, *Nuclear Posture Review* (Washington, D.C.: Department of Defense, 2018), p. 55, available at <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF>.; and, John Rood, "Statement on the Fielding of the W76-2 Low-Yield Submarine Launched Ballistic Missile Warhead," *Defense.gov*, February 4, 2020, available at <https://www.defense.gov/News/Releases/Release/Article/2073532/statement-on-the-fielding-of-the-w76-2-low-yield-submarine-launched-ballistic-m/>.

the development and deployment of a nuclear-armed sea-launched cruise missile (SLCM-N) to provide a regional-based capability. ADM Richard recently testified in support of SLCM-N stating, “And based on what we’re learning from the Ukraine crisis, [there is] the deterrence and assurance gap, [and it is] important not to leave that out. A non-ballistic, low yield, non-treaty accountable system that is available without visible generation would be very valuable.”<sup>21</sup>

In addition to the supplemental capabilities, the 2018 NPR identified the process of “tailoring” deterrence as essential to improving the chances it would function effectively and send the appropriate deterrence message regarding the supplemental capabilities to the target audiences. The NPR states, “The requirements for effective deterrence vary given the need to address the unique perceptions, goals, interests, strengths, strategies, and vulnerabilities of different potential adversaries... Tailored deterrence strategies are designed to communicate the costs of aggression to potential adversaries, taking into consideration how they uniquely calculate costs and risks. This calls for a diverse range and mix of U.S. deterrence options, now and into the future, to ensure strategic stability.”<sup>22</sup> In short, it is not enough to simply add more or better capabilities to the U.S. nuclear force to strengthen deterrence, those capabilities must correspond to specific adversary characteristics in ways that are likely to have the effect of strengthening deterrence.

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<sup>21</sup> Charles A. Richard, “Senate Armed Services Committee Hearing: Nuclear Weapons Council,” *STRATCOM.mil*, May 4, 2022, available at <https://www.stratcom.mil/Media/Speeches/Article/3022885/senate-armed-services-committee-hearing-nuclear-weapons-council/>.

<sup>22</sup> U.S. Department of Defense, *Nuclear Posture Review*, op. cit., p. 26.

## **Nuclear Counterforce Capabilities for Deterrence: Necessary but not Sufficient**

Given this context, U.S. policymakers face the question: Are the supplemental capabilities identified in the 2018 NPR, the policy of tailoring deterrence, and the ongoing modernization of the nuclear triad sufficient in the face of more complex and more capable threats against the U.S. homeland? Or, bluntly stated, is deterrence by threats of a U.S. conventional or nuclear response, in the face of severe adversary counterthreats, sufficient to defend U.S. vital national interests around the world, both before and after an adversary's strike on the U.S. homeland?

The supplemental capabilities identified in the 2018 NPR certainly appear to be logical and potentially helpful responses to adversaries' coercive nuclear strategies – but the question remains, is relying on punitive deterrence threats without defenses sufficient? What can be done, since adversaries are highly motivated and so clearly investing heavily in missiles that can strike the U.S. homeland *as if they had already accounted for the predicted U.S. reaction to such a strike*? In other words, what role might the U.S. ability to limit damage to itself play in deterring the worst-case scenario: missile strikes against the U.S. homeland?

The *Report on the Nuclear Employment Strategy of the United States – 2020* states that, “Should deterrence fail, the United States will strive to end any conflict at the lowest level of damage possible and on the best achievable terms for the United States, allies, and partners. U.S. nuclear weapons employment guidance directs minimizing civilian damage to the extent possible consistent with achieving U.S. objectives and restoring deterrence.”<sup>23</sup> Current U.S. damage

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<sup>23</sup> U.S. Department of Defense, *Report on the Nuclear Employment Strategy of the United States – 2020* (Washington, D.C.: Department of Defense,

limitation capabilities at the strategic level are largely limited to the potential for offensive strikes employing nuclear weapons – the ability to inflict destruction on an adversary’s forces to prevent further destruction to the United States. The current Ground-based Midcourse Defense (GMD) missile defense system was designed to defeat a rogue state threat, not one from Russia or China.

The concept of deterring conflict, or limiting escalation if conflict occurs – and thus limiting damage to the United States – through the capability for limited strikes against the adversary has a long line of bipartisan support among U.S. defense officials. However, multiple U.S. Secretaries of Defense have stated that there are no guarantees that U.S. attempts to limit damage to itself and restore deterrence through limited nuclear strikes on the adversary will work, and some have even expressed outright skepticism at the prospect.<sup>24</sup> Indeed, nobody can knowingly predict how the process might end, whether through conciliation, arbitration, or general nuclear war. In the absence of

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2020), p. 7, available at [https://www.esd.whs.mil/Portals/54/Documents/FOID/Reading%20Room/NCB/21-F-0591\\_2020\\_Report\\_of\\_the\\_Nuclear\\_Employment\\_Strategy\\_of\\_the\\_Unit ed\\_States.pdf](https://www.esd.whs.mil/Portals/54/Documents/FOID/Reading%20Room/NCB/21-F-0591_2020_Report_of_the_Nuclear_Employment_Strategy_of_the_Unit ed_States.pdf).

<sup>24</sup> See, for instance, James R. Schlesinger, *Annual Defense Department Report, FY 1976 and FY 1977* (Washington, D.C.: Department of Defense, February 5, 1975), pp. II-6-II-7, available at [https://history.defense.gov/Portals/70/Documents/annual\\_reports/1976-77\\_DoD\\_AR.pdf?ver=5Yhnnc5giX2RjfQtSjD-Vw%3d%3d](https://history.defense.gov/Portals/70/Documents/annual_reports/1976-77_DoD_AR.pdf?ver=5Yhnnc5giX2RjfQtSjD-Vw%3d%3d).; and, Harold Brown, *Department of Defense Annual Report, Fiscal Year 1982* (Washington, D.C.: Department of Defense, January 19, 1981), p. 40, available at [https://history.defense.gov/Portals/70/Documents/annual\\_reports/1982\\_DoD\\_AR.pdf?ver=2014-06-24-150904-113](https://history.defense.gov/Portals/70/Documents/annual_reports/1982_DoD_AR.pdf?ver=2014-06-24-150904-113).; and, Caspar W. Weinberger, *Report of the Secretary of Defense Caspar W. Weinberger to the Congress* (Washington, D.C.: Department of Defense, February 4, 1985), p. 46, available at [https://history.defense.gov/Portals/70/Documents/annual\\_reports/1986\\_DOD\\_AR.pdf?ver=2016-02-25-102404-647](https://history.defense.gov/Portals/70/Documents/annual_reports/1986_DOD_AR.pdf?ver=2016-02-25-102404-647).



homeland defenses, damage limitation at the strategic level ultimately rests on mutual targeting restraint, a tacit agreement between adversaries in the midst of a conflict. Mutual targeting restraint during nuclear war is possible, yet senior U.S. officials are loathe to express confidence – much less certainty – that will be the outcome.<sup>25</sup>

It is at this point that the U.S. reliance on *offensive* conventional and nuclear threats to deter strikes on the homeland becomes open to question. If an adversary struck the U.S. homeland with a measured number of nuclear weapons for the purposes of coercion, for example, the United States would design its response to be devastating and outweigh any benefit the adversary may have expected – but that is cold comfort to the victims of the initial attack or to any further attacks by opponents. The promise to avenge is indeed powerful, but it cannot stop an attack as it occurs, and it certainly cannot guarantee that a conflict will end with the U.S. response. In short, *the reason deterrence failed originally may be the same reason it is unlikely to be re-established through a limited U.S. response*. If confirmation bias and groupthink are strongly rooted in an adversary's leadership's decision-making dynamic, then the likelihood that U.S. nuclear responses – no matter how significant or well-targeted – will successfully re-establish deterrence at acceptable costs to the United States may be distressingly low.<sup>26</sup>

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<sup>25</sup> It is worth noting that mutual restraint during war is possible even under the most stressing of circumstances, but the only historical examples are conventional, not nuclear. See, for example, Jeffrey W. Legro, *Cooperation Under Fire: Anglo-German Restraint During World War II* (Ithaca, NY: Cornell University Press, 1995).

<sup>26</sup> For additional commentary on this point, see, Gray, "Presidential Directive 59: Flawed but Useful," *op. cit.*, pp. 29-37.; and, Gray, "Defense, War-Fighting and Deterrence," *op. cit.*, pp. 38-43.

## Why Might Adversaries Limit Strikes?

To understand how best to deter coercive strikes on the U.S. homeland, and the questionable sufficiency of relying solely on offensive threats for that purpose, there must be an understanding of why an adversary might convey limited threats or willingly limit the type or number of targets in an attack. The motivations will likely vary from opponent to opponent, and a single motivating factor seems less likely than some combination of multiple considerations. With these caveats in mind, the motivations to limit an attack may be generally divided into positive and negative categories.

In the “positive” category, an adversary may hope to improve its chances of victory via *threats* of a limited coercive strike on the U.S. homeland. An adversary may threaten or conduct such a strike from a perceived position of weakness (a gamble) or strength (a demand) in the hopes that the United States will concede to the adversary’s terms to end the conflict. This kind of strike may be considered an intra-war signal that political settlement offers the benefit of less cost to the United States than the cost of continued conflict. Additionally, an adversary may not wish to encourage a particular U.S. action, but rather promote a particular U.S. perception that the adversary is resolute and dangerous, and thus improve the chances that the U.S. leadership will offer concessions for fear of further escalation.

In the “negative” category, an adversary may threaten a coercive strike against the U.S. homeland not so much to improve its chances of victory, but to deny the United States the prospect of success. According to this logic, an adversary may conduct a coercive strike against targets in the U.S. homeland to deter or halt ongoing U.S. actions during a conflict. That is, if the United States intentionally or unintentionally crosses an adversary’s “red line” during

a conflict, the adversary could select a particular, limited set of targets in the United States which, if destroyed, would either deter further U.S. involvement (e.g., the decision to come to the defense of an ally), or halt such actions (e.g., halting the projection of force overseas).

Whether the goals of an adversary's strikes on the U.S. homeland are meant to improve the adversary's chances of success, promote the U.S. perception of the likelihood of failure, or some combination, it is evident that an adversary is likely to choose targets that, if destroyed, negate a U.S. military advantage and send a clear political signal to the U.S. leadership about the cost of further conflict. It is no exaggeration to state that the consequences of an adversary's failed coercive strike against the United States might be existential – whether the failure resulted from misperceptions about the likely U.S. response or the less-than-expected extent of the damage. In short, an adversary's strike against the U.S. homeland is inherently very risky, and thus likely to evoke careful consideration among an adversary's leadership about the potential costs and benefits. However, it is important to note here that history provides numerous examples of state leaders knowingly taking extreme risks to advance cherished goals they deem to be of existential importance.

The dual-risk nature of striking the U.S. homeland warrants special emphasis for deterrence purposes. Without homeland missile defenses, an adversary must have primarily only one concern, whether he has calculated correctly that the costs of the expected U.S. response will be less than the expected benefits of the strike.<sup>27</sup> Granted, this

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<sup>27</sup> There are other secondary concerns, of course, such as whether the missiles will work correctly and whether the damage expectancy calculations are correct. These, however, can be mitigated by the adversary's potential choice, even likelihood, of launching more missiles than are strictly necessary as a hedge against miscalculation and failure.

is a great concern, but still only one. On the other hand, by adding U.S. homeland missile defenses into the equation, the adversary must now be concerned with not only a greater than expected U.S. response, but also the prospect of having gained very little in the process. In short, U.S. homeland missile defenses contribute to the risk of an “all pain and no gain” scenario to the adversary. If the adversary’s missiles work as expected against U.S. targets in the absence of missile defenses, but the U.S. response is costly, the adversary may still expect at least some net gain. The presence of U.S. homeland missile defenses, however, contributes to a different and potentially credible deterrence scenario by which the adversary can imagine the consequences of both miscalculating the U.S. response and having initiated a failed attack. Given the stakes of a potential conflict and the consequences of a failed attack, expanded homeland missile defenses may provide the critical additional set of fears in the adversary’s calculations that tip the balance toward deterrence.

The question for U.S. policymakers then is, since an adversary that seriously considers a coercive strike against the U.S. homeland is likely to be very highly motivated, more risk-tolerant, and perhaps even doubtful of U.S. resolve given the perceived stakes in the conflict, what can the United States do to improve the chances that deterrence functions effectively? If the deterrence problem for the United States lies in the adversary’s perception of a lack of U.S. will in the face of severe threats of damage to its homeland, then what can the United States do to discourage that perception, and thus deter such attacks? U.S. homeland defenses that could limit both U.S. vulnerability to coercive threats and the prospective damage from coercive attacks appear potentially very helpful in this regard.

### *Summary of the Problem*

Despite their best efforts, U.S. defense officials cannot have confidence they will control the process of escalation when the only tools they can employ are offensive threats – more or less limited in size and scope – against an adversary that may be equal parts paranoid, risk-tolerant, and even existentially-motivated. In short, the current U.S. escalation limitation strategy against a peer threat essentially *depends* on an ultimately cooperative opponent who recognizes the risks of attacking the United States, is open to the possibility of concession, can suitably assess U.S. intentions, and perceives the costs and likelihood of aggression are greater than the potential benefits and likelihood of victory. This U.S. strategy strays dangerously close to what the eminent strategist Colin Gray warned should be avoided in any defense strategy: being “wholly fault-intolerant.”<sup>28</sup> That is, without a way to limit damage to the U.S. homeland other than an escalating series of offensive threats, the United States is, in the words of Keith Payne and Lawrence Fink, “gambling on perfection.”<sup>29</sup>

Is it prudent for the United States to double down on the gamble that deterrence will continue to function reliably despite a lack of homeland missile defenses against Russia and China? The great Prussian strategist Carl von Clausewitz, writing on the nature of war, warns that, “No other human activity is so continuously or universally bound up with chance. And through the element of chance, guesswork and luck come to play a great part in war.”<sup>30</sup> Given the role of chance in U.S. deterrence strategy, and the

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<sup>28</sup> Colin S. Gray, “From Defense Philosophy to Force Planning: the Strategic Forces,” *Defense Analysis*, Vol. 7, No. 4 (1991), p. 368.

