

Incorporating Missile Defense in Strategic Arms Control

By Greg Thielmann

For some six decades, strategic ballistic missile defenses have played an integral role in the evolution of the strategic relationship between Moscow and Washington. Throughout this time, advocates of such defenses have depicted a future in which these weapons would reduce the risks of nuclear destruction. Yet the historical reality belies such predictions. For thirty years, the 1972 Anti-Ballistic Missile (ABM) Treaty helped moderate pressures to expand nuclear arsenals. Following U.S. withdrawal from the treaty in 2002, the absence of constraints on these systems has made it more difficult to achieve stabilizing reductions in strategic offensive forces. With the world now on the cusp of a new nuclear arms race, these difficulties will increase. Indeed, as former Secretary of Defense William Perry and co-author Tom Collina have concluded in their 2020 book *The Button*: “It will be next to impossible to continue with significant [nuclear] arsenal reductions without real limits on strategic missile defenses.”¹ It is therefore imperative that strategic missile defense limits be incorporated directly into the structure of strategic arms control – for example, by developing an aggregate ceiling on offensive and defensive weapons.

Mission unaccomplished

Moscow has been relatively consistent in its rationale for developing strategic missile defenses. In contrast, Washington has been all over the map. Yet, there are two striking similarities in the two countries’ experiences with strategic missile defenses: Both have persisted in pursuing missile defenses, which are now simultane-

ously inhibiting negotiating efforts to reduce the likelihood and size of nuclear-armed ballistic missile attacks while also failing to provide reliable protection against such attacks if they were to occur.

Russia’s ABM – constancy in pursuit of a futile mission. For the Soviet Union (and later, Russia), the ABM mission has been primarily to defend the Kremlin leadership and the national capital area from ballistic missile attack by any enemy. The Moscow-centric and nuclear-armed ABM system may have initially convinced Kremlin leaders that they would be partially protected from a limited nuclear attack. However, the system’s only practical impact on the country’s principal adversary was to incentivize qualitative and quantitative improvements in U.S. strategic offensive weapons, ensuring that neither Moscow nor the country it ruled could survive an all-out nuclear exchange.

America’s ABM – an inability to decide on which futile mission to pursue. For the United States, the mission of strategic missile defense systems has shifted radically over time – alternating the countries identified as the source of the missiles needing to be intercepted, the type of targets in the United States to be protected, the kind of technology and geographic basing of the systems to be employed, and the degree of success judged to be cost-effective.

U.S. ABMs were first developed in the early 1960s to protect American cities from the

emerging threat of Soviet intercontinental ballistic missiles (ICBMs). The chief mission was changed a few years later under President Lyndon Johnson to protecting American cities against the much more limited threat expected from Chinese ICBMs.

In accordance with the mutual limitations agreed to in the 1972 ABM Treaty (amended in 1974), the administration of Richard Nixon chose to protect one ICBM field in North Dakota against Soviet ICBMs with less than 100 nuclear-tipped Spartan and Sprint interceptors. In 1975, the U.S. Congress voted to dismantle unilaterally all of the newly deployed ABM interceptors and their associated large phased-array radar (LPAR).

For the next eight years, Congress provided robust funding for ABM research and development (R&D) in an effort to stay on top of advances in relevant technology, but declined to deploy strategic missile interceptors or battle management radars.

In 1983, President Ronald Reagan announced an ambitious new objective – to establish an effective defense against any strategic ballistic missiles, rendering them “impotent and obsolete.”²² The perceived imperative of Reagan’s Strategic Defense Initiative (SDI) – keeping all ABM options open – prevented him from concluding the Strategic Arms Reduction Treaty (START I) during his second term.

Reagan’s successor, President George H. W. Bush, moved forward in 1989 on a less grandiose version of SDI, envisioning the eventual deployment of both space- and ground-based interceptors, aimed at protecting against lesser

numbers of ballistic missiles of various ranges. But by the end of Bush’s single term in January 1993, the Cold War was over; he had signed two strategic arms reductions treaties with Moscow (START I, in 1991 and START II, in 1993), leaving the ABM Treaty intact.

