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Threat Assessment Brief
Analysis on Effective Policy Responses to Weapons-Related Security Threats

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Strategic Missile Defense: A Threat to Future Nuclear Arms Reductions?

As the New Strategic Arms Reduction Treaty (New START) and the Phased Adaptive Approach for U.S. missile defenses in Europe are implemented, the threat to international stability from the U.S.-Russian dispute over missile defense is entering a dormant phase. U.S. strategic missile defenses, however, still lurk as a potential spoiler for achieving future reductions in offensive nuclear weapons. Whether or not such defenses prove capable of intercepting the limited number of long-range missiles that Iran and North Korea may deploy over the next 10 years, strategic missile interceptors are fully capable of shooting down prospects for further cuts in U.S. and Russian nuclear weapons. In order to continue shrinking Cold War nuclear arsenals and to prevent nuclear proliferation and nuclear terrorism, this challenge must be confronted and overcome.

HIGHLIGHTS

- The United States successfully rebuffed Russia's attempts to incorporate limits on U.S. missile defense plans in New START and won Moscow's acknowledgment that current U.S. missile defenses do not threaten Russia's deterrent.

- President Barack Obama's decision to extend the time frame for introducing strategic missile defenses to Europe helped convince Russia it could accept New START reductions in strategic offensive forces without jeopardizing Russia's nuclear retaliatory capability.

- New START and renewed efforts to cooperate with Russia on missile defense have mitigated long-running tensions over strategic missile defenses, but future, unconstrained strategic U.S. missile defense deployments could make Russia increasingly resistant to further reductions in offensive nuclear forces.

- U.S. plans to deploy near the western borders of the former Soviet Union by 2020 interceptors with capabilities against long-range ballistic missiles are likely eventually to confront Washington with a range of difficult choices for nuclear arms control policy:

  - o Continue exempting strategic missile defense from treaties, which may cause Russia to do what the United States would do in its place — avoid limits on strategic offensive forces to ensure that opposing missile defenses could be defeated;

  - o Develop extensive means of strategic missile defense cooperation between the United States, NATO, and Russia; and/or

  - o Accept modest constraints on strategic missile defenses, to avoid a countervailing buildup in Russian offensive forces.

- Although domestic political considerations may point toward the first choice, nonproliferation and stability objectives argue for the latter. It is an open question whether missile defense cooperation alone can bridge this divide.

Background: The Offense-Defense Interrelationship

The nuclear age carries a consistent core message concerning the interrelationship between strategic missile offense and strategic missile defense: a defensive buildup creates pressures for offensive countermeasures, and in such a competition, offenses are likely to cancel out the intended benefits of the defenses. The offensive response occurs not only because of the obvious need to compensate for the potential degradation in target coverage that could result from the other side's ability to intercept incoming warheads, but also because the missile defense programs tend to arouse suspicions about motives. Freeman Dyson, renowned nuclear physicist and mathematician, alluded to this phenomenon in a 1964 commentary on the Soviet anti-ballistic missile (ABM) program: "Hitherto the American people [have] always viewed the Soviet ABM program as intensely threatening to our security. The fear of Soviet ABM[s]…seems to be more deeply felt than the fear of Soviet offensive forces.… This logic has led many people in the U.S. Senate and elsewhere to consider the Soviet ABM program as primarily intended to allow the Soviet Union to attack the U.S. without fear of retaliation."[1]

A contemporary reference to the offense-defense interrelationship can be found in September 2010 remarks of U.S. Strategic Forces Commander Gen. Kevin Chilton: "As we develop missile defense capability, we don't want to develop it in such a manner that the Chinese would feel that their assured response, their deterrent, is put at risk, because that would encourage them to build more intercontinental missiles or capabilities."[2]

Although many missile defense advocates contend that missile defenses discourage the proliferation of offensive missiles, empirical evidence points to the opposite conclusion. Missile defense systems are more likely to encourage opponents to build up their offensive missile forces.

In the case of U.S.-Soviet relations during the Cold War, U.S. fears about Soviet ABM systems helped stoke the large increase in U.S. ballistic missile warheads during the 1960s and 1970s. It was only after the 1972 ABM Treaty capped strategic missile defenses that the path toward eventual reductions in offensive warhead totals during the 1980s and 1990s was opened.

The pattern is similar in the post-Cold War era. In spite of $10 billion spent each year on U.S. missile defenses during the last decade, in part to discourage ballistic missile proliferation, neither Iran nor North Korea was dissuaded from continuing to expand and improve its offensive missile arsenal.

One of the largest tactical ballistic missile buildups in history occurred in China opposite Taiwan, even as Taiwan deployed Patriot anti-tactical ballistic missiles in response. Likewise, the ballistic missile threats opposite Israel have grown steadily, in spite of Israel's active missile defense programs. Moreover, Pakistan's missile buildup is continuing in spite of India's open embrace of an ambitious ballistic missile defense effort.

Some believe that the offense-defense dynamic was broken by U.S. withdrawal from the ABM Treaty in 2002.[3] Yet, this interrelationship cannot be severed by unilateral action or simply dismissed as an attribute of the Cold War, for it flows not from history or treaty language, but from physics and psychology.