<sup>29</sup> Keith B. Payne and Lawrence R. Fink, “Deterrence Without Defense: Gambling on Perfection,” *Strategic Review*, Vol. 17, No. 1 (Winter 1989), pp. 25-40.

<sup>30</sup> Clausewitz, *On War*, op. cit., p. 96.

potentially existential consequences of miscalculations by either the United States or the adversary, U.S. officials should re-examine how homeland missile defenses could contribute to U.S. national interests. Unquestionably, there are additional means beyond homeland missile defense that could also contribute to deterrence and damage limitation, such as improved civil and air defense measures, but these are beyond the scope of this paper.

## **What is the Purpose of a Homeland Missile Defense System?**

Before U.S. officials can determine the required size and complexity of a homeland missile defense system, they must first determine its purposes. The purposes of the missile defense system in turn determine the metrics for sufficiency. This point may appear banal, but critics of missile defense often charge that missile defense systems are not worth the investment because they are incapable of handling some particular mission that the system was never designed to handle. Thus, a missile defense system that is designed to defeat 50 warheads cannot be fairly judged as a failed investment because it can be overwhelmed by 500 warheads. Critics can certainly question whether a 50-warhead limit is a prudent design goal but measuring the value of a missile defense system must relate to its design goals.

The United States can consider a number of different purposes, or missions, that it wants its homeland missile defense system to support. At one end of the spectrum of choices is a leak-proof nationwide missile defense system that could reliably defeat any size of strategic missile attack, from any source, and from any domain – the original goal of President Reagan’s 1983 vision for the Strategic Defense Initiative. Without a major breakthrough in directed energy, however, such an option appears infeasible today both

technologically and fiscally. At the other end of the spectrum, the United States could opt for a strategy of bluff, hoping that a miniscule system could be made to appear larger and more capable than it really is, banking on the “threat that leaves something to chance” for deterrence. Such an option appears unworkable as an open society like the United States could not likely keep its missile defense system’s minimal capabilities secret for long. As strategists have long recognized, and as the “Scowcroft Commission,” stated explicitly, “Deterrence is not, and cannot be, bluff... Deterrence, on the contrary, requires military effectiveness.”<sup>31</sup>

If the two options discussed above are excluded, the design choices for useful homeland missile defense systems then narrow to three general options: a system designed to only defeat accidental and unauthorized launches; maintenance and modernization of the current system designed to defeat rogue state threats; or, a system designed to stay ahead of the rogue state threat and defeat coercive attacks by Russia and China (with the inherent capability against accidental and unauthorized attacks).

The first option for a missile defense system designed to defend against accidental or unauthorized launches has some appeal due to recent events. In March 2022, the Indian military was conducting maintenance on a missile when a “technical malfunction” launched the missile which flew more than 75 miles into Pakistan.<sup>32</sup> Although there were no reported casualties, the dangerous incident between two nuclear-armed rivals highlights the possibility of accidental

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<sup>31</sup> President’s Commission on Strategic Forces, *Report of the President’s Commission on Strategic Forces* (Washington, D.C.: Department of Defense, April 6, 1983), pp. 2, 6, available at <https://www.cia.gov/readingroom/docs/CIA-RDP85M00364R001101620009-5.pdf>.

<sup>32</sup> “India Accidentally Fires Missile into Pakistan,” *BBC*, March 11, 2022, available at <https://www.bbc.com/news/world-asia-india-60711653>.

or even unauthorized missile launches. If the United States pursued building a homeland missile defense system designed to defeat such threats, it would likely be scrutinized as a substantial investment of resources designed for too narrow a purpose, against an event with a very low probability of occurrence. That is, if the United States is going to invest its resources to design, test, and deploy interceptors that can defeat accidentally-launched missiles from any source, including technologically sophisticated adversaries, then restricting the program to combatting only accidentally-launched, and not purposely-launched, threats would likely be operationally problematic, politically intolerable, and fiscally imprudent.

The second option, which the United States currently appears to be pursuing, is maintaining and modernizing the existing GMD system, which will eventually incorporate the Next Generation Interceptor (NGI), designed to defeat more advanced rogue state threats.<sup>33</sup> This option has the benefit of striving to stay ahead of the rogue state threat, but it is not designed to defeat missile threats from Russia or China. Yet, it appears that if the United States continued with its current plan, this would only delay a decision on whether or not to design a system to intercept some number of Russian or Chinese ballistic missiles. As the North Korean ICBM program continues, and presumably incorporates more and better countermeasures designed to defeat a U.S. missile defense system, it may approach a point where the delta between the technological sophistication of North Korean and, for example, Chinese countermeasures is insignificant. In short, a U.S. homeland missile defense system designed to intercept advanced

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<sup>33</sup> Sasha Baker, *Statement of Ms. Sasha Baker, Deputy Under Secretary of Defense for Policy* (Washington, D.C.: House Armed Services Committee, March 1, 2022), p. 7, available at <https://docs.house.gov/meetings/AS/AS29/20220301/114435/HHRG-117-AS29-Wstate-BakerS-20220301.pdf>.



North Korean missiles may, in the future, also be able to intercept a measure of Russian or Chinese missiles. If that is the case, then the United States could designate an expanded mission set for NGI that includes intercepting Russian and Chinese ballistic missiles while the program is still in its relatively early stages and could potentially accommodate redesign requests with less cost.

The third and final option, the one recommended here for the United States to pursue, is a homeland missile defense system designed to deter, and if necessary, defeat coercive attacks from Russia and China while staying ahead of the rogue state threat and protecting against accidental and unauthorized launches. Such a system would be designed to defeat the kinds of coercive attacks against the U.S. homeland that Russia or China might consider as a means of deterring, disrupting, or delaying U.S. intervention in defense of allies overseas. This option would be designed to both defeat a core tenet of Russia's and China's military theories of victory against the United States, while defending America's preferred strategy of basing many of its military forces in the homeland to be dispatched abroad when needed.<sup>34</sup>

A defense against "coercive" attacks is meant to convey the U.S. intent to defeat attacks that are restricted in their size and scope, as envisioned by Russian and Chinese defense officials, to discourage U.S. actions to combat regional aggression overseas. U.S. intelligence estimates would necessarily inform missile defense architecture designers, especially with – to the extent available – analysis on what Russia and China may target in coercive attacks, and with how many, and what types of, missiles. Since

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<sup>34</sup> For more on a U.S. "victory denial" deterrence strategy, see, Keith B. Payne and Matthew R. Costlow, "A Victory Denial Approach to Deterrence," *Journal of Policy & Strategy*, Vol. 2, No. 2 (2022), pp. 31-48, available at <https://nipp.org/wp-content/uploads/2022/05/Special-Issue-final.pdf>.

deterrence requirements can, and likely will, shift, there is no precise “right” number of interceptors or missiles to be defeated – only better or worse-informed estimates of what might be needed to allow deterrence to continue to function.

The requirements of such a system are not unlimited – the ability to defeat only five warheads would likely not be enough to deter a coercive attack, but the ability to defeat several thousand warheads would seem in excess of the requirements. Instead, a system designed to defeat hundreds of warheads, while certainly ambitious and a long-term goal, appears likely to provide enough capability against significant and repeated coercive attacks on the homeland while retaining enough of a hedge in case the United States underestimates the opponent’s will or technological capabilities.

The technical aspects of the proposed missile defense system are beyond the policy-focused scope of this paper and are best assessed in a classified setting in any case. But, for the purposes of clarity, the proposed system will likely need to focus on defeating cruise and ballistic missiles first as these are the most numerous and potentially likely threats; hypersonic glide vehicles, or other maneuvering threats, however, must also be included once the technology needed to defeat them matures.<sup>35</sup> On the topic of basing, whether on land, at sea, in the air, or in space, this paper remains agnostic on the specific ratios – each basing mode will likely play some role as they all offer advantages and disadvantages in factors such as cost, mobility, ease of access, coverage, vulnerability, etc. A space-based layer would, in all likelihood, however, play a major role for

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<sup>35</sup> Jen Judson, “Raytheon, Northrop Advance in Competition to Develop Hypersonic Weapons Interceptor,” *Defense News*, June 24, 2022, available at <https://www.defensenews.com/pentagon/2022/06/24/raytheon-northrop-advance-in-competition-to-develop-hypersonic-weapons-interceptor/>.

sensors and shooters in the system as it provides for the most intercept attempts at the earliest stages of a missile's flight. Finally, this paper is agnostic on which phases of missile flight (boost-phase, mid-course, and terminal) the proposed missile defense system should cover in what proportion. Again, such a discussion, while clearly valuable and necessary, must build on the more fundamental question that is the focus of this paper: *should* the United States expand its missile defense mission? Questions of *how best* to accomplish the new policy goal will naturally follow.

As for the question of *what* in the homeland the United States should seek to defend and limit damage to, the answer is both societal (population centers) and politico-military (leadership, command and control, military, etc.). In one sense, there is no clean distinction between the two categories in this regard since some politico-military targets are co-located with societal targets – damage against one may inevitably lead to damage against the other, especially in case of the employment of nuclear weapons. Additionally, the choice of interceptor-basing can further diminish the importance of distinctions between the two categories; simply by the nature of space-based interceptors being able to intercept missiles earlier in their flight, by definition they can defend both societal and politico-military targets. As a missile reaches its terminal phase of flight, closest in distance to its target, is when the question of “what to defend?” becomes most pertinent. Given the public testimony by USSTRATCOM and USNORTHCOM Commanders cited above, U.S. defense officials should prioritize terminal defenses for those capabilities that enable U.S. force projection overseas. Overall, the question of what should be protected must include two primary categories: the capabilities that adversaries are most likely to target given their coercive purposes, and the capabilities that are most critical to the U.S. national defense strategy.

U.S. officials should prioritize defending those capabilities that overlap in both categories.

The following section details the potential benefits that the United States could realize if it pursued a homeland missile defense system designed to deter and defeat coercive attacks from Russia and China, while staying ahead of the rogue state threat. Some benefits are necessarily more consequential than others, but each is an important factor for policymakers to consider.

## **Potential Benefits of an Expanded Homeland Missile Defense System**

It is tempting to place the potential benefits of an expanded homeland missile defense system into one of two categories – pre-conflict (deterrence) and intra-conflict or post-attack (damage limitation). However, this is an artificial and potentially unhelpful distinction. An adversary may be deterred from attacking simply by the chance that the system could work, or because the United States rigorously and visibly tested the system, thus demonstrating its damage limitation capabilities, which in turn could enhance deterrence. Similarly, an adversary that perceives little likelihood of success through limited coercive attacks on the U.S. homeland (deterrence) may seek an arms control agreement with the United States or shift its investments to areas where it has a more exploitable advantage (a potential form of damage limitation). Deterrence and damage limitation are therefore inextricably connected – making any bifurcation of the potential benefits between the two categories potentially misleading.

The following subsections therefore list the potential benefits of an expanded homeland missile defense system with the most consequential appearing first and the more secondary benefits appearing later.

### *Improved Deterrent Effects by Denying Russia's and China's Theories of Victory*

As senior U.S. defense officials have testified, Russia and China are increasingly investing in missiles to strike the U.S. homeland, a lynchpin capability for their regional ambitions and the foundation for their coercive strategies against the United States. A U.S. homeland missile defense system that is designed to defeat coercive attacks could greatly improve deterrence by raising the threshold or “entry price” for attacking the U.S. homeland, while still holding in reserve the deterrent threat of a devastating U.S. offensive response. In this sense, the deterrent threat of denial is additive to the deterrent threat of punishment – an attack could fail *and* be too costly.

A key concept in this regard is “complicating” the adversary’s attack plans – an oft-used term that is rarely expounded upon. In essence, an expanded U.S. homeland missile defense system creates unfavorable operational and political tradeoffs for the adversary. If, for example, Russia considers conducting a coercive strike against the U.S. homeland that has an expanded missile defense system, it could launch more missiles in an attempt to overwhelm the missile defenses, but it risks potentially signaling that it has unlimited intentions – that is, U.S. officials might see the missile attack as so numerous that it might be the leading edge of a first strike, thus encouraging a potentially larger U.S. response. If that option is deemed too risky to the Russian leadership, then perhaps it could add expensive countermeasures to its missiles – but this option could increase cost, add weight, decrease range, increase complexity, and still risk having a significant number of missiles intercepted. Finally, Russia could adapt its tactics and perhaps operate its submarines closer to the U.S. coast to decrease warning time and intercept attempts, but such actions again may risk unintentionally signaling to U.S.

leaders an incoming first strike, or at a minimum, raising the risk of Russian submarines being detected before they launch their missiles. In short, the presence of an expanded U.S. homeland missile defense system denies the adversary his preferred coercive attack plan – it raises risks, increases costs, and adds uncertainty. Again, an adversary’s leadership may require a *high confidence* assessment that its proposed coercive attack on the United States will work as planned, so the uncertainties, risks, and tradeoffs listed above may prove decisive for deterrence.

An expanded U.S. homeland missile defense system could strengthen deterrence against coercive missile attacks by lowering the perceived value of making such threats against the United States in the first place. Russia and China, among others, may believe that issuing ultimatums, implicit threats, or explicit threats of coercive attacks against the U.S. homeland can limit the U.S. leadership’s freedom of action during a crisis or conflict, raising the prospect and perceived likelihood of “winning” without much or any fighting. Yet, adversary leaderships may pause before issuing such threats if the United States had the capability to defeat coercive attacks against its homeland since following through on the threats and failing might reduce the value of future threats and demands against the United States. Such an attack would demonstrate weakness, not strength, and would do so at great risk.