President Bill Clinton authorized development of a National Missile Defense (NMD) system to protect the entire country against anticipated future ICBM threats from newly-emerging nuclear powers or an accidental or unauthorized launch by Russia or China. Ultimately, Clinton decided that strategic missile defense technology was not yet sufficiently reliable to justify deployment of a nation-wide system, which would have been noncompliant with the ABM Treaty.

In late 2001, President George W. Bush reversed Clinton’s decision against proceeding to deployment of nation-wide strategic missile defenses, announcing that the United States would withdraw from the ABM Treaty in six months. He also promised to move quickly to install the first of 26 Ground-based Midcourse Defense (GMD) interceptors in Alaska, supported by a sea-based X-band radar (SBX-1). The system’s principal mission, as under Clinton, was to protect the U.S. mainland from near-term threats of ICBM attacks by rogue states.

During the two terms of President Barack Obama, the number of GMD interceptors based in Alaska and California increased to 44. Obama cancelled the bilateral arrangements Bush had made with the Czech Republic and Poland to station a strategic missile defense system in Europe to protect the U.S. mainland against long-range missile threats from the Middle East.

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Obama subsequently won NATO support for the European Phased Adaptive Approach (EPAA), which involved deploying Aegis SM-3 theater ballistic missile interceptors, first on U.S. warships and then to “Aegis Ashore” bases in Romania and Poland. These non-strategic missile defense systems, and the Phase 3 SM3-IIA being co-developed with Japan for sea-based deployments in Asia, remained explicitly focused on protecting against North Korean and Iranian ballistic missiles rather than those of Russia and China.

Back to the Future with President Trump

The administration of President Donald Trump returned the United States to a more expansive mission orientation for missile defenses, declaring that these systems would be designed to defend against all incoming missiles, including those of Russia and China. After withdrawing from the 1987 INF Treaty, Trump directed that U.S. theater ballistic missiles be tested against ICBM targets so that they could be incorporated into layered defenses against strategic attack. In implicit homage to Reagan’s SDI vision, President Trump also announced in 2019 his intention to build a new, space-based missile defense system in coming years. This commitment followed his creation during the previous year of a new military branch, the U.S. Space Force.

Although Trump’s 2019 Missile Defense Review continued to identify defense against rogue state ICBM attacks as the priority mission, it also promised to “aggressively pursue a variety of...means to counter regional ballistic missiles...from whatever source.”³ This broadening of mission, in comparison with past policy document language, did not go unnoticed by close observers of missile defense developments, like Tom Karako of the

Center for Strategic and International Studies: “For the first time, [Trump’s Missile Defense Review] puts Russia and China in the same sentence as missile defenses, making explicit what has hitherto been implicit.”⁴

Moreover, President Trump’s comments in releasing the document seemed to state clearly that incoming Russian and Chinese strategic missiles would be included as targets of U.S. missile defenses: “Our goal is simple: to ensure that we can detect and destroy any missile launched against the United States – anywhere, anytime, anyplace.”⁵

The Trump administration has shown no willingness to consider the interrelationship between strategic offenses and defenses. To head off any expectations that such consideration would be granted in the future, Marshall Billingslea, Trump’s Special Presidential Envoy for Arms Control, testified to Congress in July 2020 that “the President has made clear he will not accept limitations on missile defense.”⁶

Such comments appear oblivious to the psychology of the United States’ potential negotiating partners, and blind to the cost-effectiveness attributes of potential programmatic alternatives. Even the intensified arms control discussions with the Russians in recent weeks show little indication that the Trump team is seeking a negotiating outcome offering mutual benefits.

For Russia and China, U.S. Missile Defenses have always been aimed at them

Watching the ever-changing justifications for U.S. strategic defenses and U.S. withdrawal from the ABM Treaty had long contributed to skepticism in Moscow and Beijing about the avowed “rogue state” rationale animating U.S.

missile defenses in the Post-Cold War era. In addition to doubting the speed Washington attributed to ICBM development by these states, there was incredulity about the notion that any rogue state leader would order a nuclear attack on the United States, given the suicidal nature of such an action. In light of U.S. refusal to negotiate any limits on strategic missile defense, it seemed much more plausible that the United States was spending tens of billions of dollars to increase protection against the only two countries posing an existential threat.

