

## Neither MAD nor Even: Looking beyond Trump's Missile Defense Review

Benjamin Zala - February 2019

### Summary

- January's long-awaited Missile Defense Review (MDR) unshackles the United States from its prior rhetorical commitments to limiting the size and scope of its defensive system, explicitly references missile threats from Russia and China, and commits Washington to further investment in ground- and space-based technologies.
- The MDR thus eschews the concept of mutual vulnerability that has underpinned nuclear stability, no matter how fragile, since at least the 1960s. Likely consequences include stimulating further Russian and Chinese investment in developing alternative nuclear and conventional offensive weapons as well as their own defensive capabilities.
- The simultaneous development of multiple strategic non-nuclear weapons (conventional programs that can compromise an adversary's nuclear capabilities) will exacerbate the destabilising effects of missile defence technologies. These include conventional precision strike missile technology, anti-satellite and anti-submarine weaponry, and cyber and artificial intelligence technologies.
- Proliferation of missile defence technologies, as well as alternative forms of offense, is highly likely and may see the US advantage erode over time. Nuclear-armed great powers and their allies now face a new era of complex arms racing in which questions of stability and crisis management will be as important to the avoidance of nuclear conflict as they were during the Cold War. However, the nature of the arms race is likely to be significantly different this time.
- The normalisation of missile defence, despite the enduring problems it poses, should be resisted and challenged. A renewed debate over missile defence should focus on the *a priori* question of whether it lowers or raises the risks of nuclear weapons being used, not be limited to questions of financial cost and technical challenges.

## Introduction

Missile defence is [back in the news](#) thanks to the mid-January release in the United States of the Trump administration's long-awaited policy review in this area. Like the product of any such process, [the 80-page document](#) features a series of announcements that have been [debated](#) in defence policy circles. The review promises more ground-based interceptors to augment the 44 already deployed in the United States, upgraded theatre-missile defences able to intercept missiles coming from a longer range, and a greater focus on space-based assets including more sensors and even a study into space-based interceptors. It also, for the first time, [links Chinese and Russian capabilities](#) to the need for missile defence and clarifies that the United States will not accept any limits on the development or deployment of future defences.

What has been overlooked in discussions of the Missile Defense Review (MDR) so far is whether we are still asking the right questions about the role that missile defence plays in reducing nuclear dangers. There are legitimate questions to ask about both the costs of missile defence and the technical feasibility of the task. Yet neither should be the first question to be asked nor should they dominate the discussion (as they have come to do for those who oppose missile defence). If one thinks that missile defence is a worthwhile enterprise, there really is no [price tag](#) that should be too high for protecting innocent populations from incoming missile attacks. Equally, if the system faces technical challenges and would need to defend against difficult targets [designed to evade such a system](#), then this is precisely why more money should be spent on research, development, and testing. If one believes that missile defence makes populations safer, then the best efforts should be made in order to overcome technical hurdles.

Instead, the more important question is whether the deployment of missile defence is advisable in

the first place. Does missile defence stabilise or destabilise strategic relations between nuclear-armed states? Does it make crises more or less likely to occur? Does it make states more or less likely to use nuclear weapons early in a crisis? These are the concerns that should dominate discussions on this issue, but which no longer feature prominently.

## Background

In the United States, missile defence has become almost entirely “normalised” in policy terms. The fundamental question of whether or not it is a good idea to deploy some kind of defences is now very rarely raised in influential defence circles. Advocating for [more or better defences](#) is, while not uncontested, a largely uncontroversial position to adopt in the United States. In most of the countries which host the expanding network of US missile defence sensors and interceptors – including the UK, whose [RAF Fylingdales](#) supports the US homeland defence system – there is very little serious debate on the merits of deploying missile defence. This acceptance of the concept of a nuclear-armed nation building defensive measures without simultaneously giving up its offensive capabilities is both profound and problematic.

It flies in the face of the logic of mutually assured destruction (MAD), the centerpiece of Cold War thinking about managing nuclear dangers from the 1960s onwards. The basic premise was that if both sides in a nuclear standoff could be assured that any nuclear first strike they made would be met with nuclear retaliation from the other side, then each would be deterred from making the first move. It introduced a degree of stability into what would have been an otherwise even more dangerous and volatile relationship.

Relying on deterrence in general, and the condition of MAD in particular, was never a perfect solution. It didn't end the arms race.