Additionally, an expanded U.S. homeland missile defense system can further help deter attack by increasing the chance that the United States will detect the adversary’s preparations – the larger the attack needed to defeat U.S. missile defenses, potentially the better chance those preparations will be detected. If the United States receives enough advanced warning it can take further actions that may greatly lower the adversary’s chances for success, such as dispersing mobile assets, hardening facilities, alerting military forces, etc. Active homeland missile defenses

present an especially valuable capability in denying, or at least diminishing, the advantages an adversary may perceive in conducting a surprise attack.

For example, two of the most comprehensive reviews of the Russian defense literature on escalation indicate that Russian strategists perceive major advantages in preemptive action at the early stages of conflict – thus indicating significant reliance on surprise. One report states, “As the Russian military considers operations during the transition from the threatened period to direct conflict, they display a noticeable desire for preemption and an expectation that Russian forces will seek to neutralize the threat as it is forming.”<sup>36</sup> Additionally, as NATO staff officer Dave Johnson notes, “The SODCIT [strategic operation for the destruction of critically important targets] and defensive aerospace campaigns are part of Russia’s military response to the perceived threat of a mass aerospace attack by the U.S. and its NATO Allies and as such have a strong preemptive component.”<sup>37</sup>

Importantly for deterrence, especially in the case of Russia, it appears the prospect of conducting a coercive strike in the presence of missile defenses is a source of apprehension among Russian military strategists. For example, in a review of the Russian literature on the subject, the authors of a recent report state that, “When considering conflict thresholds escalating from large-scale war to nuclear war, some Russian analysts also write of the need to learn from the US experience of integrating strategic

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<sup>36</sup> Michael Kofman, Anya Fink, Jeffrey Edmonds, et. al., *Russian Strategy for Escalation Management: Evolution of Key Concepts* (Washington, D.C.: CNA, April 2020), pp. 28-29, available at [https://www.cna.org/CNA\\_files/PDF/DRM-2019-U-022455-1Rev.pdf](https://www.cna.org/CNA_files/PDF/DRM-2019-U-022455-1Rev.pdf).

<sup>37</sup> Dave Johnson, *Russia’s Conventional Precision Strike Capabilities, Regional Crises, and Nuclear Thresholds* (Livermore, CA: Lawrence Livermore National Laboratory, February 2018), p. 55, available at <https://cgsr.llnl.gov/content/assets/docs/Precision-Strike-Capabilities-report-v3-7.pdf>.

offensive and defensive operations. The deployment of US missile defenses also weighs heavily on the minds of Russian planners in considering the likely utility and effectiveness of their own strategic nuclear forces as part of such operations.”<sup>38</sup> The authors further underline their point by noting U.S. missile defense is a “fixation” for Russian military strategists.<sup>39</sup> It appears the Russian “fixation” with U.S. missile defense even extends to the theater level: “Russian deliberations on the threat posed by theater US missile defense to these calibrated escalation approaches also telegraph one of the likely potential counters to single or grouped strikes.”<sup>40</sup> These conclusions indicate that if the relatively limited current U.S. homeland missile defense system can produce this amount of uncertainty among Russian military planners, an expanded system could potentially have very powerful deterrent effects.

### *Ability to Limit Damage Without Offensive Strikes*

As a geographically separated power, the United States can essentially decide when and where to intervene overseas in support of allies, and has hoped to effectively preclude attacks against the homeland by fighting “over there.” Now, Russia, China, and North Korea can potentially reach the United States with their weapons and may believe that a coercive strike (or full-scale attack in the case of North Korea) is the least intolerable option they have during a crisis or conflict. Should deterrence fail, the United States could undertake a strategy of attempting to restore deterrence and limit damage via offensive strikes against

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<sup>38</sup> Kofman, Fink, Edmonds, et. al., *Russian Strategy for Escalation Management: Evolution of Key Concepts*, op. cit, p. 65.

<sup>39</sup> Loc cit.

<sup>40</sup> *Ibid.*, p. 75.



the adversary in the hope that both sides could arrive at a political settlement. The risks inherent in this strategy, detailed above, are obvious – especially given that both sides will have potentially already demonstrated their willingness to employ nuclear weapons.

The U.S. ability to limit damage via a homeland missile defense system, however, likely poses far less escalation risk during a conflict and can protect critical infrastructure – thus allowing the United States to maintain its military readiness. Given the co-location of critical infrastructure and populous urban centers in the United States (ports, railyards, power plants, military bases, etc.), even an imperfect defense against conventional strikes – and in some cases, even nuclear strikes – could potentially save many lives and limit damage to recoverable levels. Even leaving aside the inherent value of protecting human lives, the economic costs of losing a major city to an enemy attack is staggering. In 2006, the RAND corporation estimated that a nuclear attack on the Port of Long Beach, California (encompassing the Port of Los Angeles as well) could cost more than \$1 trillion.<sup>41</sup>

If, as previously discussed, an adversary chooses to attack the U.S. homeland with conventional or nuclear missile strikes for coercive purposes, then the adversary is likely seeking some tangible politico-military advantage by disrupting, delaying, or deterring further U.S. action overseas – an attack of such scale and significance that the adversary is going to likely seek a high degree of confidence that it will work as planned before deciding to execute that plan. An expanded U.S. homeland missile defense system, however, could vastly complicate such an attack. The U.S.

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<sup>41</sup> Charles Meade and Roger C. Molander, *Considering the Effects of a Catastrophic Terrorist Attack* (Santa Monica, CA: RAND Corporation, 2006), p. 6, available at [https://www.rand.org/content/dam/rand/pubs/technical\\_reports/2006/RAND\\_TR391.pdf](https://www.rand.org/content/dam/rand/pubs/technical_reports/2006/RAND_TR391.pdf).

ability to limit damage to critical targets could enable the United States to recover more quickly, thus making the attack a failure and perhaps contributing to deterring further attempts. Should the adversary deem a failed conventional attack on the U.S. homeland as not worth the risk, it would then be forced to contemplate nuclear strikes on the U.S. homeland to improve the chances that missiles which get through the defenses can deliver the required levels of destruction to the critical infrastructure. This option, however, invites an even larger set of risks by introducing the possibility of a U.S. response including nuclear strikes against the adversary's homeland.

It is worth dwelling for a moment on the great importance of a U.S. ability to limit damage to the homeland at the conventional level for deterrence purposes – both operationally and strategically. At the operational level, the less damage the adversary can inflict on U.S. force projection or command and control capabilities, the more freedom of action available to U.S. leadership, including to protect allies abroad. More importantly, however, at the strategic level, the U.S. ability to limit damage to its homeland from conventional weapons during a conflict helps raise the threshold against an adversary's escalation efforts. Greatly complicating or foreclosing conventional attack options against the U.S. homeland leaves the adversary with three basic choices: conciliation, continued regional conflict where U.S. conventional forces can be brought to bear, or escalation to nuclear strikes against a defended U.S. homeland infrastructure that can respond with devastating effects. None of these options are likely to appear attractive, but some clearly involve less risk, thus potentially strengthening deterrence.

Additionally, given the U.S. geographic separation from its allies and partners overseas, damage to U.S. critical infrastructure – especially the infrastructure that facilitates military force flow overseas – would be uniquely disruptive

to U.S. defense plans. Since the United States will likely ship the bulk of its forces overseas rather than fly them, given the lack of assets and the associated costs, any delays caused by adversary attacks will be additive to the long lead times of mobilization and transportation across the sea. For allies and partners facing large-scale attacks, such disruptions and delays in the United States could mean the difference between survival and defeat. The U.S. ability to limit damage to its homeland, therefore, will be critical to securing its, and its allies', national interests.

### *Supports Existing U.S. Policy and Defense Strategy by Defending the Homeland*

Critics of an expanded U.S. homeland missile defense system will no doubt emphasize its discontinuity with past U.S. missile defense practice, but past policy and bureaucratic inertia are no sound bases for dismissing the system, especially in light of the fact that improved homeland missile defenses would support the Department of Defense's longstanding number one mission: defending the homeland.<sup>42</sup> If anything, such a missile defense system will grant great credibility to that number one mission by protecting critical potential targets at home so that the

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<sup>42</sup> For a recent bipartisan list of statements to this effect, see, U.S. Department of Defense, *Quadrennial Defense Review 2014* (Washington, D.C.: Department of Defense, 2014), p. 12, available at <https://history.defense.gov/Portals/70/Documents/quadrennial/QDR2014.pdf?ver=tXH94SVvSQLVw-ENZ-a2pQ%3d%3d>; and, U.S. Department of Defense, *Summary of the 2018 National Defense Strategy of the United States of America* (Washington, D.C.: Department of Defense, 2018), p. 4, available at <https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>; and, U.S. Department of Defense, *Fact Sheet: 2022 National Defense Strategy* (Washington, D.C.: Department of Defense, 2022), p. 1, available at <https://media.defense.gov/2022/Mar/28/2002964702/-1/-1/1/NDS-FACT-SHEET.PDF>.

United States can project power abroad. This benefit can be summarized as providing the U.S. leadership “freedom of action” – a sterile phrase when bereft of context.

The current U.S. policy dilemma with respect to supporting Ukraine in its ongoing defense against a Russian invasion provides an important example of how U.S. “freedom of action” can be constrained. Senior U.S. officials have repeatedly expressed the desire to avoid escalation with Russia, making it a major criterion for decisions on what kind of weapons it will supply to Ukraine and in what amounts. A U.S. leadership with an expanded homeland missile defense system designed to defeat coercive attacks from Russia, however, might consider a broader set of options in militarily assisting Ukraine. If, by chance, U.S. military assistance did cross an unknown Russian “red line,” there would be a way to limit that damage and potentially end the process of escalation. The same sorts of considerations may also apply in a potential conflict with Russia over a NATO ally or with China over Taiwan – a United States that is better defended may be more willing to pursue its national interests by aiding allies and partners overseas. In the words of the nuclear strategist Herman Kahn, “To put it another way, the side with some kind of defense has an excuse for being firm or arguing that it will stand firm. The side without the defense correspondingly has an excuse or a motivation for backing down, or strong incentive for accepting arguments in favor of backing down – or at least allies and neutrals are likely to believe that this is the situation.”<sup>43</sup>

Two historical examples from World War II may further illustrate how the vulnerability of homelands can greatly affect a leadership’s freedom of action. First, while British leaders were sympathetic towards Czechoslovakia in the

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<sup>43</sup> Herman Kahn, “The Case for a Thin System,” chapter in, Johan J. Holst and William Schneider Jr., *Why ABM? Policy Issues in the Missile Defense Controversy* (New York: Pergamon Press, 1969), p. 76.

face of German aggression in 1938, they declined to intervene militarily in large part because of their perceived lack of adequate air defenses against German bombers.<sup>44</sup> In this case, the vulnerability of the British homeland led the British leadership to conclude it could not safely pursue its national interests. Two years later, in 1940, homeland defenses enabled a leadership's freedom of action, but this time it was Germany's. The British and French were deterred from attacking Germany before it moved east to invade Poland in large part because of Germany's *Sigfried Line*, a large set of fortifications that British and French planners projected would inflict massive losses on their rearming, but still unprepared armies. Germany, on the other hand, was able to invade Poland in large part because its *Sigfried Line* defenses freed up more troops for the invasion.<sup>45</sup>

Thus, an expanded U.S. homeland missile defense system can contribute usefully to a larger set of options for a U.S. leadership that is understandably concerned about how the adversary will respond – especially against the U.S. homeland. First, such a system can allow U.S. leaders to consider new options that may not be brought up when the homeland is vulnerable. Second, such a system could reduce the risk of particular options to acceptable levels that U.S. leaders may have considered too risky with a highly vulnerable homeland. An expanded set of options for the U.S. leadership, newly available options, and those with reduced risk, open up new avenues for defending U.S. and allied national interests in ways that may be more likely to succeed than before.

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<sup>44</sup> Norrin M. Ripsman and Jack S. Levy, "Wishful Thinking or Buying Time? The Logic of British Appeasement in the 1930s," *International Security*, Vol. 33, No. 2 (Fall 2008), pp. 173-174.

<sup>45</sup> For additional commentary on this case, see John J. Mearsheimer, *Conventional Deterrence* (Ithaca, NY: Cornell University Press, 1983), pp. 67-98.

### ***Discourages Perceptions that the United States Lacks Political Will***

If deterrence is in danger of failing because an adversary perceives the U.S. leadership is lacking political will, the addition of an expanded U.S. homeland missile defense system could significantly contribute to reversing, or at least diminishing, that belief. Given the inherent credibility that the United States would employ missile defenses to defend its homeland, the adversary will likely attribute *a greater* level of resolve to U.S. leaders than otherwise would be the case. This may, in turn, contribute to deterring an attack on the homeland.

There are two specific ways that the United States could potentially benefit from an expanded homeland missile defense system's effect on the adversary's perception of U.S. will or resolve: increased credibility of U.S. initiation of force and increased credibility of an effective U.S. response to an adversary's initiation of force. First, if an adversary believes that the United States has the ability to limit damage to itself, then it is more likely to see U.S. extended nuclear deterrence threats for allies as less risky for Washington, and thus more credible.<sup>46</sup> If so, then the adversary may decide that large-scale conventional conflict, chemical attacks, or biological attacks, would not be worth the risk and be deterred from taking such steps.