Following the end of the Cold War and the collapse of the Soviet Union, *Russia* appeared ready to undertake the significant limitations specified in START II, including a ban on ICBMs with multiple, independently-targeted re-entry vehicles (MIRVs). But this willingness was conditioned on the United States continuing to abide by the ABM Treaty. Instead, the new millennium brought U.S. withdrawal from that treaty, deployment of U.S. strategic missile interceptors in Alaska and California, and multiple deployments of U.S. theater missile interceptors on Russia's periphery, magnifying unease in Russian defense circles.

In addition to the geographic retreat of its western line of territorial defense, Russia had suffered a lost decade of investments in new strategic offensive forces. Although oil- and gas-fueled economic recovery eventually revived investment revenue, and the 2010 New Strategic Arms Reduction Treaty (New START) had stabilized the bilateral strategic offensive balance, these developments did not remove worst-case Russian worries that U.S. advances in missile defenses could conceivably affect the future force balance.

It is likely that U.S. refusal to constrain strategic defenses played a significant role in

President Vladimir Putin's rejection of President Barack Obama's 2013 offer to negotiate an additional one-third reduction in strategic offensive forces. It also clearly spurred Russian efforts to develop the new types of strategic weapons that Putin ostentatiously presented in March 2018, explicitly stressing the capabilities of these *Wunderwaffen* to defeat U.S. missile defenses. Russia's persistent attitude toward including missile defenses in offensive arms control was recently articulated by Security Council Secretary Nikolai Patrushev: "...we are adamant that achieving viable agreements on nuclear missile issues without factoring in the U.S. missile defense is impossible."⁷

The decision of *China* to expand its modest nuclear arsenal was also influenced by U.S. efforts to modernize its own nuclear forces absent ABM Treaty constraints. According to the Defense Intelligence Agency, China's nuclear arsenal is now expected "to at least double in size" within ten years.⁸ Recent efforts by the Trump administration to induce China to join the United States and Russia in strategic arms control negotiations have been strongly rejected by Beijing.

China certainly took notice of the basing location chosen for U.S. strategic missile defense interceptors and radars. Although selected by Washington with the North Korean threat in mind, the GMD base in Alaska also happened to be directly underneath the U.S.-bound ICBM trajectory of the only reliable means China has had to retaliate effectively against a U.S. first-strike. According to Tong Zhao of the Carnegie-Tsinghua Center for Global Policy: "Beijing worries that U.S. missile defenses could potentially intercept the small number of Chinese nuclear weapons that might survive preemptive U.S. nuclear and non-nuclear attacks on its nuclear forces."⁹

Not surprisingly, Beijing exhibited a strong negative reaction in 2017 to the news that an AN/TPY-2 missile defense surveillance radar would be constructed in South Korea as part of U.S. THAAD theater missile defense deployments. At this location, the radar has the technical potential of being reorientated to provide advanced targeting information on Chinese ICBM launches for use by GMD interceptors in Alaska. The radar construction prompted Beijing to retaliate economically against South Korea – a convincing measure of China’s concern.

An Inflection Point for Strategic Arms Control

Given the reality of the stalemate we confront in reducing global nuclear risks, it is vital to take a fresh look at how a new U.S. administration could transform the role of strategic missile defenses in security policy.

The starting point should be an objective analysis of the 1972 ABM Treaty. Support for the treaty’s ban on nation-wide missile defenses had already been weakened by advances in sensor technology by the time the Bush administration announced withdrawal from the treaty in 2001. The treaty’s rationale had also been undermined by the re-emergence of deep-rooted and persistent strains of American political culture – specifically, the public’s readiness to view any “defensive” system as inherently moral, and the public’s faith in Americans’ ability to overcome any technical challenges.