Neither side fully embraced the concept and each remained suspicious that the development of any new capability by the other side could provide them with an advantage. Because of this, maintaining MAD helped fuel the arms race by encouraging both sides to build more and more in order to maintain what they perceived as parity. It didn't prevent [dangerous crises and near misses](#) either. And its sustainability was always uncertain. Logics of deterrence are premised on 100% rationality on the part of decision-makers, 100% of the time. And [for many](#), the morality of relying on a mutual suicide pact to prevent indiscriminate killing on a massive scale was questionable to say the least.

All of this is why groups like the Oxford Research Group [worked so hard](#) during the Cold War and beyond to try and move beyond deterrence based on mutual vulnerability and towards actually reducing nuclear stockpiles. In other words, deterrence and disarmament are not necessarily the competing goals that [some paint them as](#). It is possible to view disarmament as the goal to be achieved, while stable deterrence is the necessary (albeit not ideal) condition to be maintained along the way.

This is why certain arms control treaties were negotiated to ensure that MAD was maintained. Most important in this regard was the 1972 Anti-ballistic Missile (ABM) Treaty signed by the United States and the Soviet Union. This treaty effectively banned serious missile defence projects precisely out of a recognition that stability came from a condition of mutual vulnerability.

Even the challenge from the Reagan administration in the early 1980s, when it proposed a new space-based missile defence system, could not overturn the arguments in favour of the stabilising logic of banning missile defence. [Technical difficulties](#) bedeviled Reagan's [Strategic Defense Initiative](#) (SDI) and, at the height of the Cold War, the stakes involved

in unilaterally withdrawing from an arms control treaty like the ABM Treaty were seen as too high for the sake of deploying unproven technology. More importantly, the task of maintaining stability in the US-Soviet relationship was viewed by those able to constrain Reagan as being paramount – instability would produce dangerous crises like those of Berlin and Cuba. Defences, by definition, aim to reduce a state's vulnerability to attack. Therefore, there was simply no way of reconciling missile defence with stable deterrence relationships given that mutual vulnerability had become the foundation stone of the fragile Cold War stability. The only way of shifting this equation would be for adversaries to share the defensive technology with each other. For advocates of SDI during the 1980s, as for advocates of missile defence today, this was simply too difficult a proposition to put serious efforts into.

### **The Missile Defence Debate that We No Longer Have**

Today's problem is that, despite the mainstream embrace of this technology, missile defence still undermines mutual vulnerability and thereby [compromises stability between nuclear-armed states](#). The post-Cold War absence of an intense US-Russian nuclear arms race did not lessen the problem that missile defence caused for stability, if anything it increased it. The fewer the number of weapons to defend against, the more reliable the defences are for their possessor. Nor did advances in missile defence technology make the prospect of deployment less problematic. The more effective defences could be expected to be, the greater the impact on stability between the major powers. If missile defence was problematic during the Cold War, it was particularly so afterwards.

Yet in the late 1990s, and particularly after the 9/11 attacks, when the vulnerability to surprise attack understandably took on a new meaning in the United States, something fundamentally

changed in mainstream policy circles. Suddenly, missile defence was [viewed as a necessity](#). The challenge it posed to deterrence came to be thought of as a minor and manageable problem at best, or something unique to bygone Cold War conditions. When the George W. Bush administration announced its intention to withdraw from the ABM Treaty at the end of 2001 (which came into effect the following year), [the response](#) from both Russia and China was unsurprisingly negative.

Russia, unlike the United States, had not returned to the science of missile defence in a serious way after the Cold War's end. If a missile defence race was back on, Moscow was starting ten yards behind its fellow competitor. The post-Cold War nuclear reductions had been achieved because rough parity had been maintained between both Washington and Moscow. If one side was to break ranks and gain an advantage through deploying defences, [this would be a surefire way of jeopardising this progress](#). How could Russia trust that a future missile defence system would not be used to neutralise its nuclear arsenal? And how could it now simply sit back and not take [countermeasures](#) such as developing new weapons or improving existing ones to try and overwhelm US defences?

For its part, China – which was not a signatory to the ABM Treaty – had maintained a relatively small nuclear arsenal with a stockpile of warheads numbering in the low hundreds ([approximately 235 warheads](#) at the time of the US withdrawal from the ABM Treaty) rather than the tens of thousands held by the United States and Russia. This was what was referred to as its “minimum deterrent.” While China had been focusing on internal economic development throughout the 1980s and 1990s, amongst [other things](#), a minimum deterrent meant minimum spending. But a small arsenal would be made [particularly vulnerable](#) by a functioning missile defence system. The question for policy-makers

in Beijing became, if in a military crisis Washington could rely on its missile defence system to defend against a Chinese retaliatory strike, what would deter the United States from striking first? Now that China had more money to pay for a much larger arsenal, did it still make sense to limit itself to a minimum deterrent governed by a “no first use” posture?