A second potential benefit of an expanded homeland missile defense system is that it may discourage an

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<sup>46</sup> The yet-to-be-released 2022 *Nuclear Posture Review* will contain the definitive language, but the existing Department of Defense fact sheet on the 2022 NPR indicates that a "no first use" statement is not part of the document. See, Department of Defense, *Fact Sheet: 2022 Nuclear Posture Review and Missile Defense Review* (Washington, D.C.: Department of Defense, 2022), p. 1, available at <https://media.defense.gov/2022/Mar/29/2002965339/-1/-1/1/FACT-SHEET-2022-NUCLEAR-POSTURE-REVIEW-AND-MISSILE-DEFENSE-REVIEW.PDF>.

adversary's perception that it has the freedom to engage in nuclear first use in support of its expansionist goals. As stated by one report on the topic, "In the past, missile defense advocates, including Herman Kahn and Colin Gray, emphasized the value of U.S. missile defense for the credibility it could provide for U.S. nuclear escalation deterrence threats. In this case, however, the value is in helping to deny [an adversary] any expectation that *it can wield credible* nuclear first-use escalation threats."<sup>47</sup> Or, as Albert Wohlstetter explained during the Cold War, "In a war, when all alternatives may be extremely risky to an adversary, we may not convince him that the alternative to nuclear attack is riskier than the others if we have persuaded him also that it can be done safely because we won't retaliate for fear of the unlimited harm we would bring on ourselves."<sup>48</sup> In short, if the adversary believes the United States has the credible ability to limit damage to itself, then it may be less inclined to initiate the process of nuclear escalation, knowing that its first-use options are both risky and limited in their potential effect by U.S. missile defenses.

The presence of U.S. homeland missile defenses capable of defeating coercive level attacks could force the adversary to consider the need to launch a comparatively larger attack – an attack size that then is more likely to be deterred by U.S. strategic response capabilities.

### ***Strengthens Assurance of Allies and Partners***

All throughout the Cold War, the United States sought to provide assurance to its allies and partners, especially in Europe, that even though the United States was vulnerable

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<sup>47</sup> Emphasis in original. Payne and Costlow, "A Victory Denial Approach to Deterrence," *op. cit.*, p. 41.

<sup>48</sup> Albert Wohlstetter, "Bishops, Statesmen, and Other Strategists on the Bombing of Innocents," *Commentary*, Vol. 75, No. 6 (June 1983), p. 33.

to Soviet attack, that fact would not discourage it from supporting NATO in the event of a Soviet attack. To make this assurance credible in the eyes of allies, the United States based tens of thousands of troops and thousands of nuclear weapons in Europe and regularly conducted joint exercises with the Alliance. And yet, as the distinguished strategist Lawrence Freedman wrote in the 1980s, "The nagging question remains: why should states base their international behavior on the presumption that they have the backing of a particular super-power, when the implications for the super-power are potentially suicidal?"<sup>49</sup> In 1979, the recently retired Secretary of State Henry Kissinger, in a speech to NATO officials, stated even more bluntly, "And therefore I would say - what I might not say in office - that our European allies should not keep asking us to multiply strategic assurances that we cannot possibly mean or if we do mean, we should not want to execute because if we execute, we risk the destruction of civilization."<sup>50</sup>

Yet, with an expanded homeland missile defense system in place, U.S. leaders may be seen as more able to take risks in defense of allies and partners - even nuclear risks. Such a decision will certainly not be taken lightly, even in the presence of significantly effective homeland missile defenses, but such a system may be the crucial factor that provides credibility to U.S. deterrence threats in the eyes of adversaries - which is what matters for deterrence purposes. Allied and partner leadership must make critical defense decisions during a crisis or conflict, some of which will likely hinge on their perceptions of U.S. willingness to commit forces for their defense. If they are unsure of the U.S.

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<sup>49</sup> Lawrence Freedman, *Strategic Defence in the Nuclear Age*, Adelphi Papers #224 (London: International Institute for Strategic Studies, Autumn 1987), p. 23.

<sup>50</sup> Henry Kissinger, *NATO - The Next Thirty Years* (Washington, D.C.: Center for Strategic and International Studies, September 1, 1979), p. 11, available at <https://findit.library.yale.edu/catalog/digcoll:559343>.



commitment, they may be more willing to concede early, thus damaging U.S. national interests. As Hudson Institute scholars Herman Kahn, Donald Brennan, and E. S. Boylan stated in this regard, “The more likely it appears that U.S. military support would mean America exposing itself to nuclear blows, the less likely it will appear that the U.S. would take such risks to honor its military commitments.”<sup>51</sup> Thus it is in the U.S. national interests to reduce the chance that allies perceive the United States as a less-than-credible defense partner by expanding its homeland missile defenses, increasing the U.S. ability to successfully resist coercion and reducing the risks of assisting allies.

### *Damage Limitation Against a First Strike*

Given the emerging trilateral nuclear deterrence environment and Russia’s and China’s expansionist goals and growing nuclear arsenals, the dangers of a first strike against the United States are likely increasing. In the bilateral Cold War, the United States had to be concerned about surviving a Soviet first strike with enough nuclear weapons left to accomplish U.S. objectives against the Soviets, who would have had a greatly diminished nuclear arsenal after conducting the first strike. This is no longer the concern in a trilateral environment. U.S. nuclear planners must be concerned with not only surviving a first strike (from Russia, China, or both), but also surviving with enough nuclear weapons to confront both Russia and China, and to accomplish U.S. objectives without resorting

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<sup>51</sup> E. S. Boylan, D. G. Brennan, and H. Kahn, *An Analysis of ‘Assured Destruction’* (Croton-on-Hudson, NY: Hudson Institute, March 20, 1972), p. 16, available at <https://apps.dtic.mil/sti/pdfs/AD0750721.pdf>.

to counter-population targeting, an option that is highly immoral, against the laws of war, and non-credible.<sup>52</sup>

A U.S. homeland missile defense system designed to defeat limited strikes from Russia and China may provide some protection to U.S. nuclear assets against a Russian or Chinese first strike, most notably submarine and bomber bases, and possibly, via preferential defense tactics, against an adversary's first strike against U.S. ICBM fields. Even a modest layer of missile defenses can provide a "time-saving" option to allow mobile nuclear command and control capabilities, like E-4Bs (National Airborne Operations Centers), to disperse and perform their missions.<sup>53</sup>

### *Improved Crisis Stability*

Although referenced obliquely earlier, it is worth discussing explicitly the potential benefits an expanded homeland missile defense system could provide in times of crisis. The first and most obvious way is that, with the presence of significant active defenses, U.S. leaders may be less pressured to consider preemptive strikes with conventional or nuclear weapons for damage limitation.<sup>54</sup> That is, without significant missile defense capabilities U.S. leaders

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<sup>52</sup> See especially in this regard, Keith B. Payne and David J. Trachtenberg, *Deterrence in the Emerging Threat Environment: What is Different and Why it Matters* (Fairfax, VA: National Institute for Public Policy, August 2022), *Occasional Paper*, Vol. 2, No. 8, available at <https://nipp.org/wp-content/uploads/2022/08/OP-Vol.-2-No.-8.pdf>.

<sup>53</sup> For more on E-4Bs, see, U.S. Air Force, "E-4B," *AF.mil*, November 2016, available at <https://www.af.mil/About-Us/Fact-Sheets/Display/Article/104503/e-4b/>.

<sup>54</sup> Consider, for example, the account of events in 1994 regarding North Korea, as stated in Ashton B. Carter and William J. Perry, "Back to the Brink," *The Washington Post*, October 20, 2002, available at <https://www.washingtonpost.com/archive/opinions/2002/10/20/bac-k-to-the-brink/078e6a56-fc48-458d-a70e-33bc3d97cdf9/>.

could calculate that conflict is inevitable and therefore preemption is the least miserable option. With significant homeland missile defense capabilities, however, U.S. leaders may have time to consider additional options with fewer incentives to go on the offensive – indeed, the presence of such defenses may strengthen the position of elements of the leadership to advocate for continued diplomatic engagement during a crisis, potentially lengthening decision-making time.

Additionally, as stated above, the presence of significant defensive damage limitation capabilities during a crisis may confer an element of credibility or resolve to the U.S. leadership in the mind of the adversary. Whether this credibility is “earned” through U.S. actions or the product of U.S. homeland missile defenses’ mere existence, an adversary may be more likely to believe U.S. leaders are resolute in their position in part because they can limit damage effectively if a crisis devolves into a war. In short, the presence of significant U.S. homeland missile defenses presents an additional barrier to the adversary to escalate a crisis into conventional or nuclear war.

Moreover, a potential benefit of significant U.S. homeland missile defenses is hedging against the possibility of U.S. or an adversary’s miscalculation. The United States or the adversary could unknowingly cross the other’s “red line” during a crisis, but the presence of U.S. missile defense could aid in keeping the situation contained and the damage limited. Without significant homeland missile defenses, such miscalculations stand less of a chance of being contained since both sides would have to exercise restraint in the face of enormous pressure to respond with offensive strikes. Since the practice of deterrence is an art and not a science, and adversary intentions are difficult to glean in even the most peaceful circumstances, it is possible that the United States or the adversary could miscalculate or unknowingly trigger an adversary’s response with its

actions – in which case, having a final line of defense against unrestrained conflict might be particularly valuable. Defending against such a possibility, and its attendant consequences, seems only prudent.

### ***A Strengthened Technological Base for Breakthrough Research***

A common criticism against significant investments in homeland missile defense is that such investments will only become useful if there is major technological breakthrough – and since, in the critics’ opinion, such a breakthrough does not appear imminent, the investments are not worth the cost. This assertion is problematic, however, since one cannot be sure what technological advances are feasible without funding the necessary research. Should the United States establish a serious commitment to homeland missile defense (a steady “demand” signal to market forces), U.S. industry will respond and continue pushing the boundaries of the possible through research and development. By transitioning missile defense technology from a fairly niche enterprise to a national priority, U.S. defense officials can establish a dynamic technological base that is incentivized to pursue research and development in “breakthrough” technologies. Israel, for instance, has a national-level commitment to air and missile defense, and appears to be on the leading edge of applying laser technology to missile defense problems.<sup>55</sup> The United States, which has clear qualitative technological advantages over states like Russia

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<sup>55</sup> Laurie Kellman, “Israel Successfully Tests New Laser Missile Defense System,” *Defense News*, April 15, 2022, available at <https://www.defensenews.com/training-sim/2022/04/15/israel-successfully-tests-new-laser-missile-defense-system/>.; See also, Ilan Berman, *The Logic of Israel’s Laser Wall* (Fairfax, VA: National Institute for Public Policy, June 23, 2022), Information Series #526, available at <https://nipp.org/wp-content/uploads/2022/06/IS-526.pdf>.

and China, should consider building on its advantages by committing to the technology-intensive research demanded by missile defense.

### *Hedge Against Bluffers, Lunatics, Fanatics, and Mishaps*

The aphorism “expect the unexpected” applies even to international security. Simply put, an expanded homeland missile defense system will help protect against the unexpected, whether that is state leaders who are beyond deterrence for reasons of irrationality or fanaticism, accidents, unauthorized launches, or pure gamblers willing to risk the fate of their nation. As Herman Kahn stated, “In an offensive deterrent situation, the irrational or irresponsible have a clear and possibly overwhelming advantage over the sober, prudential, ‘reasonable’ people. For this reason alone it is probably wrong to try to make the balance of terror excessively stark.”<sup>56</sup> One might add that the highly motivated, in addition to the irrational and irresponsible, may have advantages in crisis or conflict situations with the United States – and if their advantage in the balance of resolve is not counter-balanced by a demonstrated U.S. ability to limit damage to the homeland, opponents may simply calculate that the risks of crossing U.S. “red lines” are acceptable in pursuit of their strategic goals.

### *Hedge Against Rapid Military Shifts*

Another potential benefit to expanded U.S. homeland missile defense is the improved U.S. ability to hedge against rapid shifts in the balance of military forces. Given the rapid pace of technological change today, it is not unreasonable to

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<sup>56</sup> Kahn, “The Case for a Thin System,” op. cit., p. 84.

assume that states like Russia or China could make swift and unexpected advances in their military capabilities, whether regional or intercontinental. The traditionally long lead times for major U.S. defense programs typically precludes quick adjustments to the U.S. force posture, but the presence of significant homeland missile defense capabilities may lessen the perceived U.S. need to initiate crash programs to research and develop counters to emerging adversary technologies. To the extent that a U.S. missile defense-based hedge can contribute to lessening the perceived need for crash offensive weapon development programs, the United States may have an improved position over the long-term competition in technology with states like Russia and China.

## **Answering Criticisms**

It is no coincidence that two of the fiercest debates among U.S. defense strategists in the past 50 years were on the topic of missile defense: the 1972 ABM Treaty and President Reagan's 1983 announcement of the Strategic Defense Initiative. Debates about missile defense, most especially homeland missile defense, appear to involve all the volatility of debates about nuclear strategy - since their topics are closely related - but add another layer of fundamental questions about the desirability, or, as some assert, lack of choice, of living in a world governed by mutually assured destruction (MAD). Undoubtedly, the prospect of an expanded U.S. homeland missile defense system will generate a critical response among those already inclined to view any sort of population-defending system as "destabilizing," but the following answers to anticipated criticism aims to persuade those who are open-minded to the benefits of improved U.S. homeland missile defense, but who also want answers to critics' claims. Readers will notice that the anticipated criticism,

“expanded and improved U.S. homeland missile defense is technologically infeasible” is not included in the following discussion. This is deliberate. First, because this is a policy-focused paper and such technical discussions warrant their own dedicated studies – which others have written on quite well.<sup>57</sup> Second, this criticism was weak, but plausible, in the early 1970s, and dubious in the 1980s, but is discredited today. As the United States, Russia, and China all pursue expanded and improved homeland missile defense systems, the critics who insist all their efforts are technically infeasible appear increasingly isolated – the broader debate has largely moved beyond whether the United States *can* defend against adversary missiles to a useful extent, to whether it *should* do so. The following answers to criticisms reflect the shift in the debate. The three criticisms addressed are that an expanded U.S. homeland missile defense system: will be destabilizing during a crisis because of first strike fears; will not satisfy the “Nitze criterion” of being “cost-effective at the margin;” and, will cause an arms race.