Spurred by alarmist projections of future ICBM threats from rogue states,¹⁰ the United States followed up on ABM Treaty withdrawal with major investments to build a system of strategic missile defenses, hoping to protect the entire U.S. mainland from limited attacks. Yet,

testing to date provides ample evidence of the clear advantages that physics confers on those who wield the nuclear sword. Twenty years of GMD interceptor flight-tests have produced a dismal success rate of 55%, even though most of these tests involved neither ICBM target vehicles nor penetration aids – posing less of a challenge than the interceptors would face in real-world scenarios.

Furthermore, there is no evidence that strategic missile defenses have had any impact on achieving U.S. nonproliferation objectives or that they would even play a decisive role in dissuading a rogue state leader from attacking the United States with nuclear weapons. It is the overwhelming superiority of U.S. offensive forces (primarily non-nuclear), buttressed by economic power, which provides the deterrent value in a crisis. Ironically, U.S. strategic missile defenses have a decidedly negative impact on efforts to constrain the nuclear forces of the most powerful potential adversaries of the United States.

There is likewise little reason to believe that basing missile defenses in space would offer an end-run around technological hurdles. An opposite (and more persuasive) conclusion was reached in a 2018 report on space-based missile defense of the Union of Concerned Scientists: “It’s enormously expensive, easily defeated and fundamentally destabilizing.”¹¹

Indeed, the evidence is overwhelming that Russia, China, and the United States will each continue to successfully and affordably surmount the challenges of penetrating strategic missile defenses. Whether through simple decoys, more sophisticated penetration aids, maneuvering warheads, or hypersonic glide vehicles, the major nuclear powers can be expected to maintain the credibility of their deterrents against strategic attack.

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Nonetheless, there remains considerable enthusiasm for strategic missile defenses within the Republican Party and among the U.S. electorate. It is therefore unrealistic to imagine a resuscitation of a ban on nation-wide strategic missile defenses. But it is conceivable that a Biden administration, supported by a Democratic Congress, could bring missile defense back into negotiations on strategic arms control. If U.S. political culture and Russian defense strategists will not accept the ultimate futility of “defending the homeland” against strategic missile attack, then policy-makers should at least seek to ensure that a system of limited defenses can be sustained without stimulating an increase in the existential threat posed by the opposing side.

Building on a solid Foundation from the Past

During its 30-year reign, the ABM Treaty fostered political stability between the world’s most powerful states by facilitating consequential arms control negotiations – first limiting the two countries’ enormous nuclear arsenals (through the SALT I Interim Agreement) and then reducing them (through the START I Treaty). The treaty successfully surmounted serious compliance issues. It provided a forum for negotiations, which removed potential diplomatic and legal obstacles to deploying theater ballistic missile defense systems used to counter the conventional threats to U.S. forces and allies posed by rogue state ballistic missiles.

- To avert expensive, dangerous, and ultimately futile excursions into new types of strategic defenses, it will be important to salvage successful provisions from the ABM Treaty, which placed qualitative and quantitative limits on the means of intercepting ballis-

tic missiles. A new arms control framework could borrow on some explicit provisions from that past treaty – for example, those banning the basing of strategic missile defense interceptors at sea or in space, and banning the testing of strategic missile defense systems “based on other physical principles.” However improbable the futuristic schemes of weapons designers, allowing them free rein would give flight to worst-case analyses and incentivize expansion rather than reduction in existing nuclear arsenals.

- A new arms control framework could revive the ABM Treaty’s numerical limit (as amended in a 1974 Protocol) of 100 interceptors and launchers – without requiring any alteration in existing or currently authorized future force levels. Re-instating such a limit appears plausible given that Russia currently deploys 68 A-135 (ABM-3 Gazelle/53T6) missile defense interceptors and launchers – and the United States currently plans a total of 64 GMD interceptors and launchers.
- The ABM Treaty’s technical demarcation between (limited) strategic and (unlimited) theater missile defense interceptors, which was negotiated in 1997, would provide a constructive starting point for negotiations, but would probably require adjustment. There will be continuing pressure to increase the quantity and capabilities of U.S. Aegis SM-3 and THAAD theater interceptors. Such pressure could serve as leverage to achieve other negotiating objectives in future talks – including, potentially, those with China. But successful negotiations will require compromise.