Ever since the system received a green light in 2002, the response from US officials (now across three successive administrations) to questions about missile defence and instability has rested on two arguments. The first is that this would only ever be a [limited system](#) that could defend against a small number of incoming missiles. The second, is that the US intention in building this system is to be able to defend from attacks by “rogue states”, [particularly North Korea and Iran](#).

The problem with both arguments is that they rely solely on promises. Compounding this is the fact that the more technical breakthroughs the United States achieves (more successful tests, better interceptor missiles, better radar and sensor technology, etc.), the greater its ability to rely on this system to defend against a Russian or Chinese retaliation in the event that Washington opted to strike either state first. The [response from Washington](#) to Russian and Chinese concerns was to argue that while deterrence was no longer good enough for the United States to rely on to keep its population safe, trust ought to be enough for Russia and China to rely on for each of them to do the same.

Yet the 2019 Missile Defense Review has expanded both the aims of the system and rejected any limitations that might be imposed on its deployments. In line with previous policy positions, the review not only emphasises the importance of collaborative efforts with partners in order to protect US forces stationed abroad, but also to assist in the tracking of threats to the American homeland. From Japan, South Korea and Australia in the Indo-Pacific, to NATO

partners in Europe, to Israel, Saudi Arabia, Kuwait and the UAE in the Middle East, the document calls for further collaboration and integration. Even India is singled out as a potential missile defence partner.

One of the concerns of states such as China (which has been very critical of missile defence deployments in Japan and South Korea) is that by collaborating with its partners and allies, the United States is slowly building a global missile defence network of integrated radars and early warning systems that can be used to augment and support the defence of the United States itself. [The review](#) states that future policy initiatives intend to focus on “expanding opportunities for collaboration on missile defense programs, deepening interoperability in missile defense systems and operations.” The review makes explicit Washington’s intention to engage in “combined U.S., allied, and partner missile defense training and exercises” and even to “seek to integrate capabilities as appropriate.”

### **The Larger Picture**

The new policy review has arrived at an important time. Today issues of deterrence and stability in relation to missile defence are complicated by two factors: the interaction of missile defence with other strategic non-nuclear technologies; and the spread of these technologies beyond the United States.

#### **i) Implications of Strategic Non-Nuclear Weapons**

The first factor is that missile defence is being complemented by a suite of other offensive forms of strategic non-nuclear weapons that exacerbate the destabilizing effects of missile defence. This includes:

- conventional precision strike missile technology (including but not limited to hypersonic missiles);

- anti-satellite and anti-submarine weaponry;
- enabling software such as elements of both cyber and artificial intelligence (AI) capabilities.

Precision strike missiles (often captured under the moniker of [Prompt Global Strike](#)), can be used to destroy or compromise targets such as missile silos, mobile missile launchers, bomber fleets, submarine bases, command and control centres, and ground stations used to receive and communicate satellite data. These missiles take various forms, but their defining characteristics are that they are fast, precise and rely on conventional (rather than nuclear) explosive power. Much attention in recent years has been devoted to conventionally-armed [hypersonic missiles](#) that can travel at least five times the speed of sound.

[Anti-satellite](#) and [anti-submarine](#) weapons also take various forms. Anti-satellite weapons are designed to blind an adversary in order to compromise their ability to defend against a first strike or retaliate effectively. Such weapons include missiles launched from earth designed to hit satellites directly (a mission made easier by breakthroughs in missile defence technology) as well as non-kinetic weapons such as the use of directed energy or lasers to interfere with a satellite’s imaging sensors. Anti-submarine weapons are almost as old as submarines themselves but in the past have relied mainly on ships and aircraft. Recent advances in both underwater drone technology as well as in sensor techniques have raised the possibility for some states (essentially those with the noisiest submarines such as [China and India](#)) of having their underwater nuclear “ultimate deterrents” found and compromised. This need not involve sinking a nuclear-armed submarine. Jamming the communications capabilities that receive firing orders or confusing their targeting systems would be sufficient.