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<sup>57</sup> For example, see, Tom Karako and Masao Dahlgren, *Complex Air Defense: Countering the Hypersonic Missile Threat* (Washington, D.C.: Center for Strategic and International Studies, February 2022), available at [https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/220207\\_Karako\\_Complex\\_AirDefense.pdf?SmaHq1sva9Sk.TSlzpXqWY72fg8PdLvA.](https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/220207_Karako_Complex_AirDefense.pdf?SmaHq1sva9Sk.TSlzpXqWY72fg8PdLvA.); and, Ian William, Masao Dahlgren, and Thomas G. Roberts, *Boost-Phase Missile Defense: Interrogating the Assumptions* (Washington, D.C.: Center for Strategic and International Studies, June 2022), available at [https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/220624\\_Karako\\_BoostPhase\\_MissileDefense.pdf?WjJxlNM58oru1LK21LC9untewoK\\_UAQD.](https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/220624_Karako_BoostPhase_MissileDefense.pdf?WjJxlNM58oru1LK21LC9untewoK_UAQD.); and, Tom Karako, Matt Strohmeier, Ian Williams, Wes Rumbaugh, and Ken Harmon, *North America is a Region, Too: An Integrated, Phased, and Affordable Approach to Air and Missile Defense of the Homeland* (Washington, D.C.: Center for Strategic and International Studies, July 2022), available at [https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/220714\\_Karako\\_North\\_America.pdf?BhIKa8jHHF\\_kV94NXRMx6D4m2o6LQqUf.](https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/220714_Karako_North_America.pdf?BhIKa8jHHF_kV94NXRMx6D4m2o6LQqUf.)

*It Will Be Destabilizing During a Crisis  
Because of First Strike Fears*

An oft-voiced criticism of U.S. homeland missile defense is that it could produce two separate dangers, perhaps simultaneously: first, the presence of very capable U.S. homeland missile defenses will cause first strike incentives among U.S. leaders because they will believe the defenses can negate the uncoordinated and diminished adversary response to a U.S. first strike within acceptable levels of risk and damage. Second, that the adversary will perceive an increased risk of a massive U.S. first strike because the United States is modernizing its nuclear arsenal, in addition to its significant conventional precision-strike capabilities, to the point where even imperfect defenses could negate the adversary's response – thus inducing first strike incentives in the adversary's leadership during a crisis.<sup>58</sup> Together, these suggested possibilities are the basis for Thomas Schelling's famous concern about the "reciprocal fear of surprise attack."<sup>59</sup>

Both criticisms falter on the fact that such concerns sound plausible in theory, but in practice, a whole host of factors make them implausible. To begin with the criticism that expanded U.S. homeland missile defense could

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<sup>58</sup> Charles L. Glaser, *Analyzing Strategic Nuclear Policy* (Princeton, NJ: Princeton University Press, 1990), pp. 116-119.; Jaganath Sankaran and Steve Fetter, "Reexamining Homeland Missile Defense against North Korea," *The Washington Quarterly*, Vol. 43, No. 3 (Fall 2020), p. 56.; and, Ankit Panda, *Congressional Testimony* (Washington, D.C.: Senate Armed Services Committee, June 9, 2021), p. 9, available at <https://www.armed-services.senate.gov/imo/media/doc/Ankit%20Panda.%206.9.21%20testimony1.pdf>.

<sup>59</sup> T.C. Schelling, *Reciprocal Fear of Surprise Attack* (Santa Monica, CA: The RAND Corporation, May 28, 1958), available at <https://www.rand.org/content/dam/rand/pubs/papers/2007/P1342.pdf>.



incentivize U.S. leaders to consider preemption or a first strike, context is key. As multiple recent Department of Defense publications have made clear, U.S. officials believe the most likely scenario for an adversary's nuclear employment is a limited nuclear strike in the context of an ongoing conventional conflict.<sup>60</sup> If the United States received advanced warning or indications that a limited strike was imminent, the possibility of employing an expanded U.S. homeland missile defense system would provide a potentially attractive option to U.S. leaders who wish to avoid the obvious risks inherent in preemptive strikes. In short, an expanded homeland missile defense system would usefully expand the range of options for U.S. leaders by providing a feasible alternative to preemptive strikes – thus potentially lowering the incentives for preemption.

If critics of homeland missile defense still believe there may be temptations to preempt among U.S. leaders, then an additional illustration may be useful. For a scenario like North Korea, even if U.S. leaders were incredibly confident that their improved homeland missile defenses could intercept even the largest North Korean nuclear response that survived a U.S. first strike, that would not diminish U.S. and allied concerns about the amount of damage North Korea could inflict on South Korea or Japan during even the most effective U.S. first strike. Even if one biases the assumptions in a strike plan to improve U.S. performance and decrease North Korean performance, there is still the significant chance that North Korean strikes could kill millions of civilians in allied urban centers. It is highly

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<sup>60</sup> Ash Carter, "Remarks by Secretary Carter to Troops at Minot Air Force Base, North Dakota," *Defense.gov*, September 26, 2016, available at <https://www.defense.gov/News/Transcripts/Transcript/Article/956079/remarks-by-secretary-carter-to-troops-at-minot-air-force-base-north-dakota/>; and, U.S. Department of Defense, *Report on the Nuclear Employment Strategy of the United States – 2020*, op. cit., p. 7.

unlikely that U.S., much less allied, leaders would become cavalier in such a situation. If, even under this “best case scenario” for an effective U.S. first strike, U.S. and allied leaders are still likely to be very apprehensive, then how much *less likely* are they to feel emboldened to conduct preemptive attacks against Russia or China, whose nuclear arsenal sizes and land masses are orders of magnitude greater than North Korea’s?

Additionally, as was recognized even during the Cold War, if the United States did try to pursue an effective first strike force posture, the effort itself would meet all sorts of resistance both politically at home, and among allies abroad.<sup>61</sup> Longtime observers in Russia and China of American defense issues would likely quickly recognize the infeasibility of the United States pursuing a first strike posture, especially given the shifting nature of U.S. political power, transparency in defense spending, and the long lead times for (what would undoubtedly be) multiple massive and new defense programs.

The reasons why even very effective U.S. homeland missile defenses are unlikely to stimulate truly convincing first strike temptations for its leadership are operational and political. Colin Gray cites six operational challenges to a first strike even in the presence of the attacker’s highly effective homeland defenses: the possibility of catastrophic failure of the missile defense system under the most stressing real world conditions; the rate of “leakage” in the missile defense system and the damage caused; unexpectedly effective adversary tactics; local denial of conventional forces; the possibility of a prolonged conflict against an adversary with mobilization capacity; and, finally, the possibility of a “nuclear winter” that ultimately costs more

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<sup>61</sup> Benjamin S. Lambeth, “Soviet Perspectives on the SDI,” chapter in, Samuel F. Wells Jr. and Robert S. Litwak, eds., *Strategic Defenses and Soviet-American Relations* (Cambridge, MA: Ballinger Publishing Company, 1987), p. 54.

than any apparent benefits of a first strike.<sup>62</sup> As Gray notes, a state's leadership may dismiss one or more of these challenges as unlikely, but the combination of all six as real possibilities indicates that even a greatly expanded and effective U.S. homeland missile defense system is unlikely to make the option of a first strike sound very appealing to U.S. leaders.

There is even the near-term prospect that whatever possible incentives U.S. leaders may feel to conduct a preemptive first strike will actually *decrease* over the next decade, *even with the potential addition* of expanded homeland missile defenses. If China's nuclear arsenal grows to a projected 1,000 nuclear warheads by 2030, and if Russia's strategic nuclear arsenal also grows as projected, U.S. leaders will likely realize that even in the event of a first strike against Russia or China, the United States could find itself at a major strategic disadvantage compared to the remaining nuclear-armed adversary, as it seeks to remedy its depleted (or severely damaged) nuclear forces and infrastructure.<sup>63</sup> Given the nature of a "first strike," the ultimate "cannot fail" mission that practically demands redundant and overlapping targeting techniques, the U.S. nuclear arsenal will likely be far smaller after a first strike than before, and, given the lengthy lead times for the production of additional nuclear weapons, the short-term

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<sup>62</sup> Colin S. Gray, "Deterrence, Arms Control, and the Defense Transition," *Orbis*, Vol. 28, No. 2 (Summer 1984), pp. 233-239.

<sup>63</sup> On the projected growth in the nuclear arsenals of China and Russia respectively, see, U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China* (Washington, D.C.: Department of Defense, 2021), p. 90, available at <https://media.defense.gov/2021/Nov/03/2002885874/-1/-1/0/2021-CMPR-FINAL.PDF>; and, Robert P. Ashley Jr., "Russian and Chinese Nuclear Modernization Trends," *DIA.mil*, May 29, 2019, available at <https://www.dia.mil/Articles/Speeches-and-Testimonies/Article/1859890/russian-and-chinese-nuclear-modernization-trends/>.

outlook for deterring the remaining adversarial nuclear power will appear especially bleak. The outlook will appear even bleaker still considering the potential damage that adversary missiles impose should they break through or overwhelm U.S. homeland defenses. Additionally, Russian and Chinese leaders are also likely to increasingly recognize this fundamental strategic dilemma for the United States; although the potential consequences of this are unknown, they are unlikely to be beneficial to the United States.

The second, and perhaps more fundamental reason why improved U.S. homeland missile defenses are unlikely to stimulate first strike incentives is political in nature. As the British strategist Laurence Martin wrote, "A power believing itself, on technical calculations, to have a fairly clean first-strike capability may well refrain from implementing this capability because of moral considerations, because it must always have residual doubts about the calculations and about the operational uncertainties of even the most meticulous force analysis, or (perhaps most fundamentally) because it may lack the political will or compulsion to act even when the risks are low."<sup>64</sup> In short, critics of homeland missile defense often assume that the potential technical capability to conduct a first strike is enough to raise the risks of such a strike, when in reality, there must not only be the political will to back a first strike to raise the risks, but also a political will combined with a high degree of risk-acceptance. Under these circumstances, the likelihood that even greatly improved U.S. homeland defenses significantly bolsters the temptation to conduct a first strike appears remote indeed.

Critics will likely respond, however, that even if U.S. leaders are unlikely to be tempted by the option of a first

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<sup>64</sup> Laurence Martin, "The Determinants of Change: Deterrence and Technology," chapter in, *The Future of Strategic Deterrence Part II*, Adelphi Papers #161 (London: International Institute for Strategic Studies, Autumn 1980), p. 11.

strike, adversaries will still believe the United States is preparing for a first strike – thus increasing their incentive to strike first before they are potentially disarmed. A major unstated assumption in this criticism, of course, is that adversaries will indeed believe they are vulnerable to a U.S. first strike and their threatened response will be ineffective for deterrence. Given the authoritarian nature of the regimes in Moscow and Beijing, there will be, at least, strong incentives for civilian and military officials to tell their respective rulers that their state is not vulnerable to a U.S. first strike – lest the dictator wonder why they have failed to secure the state against a first strike. Indeed, one pertinent historical example illustrates the competing incentives that adversary leaderships will face should the United States seriously pursue an expanded U.S. homeland missile defense system. Then-Soviet leader Yuri Andropov responded to U.S. President Reagan’s announcement of the Strategic Defense Initiative by stating that the United States, in pursuing its missile defenses, was actually pursuing a first strike capability against the Soviet Union; but simultaneously stated that “All attempts at achieving military superiority over the Soviet Union are futile. The Soviet Union will never allow them to succeed. It will never be caught defenseless by any threat.”<sup>65</sup>

This commentary, in fact, highlights what is likely to be the standard reaction by Russia, China, and North Korea to the prospect of significantly improved U.S. homeland missile defenses. Their leaders will likely employ apocalyptic-sounding language, meant to shock and dismay U.S. and allied audiences and erode support for

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<sup>65</sup> Yuri Andropov, as quoted in, Dusko Dodder, “Andropov Accuses Reagan of Lying About Soviet Arms,” *The Washington Post*, March 27, 1983, available at <https://www.washingtonpost.com/archive/politics/1983/03/27/andropov-accuses-reagan-of-lying-about-soviet-arms/67117e3b-ca00-4f1c-9a28-fcaf6fd0c697/>.

these kinds of defenses. There are significant indications that this is Russia's current strategy against the far more limited U.S. homeland missile defense system today.<sup>66</sup> When Russia's and China's coercive strategies for achieving their revisionist aims depend upon missile-based threats against the U.S. homeland, it should be no surprise that they will protest loudly against any threat to their strategy and goals. Critics, at this point, will interject that Russian, Chinese, and North Korean leaders will still have reason to fear these developments even if they do not overtly pursue their revisionist aims – the United States could still attempt a first strike to eliminate a potential threat. In that case, under this assumption, adversary leaderships have strong incentives to strike first before they are potentially disarmed by the United States.

The obvious flaw in the logic of this criticism is that adversary leaderships have very strong incentives *not to attempt* a first strike against the United States – because doing so would turn the *possibility* of suffering existential damage into the *near certainty* of existential damage. The presence of U.S. active defenses does not degrade the deterrent effect of U.S. retaliatory capabilities. That is, when faced with the possibility of a United States with very credible damage limitation capabilities, an adversary certainly *could* decide to strike the United States with everything that it possessed, but what would this accomplish? U.S. forces capable of delivering a devastating response could make the adversary's first strike the worst possible outcome for the adversary. It would, as Otto von Bismarck famously quipped, be a case of committing

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<sup>66</sup> Matthew R. Costlow, *The Folly of Limiting U.S. Missile Defenses for Nuclear Arms Control* (Fairfax, VA: National Institute for Public Policy, October 18, 2021) Information Series #505, available at [https://nipp.org/information\\_series/matthew-r-costlow-the-folly-of-limiting-u-s-missile-defenses-for-nuclear-arms-control-no-505-october-18-2021/](https://nipp.org/information_series/matthew-r-costlow-the-folly-of-limiting-u-s-missile-defenses-for-nuclear-arms-control-no-505-october-18-2021/).

national suicide for fear of death. Historically, the Soviet Union continued to function under a U.S. nuclear *monopoly* from 1945-1949, and clear U.S. strategic first strike advantages from 1950 to the early 1960s, even during times of crisis. China, likewise, has continued to function while at a clear disadvantage relative to the United States for its entire existence as a nuclear power, since 1964. In short, Russia, China, and North Korea have decades of historical experience living under the theoretical possibility of a U.S. first strike without seeing a first strike of their own as a strategic necessity. U.S. defenses to deter and defeat coercive threats would not fundamentally change that circumstance for them.