- The ABM Treaty's verification provisions could be adapted and expanded, including, inter alia, establishment of:
 - A consultative body like that treaty's Special Consultative Commission, which would serve as a forum for resolving compliance issues;
 - A requirement that the parties exchange plans for the quantity, characteristics, and locations for future deployments of strategic missile defense interceptors;
 - A requirement for advance notifications of both strategic and theater¹² ballistic missile interceptor flight-tests;
 - A quota for regular visits to strategic missile interceptor testing and deployment sites, and to associated strategic missile radar sites;
 - Triggers and rules for challenge inspections.

A new Departure

One innovation beyond prior precedents would be especially critical for ensuring that the net effect of strategic arms control is a reduction of nuclear risks and a saving of national resources: An overall aggregate limit should be established, which includes strategic ballistic missile defense interceptors as well as operationally deployed strategic warheads and delivery vehicles.

Assuming that the operational employment of ballistic missile interceptors would involve launching more than a single missile against each incoming target, a defensive/offensive missile ratio could be negotiated for the aggregate limits. For example, if that ratio were 2:1 (defense missile interceptors:strategic missile warheads) within an aggregate limit, two defensive interceptors would offset one of-

fensive delivery vehicle. If the aggregate limit were 1000 (with a ceiling of 100 missile defense interceptors), a party deploying 50 strategic defense interceptors, each with a single kill vehicle, would be allowed to deploy no more than 975 offensive warheads. If the defensive interceptor count rose to 100, the deployed offensive warhead allowance would fall to 950.¹³

Creating this kind of overall treaty structure would reverse the existing relationship between offenses and defenses. Instead of undermining opportunities for reducing offensive arsenals, increasing the number of deployed interceptors would decrease the slots for offensive weapons, and vice versa. An overall offense/defense aggregate would thereby install a stabilizing dynamic into the strategic treaty realm – creating a greater incentive for defense planning officials and Members of Congress to consider net impacts of expanded capabilities in separate sectors of development. It would also create a mechanism for addressing limited third-country nuclear threats with less risk of upending further progress in reducing the world's largest nuclear arsenals.

An objective look at post-ABM Treaty history reveals that introducing improved and unconstrained U.S. strategic defense capabilities has ultimately encouraged Russia to compensate with strategic offensive improvements, resulting in a net loss to mutual security rather than a net gain. A treaty structure, which inserted a “virtuous” dynamic into defense planning would provide greater predictability, restraining costs and opening up new opportunities for reducing nuclear arsenals.

Much time has been lost since Washington and Moscow stopped talking about strategic defense arms control. It is high time to catch up – not just in the self-interest of the two

superpowers with most of the world's nuclear weapons, but also in the interest of the other state directly affected by this issue – China. Creating a U.S.-Russian strategic relationship that constrained the growth in defensive systems would also remove pressure on China to

enhance its strategic offenses. It would also offer favorable incentives and useful precedents in the not-too-distant future when Beijing comes to recognize its own interest in pursuing strategic arms control solutions to enhance its national security.

Endnotes

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- 4 Tom Karako, “The 2019 Missile Defense Review: A Good Start,” *Missile Threat: CSIS Missile Defense Project*, January 17, 2019.
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- 12 Any verification provisions involving theater missile interceptors will have to be the subject of close consultations with U.S. allies.
- 13 An alternative elaboration of this concept was discussed by Tong Zhao in a March 2020 IFSH Research Report. Zhao, Tong: *The Case for China’s Participation in Trilateral Arms Control*. In: Ulrich Kühn (Hg.): *Trilateral Arms Control? Trilateral Arms Control? Perspectives from Washington, Moscow, and Beijing*. Hamburg (IFSH Research Report, #002), pp. 80-81.

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