In addition to these weapons systems, advances in big data, artificial intelligence and quantum computing hold the promise of enhancing and enabling these forms of attack including assisting in finding and locating targets. These technological enablers are still being developed which makes rapid advances by one state highly problematic for others. A [recent report on AI and nuclear stability](#) by the RAND Corporation argued that “Even if AI only modestly improves the ability to integrate data about the disposition of enemy missiles, it might substantially undermine a state’s sense of security and undermine crisis stability.”

On their own, none of these technologies are game-changers. Yet there is no reason to think that they would only ever be used in isolation rather than in combination. And given that they are all conventionally (not nuclear) armed weapons, doing so would not require breaking the taboo against the use of nuclear weapons. When combined, these technologies may offer their possessor the possibility of a disarming first-strike capability without having to cross the nuclear threshold.

The more effective and reliable the offensive weapons become, the more reliable a missile defence system, even with a [less than perfect testing record](#), is likely to become. Defending against an adversary’s entire arsenal may be too much to ask of a missile defence system and therefore reduce its perceived utility. However, if most of that adversary’s arsenal could be compromised in a set of first strikes, then the missile defence system only needs to soak up whatever is left.

Importantly, the combination of these weapons does not have to actually compromise the reliability of an adversary’s arsenal for them to have a strategic impact. The perception on the part of that adversary that they might do is enough to create dangerous “[use it or lose it](#)” scenarios during a time of heightened tension or

in the early stages of a [conventional military conflict](#).

## ii) **Proliferation of Missile Defence and other Strategic Non-nuclear Technologies**

The second factor that complicates this picture is that while the United States has led both the technological development of these weapons and the associated political push to abandon mutual vulnerability as the cornerstone of nuclear stability, others are now following suit. Washington, Beijing, Moscow and New Delhi all have active missile defence, conventional strike systems, anti-satellite and anti-submarine systems as well as offensive cyber programmes.

With the spread of these technologies to Washington’s adversaries as well as its allies already underway, we need a better understanding of the strategic interaction between these technologies and nuclear weapons. While the Trump administration’s Missile Defense Review rightly acknowledges the growing importance of hypersonic missiles, anti-satellite and missile defence capabilities in the hands of countries such as China and Russia, there are few signs of a well thought-through strategy in the administration’s response other than to [throw more money](#) at the problem.

The review notes what the United States alleges are Russian violations of the [1987 Intermediate-Range Nuclear Forces](#) (INF) Treaty (including the development of an intermediate-range ground-launched cruise missile). These Russian weapons are of course, at least in part, aimed at overwhelming the existing US missile defence system. Yet the response from the Trump administration is to plan more and better defences (as the review puts it, “invest in advanced technologies to meet the increasingly complex threats posed by larger missile inventories and improved countermeasures”) to

regain the advantage and to unilaterally withdraw from the INF Treaty.

What strategists refer to as the “[fallacy of the last move](#)” (the mistaken assumption that one side will achieve dominance through technological superiority without being countered by the other side) is unfortunately alive and well in official thinking in Washington on missile defence. The abandonment of the INF and the doubling down on missile defence by the United States raises difficult dilemmas for Washington’s [European allies](#) in terms of how to position themselves in an (almost) post-arms control world. The prospect of [a new form of global arms race](#), in which nuclear and strategic non-nuclear weapons are entangled with one another and multiple players drive the spiraling tit-for-tat moves and counter-moves, now looms on the horizon.

### Conclusion

At a time of [growing concern](#) about the [future of arms control](#), [further nuclear reductions](#), and [crisis diplomacy](#), maintaining a focus in policy discussions on the challenges to stability in nuclear-armed relationships has become more important than ever. The normalisation of missile defence, despite the enduring problems it poses, should be resisted and challenged.

Questioning a policy that enjoys widespread support is not an easy task for any analyst, civil servant, or engaged citizen. Yet posing difficult questions at least holds the potential for maintaining attention on the most important issues – in this case, the abandonment of mutual vulnerability as the cornerstone of stable deterrence without replacing it with something else.

Fostering a renewed debate over missile defence, amidst the growth of [other strategic non-nuclear weapons](#) and their spread beyond the United States, should be encouraged by those who remain concerned about reducing the dangers of nuclear war. This debate should not be limited to questions of [financial cost](#) or the [technical challenges](#) of “hitting a bullet with a bullet.” A renewed missile defence debate should instead focus on the first, and most important, question that any policy initiative that relates to nuclear weapons should be subjected to: does this policy lower or raise the risks of nuclear weapons being used? It is a simple question but one that appears to have been drowned out in relation to the discussion around missile defence. The Trump administration’s policy review is a reminder that the neglect of this question has not diminished its importance.

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