Critics of U.S. homeland missile defense ultimately fail to account for the range of options available to adversarial states that are faced with a better-defended United States, options beyond surrender or suicide. For instance, the Soviet Union perceived the United States was improving its damage limitation capabilities at an intolerable pace, so it came to the negotiating table and agreed to the ABM Treaty and the Strategic Arms Limitation Talks interim agreement. As additional evidence that U.S. pursuit of missile defense does not preclude arms control agreements, the United States and the Soviet Union agreed to the Intermediate Range Nuclear Forces (INF) Treaty in 1987 while the Reagan administration was still pursuing its vision for the Strategic Defense Initiative.<sup>67</sup> As stated by Colin Gray, "Even if the [Soviet] military balance tomorrow looks likely to be worse than that today, the balance today is most unlikely to offer a good prospect of success. Furthermore, Soviet leaders will have an attractive alternative both to suicide today and inferiority tomorrow – and that is a defensive competition

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<sup>67</sup> Robert Soofer, "Missile Defense is Compatible with Arms Control," *War on the Rocks*, April 29, 2021, available at <https://warontherocks.com/2021/04/missile-defense-is-compatible-with-arms-control/>.

managed by arms control.”<sup>68</sup> The already unlikely prospect of increased adversary incentives for a first strike against the United States falls even further when one considers that Russia and China are both pursuing homeland missile defenses against the United States, even appearing to do so jointly.<sup>69</sup> This provides yet another option that does not involve a first strike against the United States – Russia and China could simply choose to respond by increasing their own missile defense capabilities.

### ***U.S. Homeland Missile Defenses Will Not Be Cost-effective at the Margin***

What are the valid criteria for choosing a homeland missile defense system? A budget planner may say “cost,” a force planner may say “kill probability,” an engineer may say “efficiency,” and a President may say, for domestic purposes, “reliability.” In truth, these and many other criteria impose a set of performance requirements on missile defense in general, but U.S. homeland missile defense in particular. Yet, since 1985, the so-called “Nitze criteria” have been central to the debate on U.S. homeland missile defense. Then-Special Adviser to President Reagan on Arms Reduction Negotiations, Paul H. Nitze proposed three criteria – explained in greater detail in 1986 – for how the Reagan administration would judge whether the technology produced by the Strategic Defense Initiative

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<sup>68</sup> Colin S. Gray, “The Case for Strategic Defence,” *Survival*, Vol. 27, No. 2 (March/April 1985), p. 53.

<sup>69</sup> U.S. Department of Defense, “Chinese and Russian Missile Defense: Strategies and Capabilities,” *Defense.gov*, July 28, 2020, available at [https://media.defense.gov/2020/Jul/28/2002466237/-1/-1/1/CHINESE\\_RUSSIAN\\_MISSILE\\_DEFENSE\\_FACT\\_SHEET.PDF](https://media.defense.gov/2020/Jul/28/2002466237/-1/-1/1/CHINESE_RUSSIAN_MISSILE_DEFENSE_FACT_SHEET.PDF).; and, “Russia is Helping China Build a Missile Defence System, Putin Says,” *The Guardian*, October 3, 2019, available at <https://www.theguardian.com/world/2019/oct/04/russia-is-helping-china-build-a-missile-defence-system-putin-says>.



should be pursued: the missile defenses had to be effective, survivable, and “cost-effective at the margin.”<sup>70</sup> For critics of U.S. homeland missile defense, even if they concede a system could be effective and could be survivable, they retreat to the *primus inter pares* of the criteria, that systems are unlikely to be “cost-effective at the margin.”<sup>71</sup>

I wish to challenge the elevation of this particular criterion, not because economic considerations are invalid – they are wholly necessary and worth significant consideration – but because “cost-effective at the margin” is subjectively applied only to missile defense to the point where critics have largely lost sight of the strategic context. Namely, there is nothing unique about missile defense systems to suggest that the costs to build them in relation to the costs to defeat them should dominate the question of their value to U.S. security interests. In short, questions of cost-effectiveness – like any other criterion – should be

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<sup>70</sup> Paul H. Nitze, “On the Road to a More Stable Peace,” as reprinted in, U.S. Department of State, *Current Policy*, No. 675 (Washington, D.C.: Department of State, 1985), speech given February 20, 1985, p. 2, available at <https://catalog.hathitrust.org/Record/007397611>.; and, Paul H. Nitze, “SDI, Arms Control, and Stability: Toward a New Synthesis,” as reprinted in, U.S. Department of State, *Current Policy*, No. 845 (Washington, D.C.: Department of State, 1986), speech given June 3, 1986, p. 2, available at <https://catalog.hathitrust.org/Record/007408951>.

<sup>71</sup> For criticisms along these lines, see, Andrey Baklitsky, James Cameron, and Steven Pifer, *Missile Defense and the Offense-Defense Relationship*, Deep Cuts Working Paper #14 (Berlin: Deep Cuts Commission, October 2021), pp. 23-24, available at [https://deepcuts.org/images/PDF/DeepCuts\\_WP14.pdf](https://deepcuts.org/images/PDF/DeepCuts_WP14.pdf).; and, Jaganath Sankaran and Steve Fetter, “Defending the United States: Revisiting National Missile Defense against North Korea,” *International Security*, Vol. 46, No. 3 (Winter 2021/22), pp. 68-70.; and, Steven Pifer, “The Biden Nuclear Posture Review: Defense, Offense, and Avoiding Arms Races,” *Arms Control Association*, January/February 2022, available at <https://www.armscontrol.org/act/2022-01/features/biden-nuclear-posture-review-defense-offense-avoiding-arms-races>.

viewed in the broader context of the purposes of a missile defense system, and the value the United States places on its mission.

The following discussion briefly examines the origin of Nitze's "cost effective" criterion for SDI, its unstated assumptions, its seemingly unique application to missile defense, its logical deficiencies, and finally suggests an improved definition of "cost effective" as it relates to missile defense.

*What is "Cost Effective at the Margin?"* When Amb. Nitze first proposed his three criteria for assessing whether a missile defense system should be pursued under SDI in 1985, the program was in its technological exploration phase. In other words, these were criteria for theoretical systems that had not yet been developed. The criteria were meant to, in Nitze's words, "... serve as guidance to all those in the executive branch who would be out talking, lecturing, and testifying on the developments at the Shultz-Gromyko meeting [on nuclear arms control and missile defense]."<sup>72</sup> In 1985, Amb. Nitze explained that: "New defensive systems must also be cost effective at the margin - that is they must be cheap enough to add additional defensive capability so that the other side has no incentive to add additional offensive capability to overcome the defense. If this criterion is not met, the defensive systems could encourage a proliferation of countermeasures and additional offensive weapons to overcome deployed defenses instead of a redirection of effort from offense to defense."<sup>73</sup>

A little over a year later in 1986, Amb. Nitze elaborated on his "cost-effective" criterion for SDI, saying, "... the defensive system must be able to maintain its effectiveness against the offense at less cost than it would take to develop

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<sup>72</sup> Paul H. Nitze, *From Hiroshima to Glasnost: At the Center of Decision - A Memoir* (New York: Grove Weidenfeld, 1989), p. 407.

<sup>73</sup> Nitze, "On the Road to a More Stable Peace," op. cit., p. 2.

offensive countermeasures and proliferate the ballistic missiles necessary to overcome it," adding that such criteria "... has valid application to other military systems as well..."<sup>74</sup> In his memoir, Nitze stated that while he believed U.S. technology was unable to meet the criterion at the time, he defended supporting the criterion by noting that U.S. technology was capable of "unexpected breakthroughs" and such a breakthrough could have provided "negotiating leverage" during nuclear arms control talks with the Soviet Union.<sup>75</sup>

As Nitze notes, critics of the criteria at the time believed his intentions were far from noble and they suspected he hoped to trade away SDI as a serious program in exchange for Soviet concessions - making it appear the United States gained something tangible while giving up undeveloped technology.<sup>76</sup> Indeed, these beliefs appear to have some merit given that in each of his major speeches on SDI, the central importance he places on meeting his criteria is both times connected with the broader prospects for arms control with the Soviet Union.

Whatever the case may be, "cost-effective at the margin" gained an especially hallowed place among critics in the debate over homeland missile defense since it appeared unlikely that the cost of a defensive interceptor would ever drop below the cost of an offensive missile. Thus, even if a missile defense system was effective and survivable - two incredibly important criteria in and of themselves - if the missile interceptors cost more, or were likely to begin an arms race, then the whole system was deemed not worth considering on the grounds of cost and arms race stability.

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<sup>74</sup> Nitze, "SDI, Arms Control, and Stability: Toward a New Synthesis," op. cit., p. 2.

<sup>75</sup> Paul H. Nitze, *From Hiroshima to Glasnost: At the Center of Decision - A Memoir*, op. cit., p. 408.

<sup>76</sup> Loc cit.

*Unstated Assumptions Behind the “Cost Effective at the Margin” Criterion.* For a broader understanding of why “cost effective at the margin” is a poor choice for a criterion with essential veto power over any potential missile defense system, it is useful to state explicitly the unstated assumptions behind the criterion. First, the criterion assumes that the adversary knows, and is confident in its knowledge of, the “true” cost-exchange ratio between its missiles and countermeasures and U.S. missile interceptors. Second, it assumes that the adversary will want to spend the funds necessary to provide some level of confidence in being able to defeat U.S. missile defenses. Third, and more fundamentally, it assumes that the adversary indeed *can spend* more funds on defeating U.S. missile defenses, funds that the adversary may believe are better spent on more pressing needs. Fourth, and perhaps most fundamentally, it assumes that the adversary does not already believe it can defeat U.S. missile defenses with the appropriate confidence level – an assumption that currently contradicts a host of senior Russian statements about their ability to defeat U.S. missile defenses.<sup>77</sup> These assumptions, both individually and collectively, range in credibility from doubtful to, at best, potentially true only in limited scenarios.

*A Criterion Unique to Missile Defense.* Given Amb. Nitze’s comment that “cost-effective at the margin” applies to other major U.S. defense programs, an outside observer might be surprised just how untrue that rings today. While there are certainly debates about the wisdom of investing great deals of money in weapon systems that are particularly pricey given their vulnerability to lower-cost counters, no other major program is judged to be not worth the investment on that reason alone. For example, the lead ship of the Ford-class of U.S. aircraft carriers, CVN-78 *Gerald*

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<sup>77</sup> Costlow, *The Folly of Limiting U.S. Missile Defenses for Nuclear Arms Control*, op. cit., pp. 6-8.

*R. Ford*, cost approximately \$13 billion to procure.<sup>78</sup> While there are no official open-source estimates of what a weapon might cost that could enable Russia or China to sink this aircraft carrier, one can safely assume the figure is far below \$13 billion. Likewise, other major defense programs like the F-35 joint strike fighter, Abrams tanks, and likely even satellites all may theoretically be defeated by less costly counters – that is, they are not “cost-effective at the margin” according to the Nitze criterion.

Yet, the United States still invests massively in these and other capabilities; the question then is: why is the “cost-effective at the margin” criterion given such priority when evaluating missile defenses but not other systems?

There are two likely answers. First, critics of missile defense hope to focus debate on the subject on the one area where they can quantify an expected disadvantage for missile defense – as of today, it does likely cost more to successfully intercept a missile than it does to build and deploy that missile. As is discussed below, however, this observation does not end the debate. That logic, if applied to other defense systems with equal emphasis, would reduce the U.S. military to something not worthy of the name. Indeed, it is obvious that focusing primarily on cost-exchange ratios *for any defense program* is penny-wise and pound-foolish.

A second reason why missile defense critics insist so emphatically on prioritizing the “cost-effective at the margin” criterion to missile defense is that it simplifies (in a manner to their liking) the “equation” of whether a missile defense system is worth the investment. It ignores the primary roles for missile defense, i.e., deterring war and limiting damage should deterrence fail. Missile defense

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<sup>78</sup> Ronald O'Rourke, *Navy Ford (CVN-78) Class Aircraft Carrier Program: Background and Issues for Congress* (Washington, D.C.: Congressional Research Service, March 25, 2021), p. 1, available at <https://crsreports.congress.gov/product/pdf/RS/RS20643/248>.

systems may spend most of their operational life fulfilling one role primarily, i.e., deterrence, and it is impossible to quantify the value of a near-infinite series of non-events.<sup>79</sup> Instead, it is easier for critics of missile defense to ignore the deterrent value of the system and focus on what can, notionally, be quantified: costs of U.S. and adversary equipment. Analysts, as Thomas Schelling noted, simply cannot afford to ignore the “incalculables” just because they cannot be quantified: there is “... a common difficulty in defense planning: budgets need calculations, and the ‘incalculables’, however central they are to strategy, get subordinated to ‘hard facts’, whether or not hardness equals relevance or assumptions are facts.”<sup>80</sup>

*Towards a New Definition of “Cost Effective” for Missile Defense.* The Nitze criterion of “cost-effective at the margin” was clearly flawed at birth, inexplicably elevated above other criteria and applied politically with such force uniquely against missile defenses. How then can one fairly judge the level of investment that is appropriate for missile defense? Clearly the “cost” criterion must be a major factor in U.S. decisions on missile defense – the question is how does the “cost” criterion relate to the other criteria?

At the more fundamental level, which defense objectives does the United States value most? Clearly, the most highly valued objectives are those which, if failed to be achieved, would be the most consequential for the United States. Thus, both the 2018 and 2022 summaries of the *National Defense Strategies* list “defending the homeland”

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<sup>79</sup> This is not to say that during peacetime missile defenses are not fulfilling roles other than deterrence, such as assurance, protection against accidental or unauthorized launches, cost imposition, etc.

<sup>80</sup> T. C. Schelling, *Controlled Response and Strategic Warfare*, Adelphi Papers #19 (London: The Institute for Strategic Studies, 1965), p. 5.

as the number one objective or priority.<sup>81</sup> Any analysis, therefore, of the appropriate criteria for homeland missile defense that does not account for the value of the “defending the homeland” objective is taking the issue out of context. In other words, the appropriate level of investments in time, money, and opportunity costs rise according to the relative priority of the objective. The United States simply ought to be willing to invest more in the most consequential missions than it is in the less consequential missions.

Under the objective of “defending the homeland,” U.S. officials could plausibly decide U.S. policy will be to deter, and if necessary, defeat and limit the damage from coercive missile strikes on the U.S. homeland, no matter the attacker. This objective would necessarily be a high priority, which means relatively more value would be placed on criteria like “effectiveness” and “reliability” than on “cost.” In this sense, the relative priority given to the criterion “cost” only makes strategic sense when properly placed in the context of what is at stake for U.S. policy. Elevating the criterion of “cost effective at the margin” to the level of a veto factor, as the Nitze criteria does in this case, makes little sense when the United States certainly would be willing to bear greater costs for a higher priority objective. Clearly, if the United States intercepted 10 North Korean warheads headed towards major cities in the U.S. homeland, no one with any sense would question the system’s value simply because it cost more, even substantially more, to intercept those warheads than it did for North Korea to build and launch them.

A historical example makes clear the importance of first defining the political objective and then, and only then,

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<sup>81</sup> U.S. Department of Defense, *Summary of the 2018 National Defense Strategy of the United States of America*, op. cit., p. 4.; and, U.S. Department of Defense, *Fact Sheet: 2022 National Defense Strategy*, op. cit., p. 1.

choosing the appropriate corresponding criteria. In a classic RAND report on the subject of defense acquisition, the authors Charles Hitch and Roland McKean employ the example of the allies in World War II studying the various alternatives to sink the most enemy ships at the least cost in man-years of effort. As they point out, choosing the “sinking enemy ships” criterion to measure gain was a poor choice because the real allied objective was to stop enemy ships from achieving their objectives – a mission that does not actually require sinking ships and may be done more cheaply through mine-laying for the same effect.<sup>82</sup> In the same way, the U.S. policy objective should not be “to intercept adversary missiles” *per se*; instead, the objective should be to deter, and if necessary, defeat and limit damage from coercive missile strikes against the U.S. homeland – an objective to which active missile defenses can contribute. Once U.S. policy determines the political goals (deterrence and damage limitation) and the stakes in achieving that goal (very high), only then can one discuss costs, among other criteria, in a realistic and contextually appropriate way.

Thus, the criterion for “cost-effectiveness” for missile defense must encapsulate more than a purely financial comparison of unit costs between a missile and the missile interceptor; an analysis that stopped there covers only the “cost” in the term “cost-effective.” The analysis must answer the follow-on question: effective towards what end? This is the question for policymakers – once they answer that question, then analysts can rationally debate the place for the “cost” criterion.

As a final exercise, it is useful to take the “Nitze criteria” (effectiveness, survivability, and cost-effective at the margin) at face value, eliminate one, and ask whether the

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<sup>82</sup> Charles J. Hitch and Roland N. McKean, *The Economics of Defense in the Nuclear Age* (Santa Monica, CA: The RAND Corporation, March 1960), p. 170.



United States might rationally pursue a system that fulfills only two of the three criteria. The most obvious scenario, as suggested by this analysis, is a system that is effective and survivable, but still costs more to intercept a missile than it does for the adversary to build and deploy the missile. Might it be reasonable to pursue such a system? Even a cursory analysis of the options indicates yes, such a course might be very reasonable given the value of what is being defended.

A missile defense system that could effectively defend itself and defeat 200 adversary missiles, for example, would be of great interest to the United States even if it cost more for the United States to defend against those missiles than it did for the adversary to employ them. After all, at a certain point an adversary must begin to consider if sending more than 200 missiles against the U.S. homeland to overcome the missile defense system risks appearing to the United States to be the opening salvo of a first strike – with the attendant risk that the United States will respond accordingly. Even if critics of missile defense would not choose this option themselves, the point is that the “cost-effective at the margin” criterion for missile defense should not have veto-power over any possible missile defense system.

In conclusion, Carl von Clausewitz stated in his classic book *On War* that war is not simply a contest between physical forces; he in fact derided the idea of reducing war between opponents down to “comparative figures of their strength” as a “kind of war by algebra.”<sup>83</sup> Just as war cannot be simplified to a comparison of forces, neither can missile defense be judged by “cost-effectiveness” alone – a “war by algebra.” Critics of missile defense have yet to explain why such a criterion only seems to apply to missile defenses and not other major defense programs, or why a system that provides very significant deterrence and damage limitation

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<sup>83</sup> Clausewitz, *On War*, op. cit., p. 84.

benefits must always be outweighed by cost-driven considerations alone.

This analysis does not indicate that the “cost-effectiveness” criterion is worthless, far from it; it only seeks to remove that particular criterion from its pedestal as a veto factor in the debate over missile defense. All criteria for a weapon system’s sufficiency, cost-effectiveness included, must relate ultimately to the national objective that the system is designed to support. The supposed inviolability of the “Nitze criteria” has placed unworthy constraints on the U.S. debate about missile defense to the detriment of both policies and capabilities. Instead, U.S. officials must make a clear-eyed assessment of their defense policy priorities, what is at stake in achieving those priorities, and only then determine the criteria for missile defense’s sufficiency.

### *It Will Cause an Arms Race*

There is perhaps no more often-stated, or dubious, criticism of U.S. homeland missile defense than that it will cause an arms race. Critics state that by developing and deploying very effective homeland missile defenses, other states will begin to fear a U.S. first strike capability and will in turn increase their own missile strike capabilities; this then leads the United States to either increase its missile defenses, offensive strike capabilities, or both, in response, thus perpetuating an “action-reaction” cycle (arms race instability).<sup>84</sup> The corollary claim is that if the United States

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<sup>84</sup> For examples, see, Panda, *Congressional Testimony*, op. cit., p. 8.; Baklitsky, Cameron, and Pifer, *Missile Defense and the Offense-Defense Relationship*, op. cit., p. 19.; Daryl G. Kimball, “Missile Defense and the Arms Race,” *Arms Control Today*, December 2020, available at <https://www.armscontrol.org/act/2020-12/focus/missile-defense-arms-race>.; and James M. Acton, “The U.S. Exit From the Anti-Ballistic

refrains from building missile defenses, then other states will likewise refrain from building additional missiles. Both assertions deserve further scrutiny, as does the broader concept of an “arms race.”

This section will therefore focus on three fundamental weaknesses in the arms race criticism: the historical record, its logical flaws, and its broader misunderstanding of how and why states react to the actions of others.

***The Historical Record: Missing Races and Unrequited Restraint.*** The historical record on the existence, or lack thereof, of arms races in response to improved homeland defenses refutes any simplistic notion that for every U.S. defensive action, there will be an equal and opposite offensive action.<sup>85</sup> Before the invention of ICBMs, in the age of intercontinental bombers, the Soviet Union – even though it faced a United States with a credible first strike capability for over a decade and a half – did not embark on a large crash build-up of bombers that could range the United States.<sup>86</sup> U.S. restraint, and eventual elimination of its homeland missile defense capabilities under the ABM Treaty neither induced a similar Soviet reaction in its defense investments (which continued and grew) nor in its offense investments (which continued and grew at an even

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Missile Treaty Has Fueled a New Arms Race,” *Carnegie Endowment for International Peace*, December 13, 2021, available at <https://carnegieendowment.org/2021/12/13/u.s.-exit-from-anti-ballistic-missile-treaty-has-fueled-new-arms-race-pub-85977>.

<sup>85</sup> For additional analysis, see Matthew R. Costlow, “The Missile Defense ‘Arms Race’ Myth,” *Strategic Studies Quarterly*, Vol. 15, No. 1 (Spring 2021), pp. 3-9.

<sup>86</sup> Thomas Mahnken, “The Cold War Arms Race: Introduction,” chapter in, Thomas Mahnken, Joseph Maiolo, and David Stevenson, eds., *Arms Races in International Politics: From the Nineteenth Century to the Twenty-First Century* (Oxford, UK: Oxford University Press, 2016), p. 137.

faster pace *after* signing the ABM Treaty).<sup>87</sup> Finally, even after the United States officially notified Russia of its intention to withdraw from the ABM Treaty in 2001, Washington and Moscow were able to agree to the Strategic Offensive Reductions Treaty (SORT), also known as the “Moscow Treaty” – and, eight years later, the New Strategic Arms Reduction Treaty (New START), which codified lower force levels. The fact that the United States has grown its homeland missile defenses to 44 interceptors today and the Russian strategic nuclear arsenal since 2001 has declined significantly, demonstrates there is nothing inevitable about an arms race caused by U.S. missile defenses.

*The Logical Flaws.* Predictably, critics will then point to China’s apparent reaction to the growth in U.S. homeland missile defenses – as U.S. homeland missile defenses grew numerically, so too did China’s missile arsenal. This, however, is a classic case of confusing correlation and causation. Proponents of U.S. homeland missile defense do not deny that China likely has and will react to U.S. missile defense capabilities at some level, but the evidence that U.S. missile defenses are the causative, or even a primary, motivating factor for changes in China’s nuclear arsenal grows weaker every year. In 2021, non-government analysts publicly discovered three new ICBM fields in China, with each field containing over a hundred ICBM silos – concurrent with an updated assessment from the U.S. Department of Defense that China intends to possess “at least 1,000 warheads by 2030.”<sup>88</sup> Given the rapid shift in policy and the sheer magnitude of China’s preferred force

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<sup>87</sup> David J. Trachtenberg, Michaela Dodge, and Keith B. Payne, *The “Action-Reaction” Arms Race Narrative vs. Historical Realities* (Fairfax, VA: National Institute for Public Policy, March 2021), pp. 21-30, available at <https://nipp.org/wp-content/uploads/2021/04/Action-Reaction-pub.pdf>.

<sup>88</sup> U.S. Department of Defense, *Military and Security Developments Involving the People’s Republic of China*, op. cit., pp. 60, 90.

size, plus the relative projected consistency in U.S. missile defense capabilities, U.S. homeland missile defenses do not appear to be a major factor in China's nuclear expansion. If they were a major factor, one would expect to see, at most, a gradual growth in China's nuclear arsenal that matches expected U.S. advances – not the projected sudden and very rapid growth.

*Misunderstanding the Nature of Arms Competitions.*

The assertion that building improved U.S. homeland missile defenses will likely cause an arms race is based on assumptions, much like the criterion on cost effectiveness, that adversaries will react in the particular manner, and for the reasons, that critics posit. But, as demonstrated above, history demonstrates that opponents have responded very differently from what critics have asserted as being virtually inevitable. In fact, there is nothing either automatic or predictable about what weapons a state develops, why, and when. This dynamic indicates that real world defense acquisition is driven by far more factors than simply reacting to what the United States is doing. Russia, China, and North Korea all have their own domestically-driven considerations (bureaucratic power struggles, funding battles, budget limits, technical capability), ideological considerations (how particular weapons represent the state's status on the world stage, contribution to grand strategy, a weapon's potential propaganda value), and operational considerations (geographic limitations, contribution to short-term military goals, synchronization with other defense programs, infrastructure delays). The fact that Russia and China developed ICBM-centric nuclear arsenals while the United States developed an SLBM-centric nuclear arsenal, and the long-standing difference in overall force size levels, is indication enough that there is no mechanistic relationship between U.S. defense priorities and those of other states.

It is especially important to note in this regard that even if Russia or China directly increase their missile arsenals in response to an expanded and improved U.S. homeland missile defense system, that in and of itself would not negate the value of the system. Since the system would be designed to deter and defeat coercive attacks against the U.S. homeland, larger Russian or Chinese arsenals *per se* would not necessarily demand a further increase the capabilities of the U.S. missile defense system in response. While larger Russian and Chinese arsenals may place greater deterrence requirements on U.S. nuclear forces above the level of coercive attacks on the homeland, the original purpose of the expanded and improved U.S. homeland missile defense system would still stand and be of value. If adversary strategic nuclear arsenals grow in response to expanded U.S. homeland missile defenses, far from a certainty, that would only *increase* the importance of raising the threshold for nuclear war by deterrence threats of punishment *and* defense-based deterrence threats of denial.

The notion that expanded U.S. missile defenses will likely cause an arms race is further discredited when one considers how un-race-like the U.S. defense acquisition process is – with major defense program timelines from design to deployment often measured not in single years, but in decades. An expanded and improved U.S. homeland missile defense system will not happen overnight and given the open nature of U.S. political debate and shifting political power between two major parties, adversaries will likely be able to follow U.S. missile defense developments in near real time as timeline and capability projections shift. In short, this arms dynamic is hardly worthy of the name “race,” which should temper concerns about arms race or crisis instability – there is no need for other states to act rashly when the system in question may be more than a decade, or more, away from a reality.

In conclusion, before submitting to the seemingly appealing logic of “action-reaction” dynamics at play with U.S. missile defenses, U.S. policymakers should consider the range of options available to adversaries beyond “racing,” the historical record that contradicts arms racing theory, and the inherently complicated and multi-factored defense acquisition process that plays out differently in each country according to their unique characteristics. In short, arms racing in response to an expanding U.S. homeland missile defense system is neither guaranteed nor reflective of the value of the system. Additionally, critics of U.S. homeland missile defense, as Herman Kahn pointed out over 50 years ago, “...really cannot have it both ways. They point out, presumably correctly, that on paper it is easy to counter and largely nullify the [thin missile defense] system (subject of course, to the uncertainties I have already discussed). They then argue that the Soviets will be so concerned... that they will react in a serious and dramatic way, accelerating the arms race.”<sup>89</sup> Whether or not Russia, China, North Korea, or some other power will be concerned at the prospect of an improved and expanded U.S. homeland missile defense system, the United States cannot allow an adversary’s potential concerns to have veto power over whether it should pursue a system that, in its net effect, will contribute greatly to its national interests around the world.

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<sup>89</sup> Herman Kahn, “The Case for a Thin System,” chapter in, Johan J. Holst and William Schneider Jr., *Why ABM? Policy Issues in the Missile Defense Controversy* (New York: Pergamon Press, 1969), p. 81.

## **General Principles for an Expanded and Improved U.S. Homeland Missile Defense Posture**

The recommended general principles that follow are meant more to inform policymakers and general readers than specialists in missile defense architecture building. That being said, there are aspects of missile defense technology that are critical to understand if only for the context of policy decisions about what missile defenses may be in the U.S. national interest, and in what priority. There are two key concepts in this regard that are examined below: “layering” of missile defenses, and missile defense “countermeasures.”

“Layering” missile defenses means the United States could deploy missile defense systems optimized to defeat incoming missiles at different stages of their flight – the most common categories of which are “boost phase” (when the missile is ascending shortly after launch), “mid-course” when the ballistic missile has entered outer space, and “terminal” when the missile has re-entered the atmosphere and is close to its target. The advantage of layering missile defenses is that one “layer” of missile defense may defeat the adversary missile at its earliest stages of flight, but if not, then another “layer” of missile defenses (likely another system) may be able to defeat the missile as it passes within range of its interceptors.

“Countermeasures,” also known as “penetration aids,” are devices designed to lower the chance that an interceptor will successfully target and destroy the warhead. These devices can enable a number of tactics such as making all potentially threatening objects look alike to the interceptor and radar (such as “balloons” of equal size and shape) or actively interfering with the interceptor’s kill vehicle’s



sensors (jamming or dazzling).<sup>90</sup> Countermeasures can technically be deployed at any stage of a ballistic missile's flight, but are most likely to be deployed either in the boost-phase or the mid-course since re-entering the earth's atmosphere in the terminal stage could cause the lighter countermeasures to have observably different flight patterns than the heavier (and more likely to be a warhead) objects, on which U.S. missile defenses could then focus. The great advantage of space-based missile defense, therefore, is that such a system could potentially intercept adversary missiles before they deploy countermeasures and multiple warheads.

The most important factor to note in this regard is that the adversary would likely need to include different countermeasures in its missile's payload that are optimized to defeat missile defenses at each separate stage of flight. Including these different types of countermeasures is a cost that may impact the total number of warheads a missile can carry, the missile's range (due to the added weight of countermeasures), and the added complexity of the overall system.<sup>91</sup> In short, cheap and lightweight countermeasures may allow for more warheads per missile, but if the missile interceptors can distinguish the warheads from the countermeasures, then the warheads are more vulnerable. On the other hand, relatively expensive and heavy countermeasures that more accurately resemble a warhead may be more effective in defeating a missile interceptor, but

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<sup>90</sup> For official descriptions of the different types of countermeasures, see, U.S. Department of Defense, Ballistic Missile Defense Organization, *Ballistic Missile Defense: Glossary* (Washington, D.C.: Department of Defense, June 1997), available at <https://webharvest.gov/peth04/20041027220247/http://www.defenselink.mil/specials/missiledefense/glossary.pdf>.

<sup>91</sup> This point was well understood during debates over the Strategic Defense Initiative. See, U.S. Department of Defense, *Defense Against Ballistic Missiles: An Assessment of Technologies and Policy Implications* (Washington, D.C.: Department of Defense, April 1984), p. 11.

take up scarce space in the missile payload, reduce its effective range, and could potentially limit targeting options.

What then might be the advantages of “layering” a U.S. homeland missile defense system in the presence of adversary countermeasures? The advantages appear to be threefold. First, having multiple systems that can potentially make multiple intercept attempts at each stage increases the overall reliability of the system. If, for example, one “layer” of missile defenses experiences some technical problem, whether temporary or longer-lasting, the other “layers” can potentially adapt their tactics to compensate. Second, having multiple “layers” of missile defense increases the resiliency of the overall system, in case one “layer” is degraded due to adversary attacks or tactics. Third, having multiple “layers” of missile defense increases the overall effectiveness of the system by providing multiple intercept attempts at each stage of the target missile’s flight. For example, if there are three “layers” of U.S. missile defense (perhaps boost-phase, mid-course, and terminal), and each layer has a 50 percent chance of destroying the adversary missile per attempt, then there is an 87.5% chance the system will destroy the warhead successfully. If the system provides one more intercept attempt with a 50 percent chance of success, the overall chance for a successful kill increases to 94%. Finally, states that wish to test potentially advanced countermeasures designed to defeat U.S. missile defenses may seek to test them in a realistic environment, potentially providing an opportunity for U.S. intelligence assets to collect information that could be used to make U.S. missile interceptors more effective.<sup>92</sup>

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<sup>92</sup> Steve Lambakis, *The Future of Homeland Missile Defense* (Fairfax, VA: National Institute for Public Policy, 2014), pp. 42-43, available at <https://nipp.org/wp-content/uploads/2021/05/Future-of-Homeland-Missile-Defenses.pdf>.

Thus, having multiple “layers” of missile defense vastly complicates the difficulties for adversary attack planners, and more broadly, force planners, because countermeasures that may perform well in one stage of flight may not perform well in other stages. This point, in fact, was well recognized even during the early days of the Strategic Defense Initiative, as stated by the strategist Fred S. Hoffman:

The existence of several different layers of defense would pose a complex problem to the offense in the design of countermeasures. Approaches that would be most effective against one layer would not in general be effective against others, and the existence of different types of sensors would pose conflicting requirements on decoys or jamming devices. The random attrition that attacking missiles would experience in early layers would make it much more difficult to concentrate forces on specific targets or to coordinate attacks designed to destroy or penetrate later layers. In this respect, a multilayer defense is similar to a counterforce attack in disorganizing structured attacks but superior in that the defense does not have to initiate the conflict.<sup>93</sup>

Given the consequences of a failed coercive attack on the United States, the adversary is likely to err on the side of overestimating U.S. defense effectiveness, which in turn, is likely to increase the overall deterrent effect. Again, quoting Fred Hoffman, “Conservatism is likely to limit their [the

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<sup>93</sup> Fred S. Hoffman, “Imperfect Strategies, Near-Perfect Defenses, and the SDI,” chapter in, Fred S. Hoffman, Albert Wohlstetter, and David S. Yost, eds., *Swords and Shields: NATO, the USSR, and New Choices for Long-Range Offense and Defense* (Lexington, MA: Lexington Books, 1987), p. 208.

adversary's] reliance on clever, relatively cheap, but questionably effective countermeasures."<sup>94</sup>

Then-Director of the Ballistic Missile Defense Organization (later, the Missile Defense Agency), General Ronald Kadish testified in the year 2000, that:

In other words, countermeasures may be easy science on paper, but effective ones are not all that simple to develop and even less simple to implement. The engineering challenges are very substantial. Structural issues can affect range, accuracy and payload, and no nation can place confidence in the effectiveness of its program without testing... In my view, credible, sophisticated countermeasures are costly, tough to develop, and difficult to make effective against our NMD design. Simple, cheap attempts can be readily countered by our system.<sup>95</sup>

In summary, an adversary is unlikely to know all the relevant capabilities of the U.S. missile defense system, and given the consequential nature of a coercive attack on the homeland of the nuclear-armed United States, the adversary is likely to bias its attack estimates in favor of the United States, thus contributing to deterrence.

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<sup>94</sup> *Ibid.*, p. 213.

<sup>95</sup> Ronald T. Kadish, as quoted in, *National Missile Defense: Test Failures and Technology Development* (Washington, D.C.: Committee on Government Reform, September 8, 2000), available at <https://www.govinfo.gov/content/pkg/CHRG-106hrg74374/html/CHRG-106hrg74374.htm>.

## Conclusion

Since the United States has so far eschewed pursuing missile defenses designed to deter and defeat coercive attacks from Russia and China, U.S. deterrence strategy is like a boxer who can punch but is incapable of defending against a punch, choosing to only threaten punishment in response to an attack, without the possibility of protecting against an attack. Given the potential for deterrence failure against the nuclear-armed opponents of Russia and China, not to mention North Korea or some future unknown threat, how much longer are U.S. policymakers willing to tolerate restricted deterrence and damage limitation options?<sup>96</sup>

The prospect of an expanded and more capable U.S. homeland missile defense system will not elevate the United States above the concern of the damage from an adversary's major nuclear strike, but it could contribute to deterring the possibility of a coercive strike, and should deterrence fail, limiting the damage of such a strike. The noted U.S. physicist Freeman Dyson in 1984 elucidated a pithy "live-and-let-live" U.S. defense policy that accounted for the possibility of effective U.S. homeland missile defenses, a policy he acknowledged is based heavily on the writings on Donald Brennan some 20 years earlier: "We maintain the ability to damage you as badly as you can damage us, but we prefer our own protection to your destruction."<sup>97</sup> U.S. Cold War strategists Herman Kahn,

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<sup>96</sup> Payne and Trachtenberg, *Deterrence in the Emerging Threat Environment: What is Different and Why it Matters*, op. cit.

<sup>97</sup> Freeman Dyson, *Weapons and Hope* (New York: Harper & Row Publishers, 1984), p. 274. I fully recognize that Dyson's subsequent explanation of what he believes his policy should entail in terms of force posture differs substantially from what I recommend in this paper. Nevertheless, Dyson's policy phrasing is useful for the greater point that it conveys.

Donald Brennan, and E.S. Boylan stated the same idea in a different way: "The aim of the Defense Department should not be to assure the destruction of some minimum number of Soviet citizens, but rather to save the maximum number of Americans."<sup>98</sup> Or, as Donald Brennan stated individually in 1969, "It is much more a matter of preference and conscious decision whether we and the Soviets wish to spend our strategic-force budgets chiefly to increase the level of 'hostages' on the other side or to decrease our own."<sup>99</sup> Stated more bluntly, Brennan bemoaned that many "... seem committed to support forever a strategic posture that appears to favor dead Russians over live Americans. I believe that this choice is just as bizarre as it appears; we should rather prefer live Americans to dead Russians, and we should not choose deliberately to live forever under a nuclear sword of Damocles."<sup>100</sup>

In summary, there is clearly a growing threat to the U.S. homeland, both in adversaries' capabilities and will, to conduct coercive strikes in furtherance of their hegemonic ambitions and to deter U.S. intervention in support of its allies and partners. Quantitative and qualitative increases in U.S. offensive capabilities are a necessary component in deterring this threat, but these alone are insufficient. The United States has a unique opportunity to shift its missile defense policy away from its near-sole focus on rogue state threats to the U.S. homeland to include the larger, and more consequential, threat of coercive strikes from Russia or China. If the United States adapted its homeland missile defense policy to this emerging reality, it may reap a number of benefits, including: denying Russia's and China's military theories of victory, supporting existing U.S.

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<sup>98</sup> Boylan, Brennan, and Kahn, *An Analysis of 'Assured Destruction'*, op. cit., p. 14.

<sup>99</sup> Brennan, "The Case for Missile Defense," op. cit., p. 443.

<sup>100</sup> Donald G. Brennan, "The Case for Population Defense," chapter in, Holst and Schneider Jr., *Why ABM?*, op. cit., p. 116.

defense strategy, limiting damage without offensive strikes in case deterrence fails, discouraging perceptions that the United States lacks political will, strengthening assurance, and improving crisis stability. While critics will respond with the usual commentary that expanded homeland missile defense will prompt first strike fears, will not be cost-effective, and will increase the chances of arms races, these concerns are not well-founded and ignore the historical record.

Carl von Clausewitz, the great strategist and practitioner of war, stated, "So long as I have not overthrown my opponent I am bound to fear he may overthrow me. Thus I am not in control: he dictates to me as much as I dictate to him."<sup>101</sup> An expanded and improved U.S. homeland missile defense system designed to deter and defeat coercive Russian and Chinese strikes will not, by itself, allow the United States to overthrow any opponent, but it will reduce U.S. dependence on an adversary's restraint during a conflict, provide the United States with greater control over its own destiny, and advance an imposing deterrence threat to dictate caution to any adversary.

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<sup>101</sup> Clausewitz, *On War*, op. cit., p. 98.

## *About the Author*

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While working for the National Institute, Mr. Costlow graduated in 2012 from Missouri State University with an M.S. in Defense and Strategic Studies. His thesis, "Gunboat Diplomacy in the South China Sea" was chosen for publication at the U.S. Air Force Institute for National Security Studies. He is currently a Ph.D. candidate in Political Science at George Mason University.

From 2012-2019, Mr. Costlow worked as an Analyst at National Institute, specializing in many of the same areas he currently writes on. In 2018, he assisted former Senator Jon Kyl in drafting nuclear and missile defense policy recommendations on the bipartisan National Defense Strategy Commission. Before 2012, he researched cybersecurity, emergency management, and foreign airpower acquisition at the Congressional Research Service. Prior to that, he worked at SAIC on federal and state emergency management best practices.

From 2019-2021, Mr. Costlow served as a Special Assistant in the office of Nuclear and Missile Defense policy, Department of Defense. He received the Office of the Secretary of Defense Award for Exceptional Public Service. Mr. Costlow also serves as a Special Advisor to the USSTRATCOM Strategic Advisory Group.





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