The Richard Nixon Foundation

U.S. President Nixon and General Secretary of the Communist Party of the Soviet Union Leonid Brezhnev sign the Anti-Ballistic Missile (ABM) Treaty on May 26, 1972 in Moscow.

A Half-Century of Interrelationship

One of the most enduring and obvious aspects of the military balance in the nuclear age is the interrelationship between strategic offensive arms and strategic defensive arms, a truism noted in the preamble of the New Strategic Arms Reduction Treaty (New START).

After the first decade of the nuclear era, the U.S. government began paying close attention to the implications for the military balance of the long-range ballistic missiles the Russians were developing. Soon afterward, the Pentagon turned its attention to the development of anti-ballistic missile (ABM) systems.[1] Based on what turned out to be "grossly inaccurate" assessments of Soviet intercontinental ballistic missile (ICBM) capabilities,[2] buttressed by similarly exaggerated threat estimates from Air Force intelligence, the 1957 Gaither Commission report set the stage for years of active development efforts on ballistic missile defense. In spite of serious reservations within Secretary of Defense Robert McNamara's Pentagon about the potential of such systems, as well as strong opposition from the scientific community, the Johnson administration yielded to congressional pressure in deciding to proceed with a "thin" ABM system – i.e., with insufficient numbers of interceptors to blunt a full-scale Russian attack – to protect the U.S. population against deliberate Chinese or accidental Russian attack. The incoming Nixon administration, however, concluded early in 1969 that it would not be cost effective to try to provide population defense. It chose instead to protect U.S. ICBM fields.

In the late 1960s and early 1970s, as the United States and the Soviet Union became seriously engaged in negotiating limits on strategic offensive arms, the issue of strategic defenses quickly became entwined in the process. As a security affairs specialist wrote at the time, "Anyone concerned with the security of the United States must…pay close attention to the potentialities of ballistic missile defenses for limiting damage from a nuclear strike, or, in a larger sense, for helping to deter such a strike."[3]

Library of Congress

The large, phased array radar near Grand Forks, North Dakota, was the principal sensor directing U.S. "Safeguard" ABM interceptors, which were allowed under the ABM Treaty, but operational for a only a few months in 1974.

In the latter part of the 1960s, it was Soviet deployment of ballistic missile defenses around Moscow and the fear that such defenses would extend to other areas that caused the United States to pursue missile defense limits. The U.S. intelligence community was divided at the time as to whether the Soviet Union had a second ABM system around Tallinn, Estonia;[4] but McNamara acknowledged in a contemporary interview, "As Secretary of Defense, I must assume that [the Soviets] will deploy a system across their entire nation, and that is the assumption on which we are developing and have developed our offensive weapons."[5]

By 1972 the two sides had agreed they must avoid a missile defense arms race and signed the ABM Treaty. It established numerical limits on the deployment of ABM radars and interceptors, limited research and development on exotic systems to laboratory experiments, and prohibited the deployment of any ABM system that would provide nationwide, territorial defenses. In 1974 the sides agreed to a treaty protocol lowering the limits from 200 interceptors at two sites to 100 interceptors at one site. This addition to the treaty reflected the U.S. administration's assessment that it was more important to constrain Soviet ABM capabilities than to protect U.S. ABM expansion rights.

In spite of forgoing deployment options, significant missile defense research and development work continued. The "Star Wars" speech of President Ronald Reagan on March 23, 1983, elevated missile defense to a privileged position and can be credited with planting the seeds of the ABM Treaty's eventual demise 19 years later. However, as exemplified by the Gaither Commission report, the "new" vision advanced by Reagan in the Strategic Defense Initiative actually constituted a revival of policies advocated earlier in the nuclear era.

After encountering and eventually surmounting two major compliance challenges (one from each side) during the decade of the 1980s,[6] the ABM Treaty entered the post-Cold War era battered but intact. The George H.W. Bush administration scaled back U.S. missile defense programs in a way that removed any immediate threat to the treaty. Acknowledging that the impenetrable missile shield for which Reagan had hoped was beyond the technologies and budget resources of the time, Bush pursued research and development of missile defenses designed to deal with much more limited offensive missile threats, leaving decisions on strategic missile defense deployments to his successor.

President Bill Clinton deferred

a decision to deploy new strategic missile defenses on the grounds that the systems were not technologically ready and sought to negotiate changes in the ABM Treaty to facilitate the pursuit of missile defenses directed at potential ballistic missile threats from emerging nuclear-weapon states. In uncanny similarity to events 40 years earlier, the push for deployment of strategic missile interceptors was propelled by a combination of overblown claims regarding U.S. technological achievements and potential and overblown estimates of the emerging threat.[7]

These factors contributed to passage by a wide margin of the Missile Defense Act of 1999.[8] In that legislation, Congress adopted a goal antithetical to the purpose of the still-intact ABM Treaty, declaring that it would be U.S. policy to "deploy as soon as is technologically possible an effective National Missile Defense system capable of defending the territory of the United States against limited ballistic missile attack (whether accidental, unauthorized, or deliberate)." Ever since passage, this legislation has been continuously cited by missile defense advocates even though foreign threats and U.S. systems have failed to live up to the expectations on which it was based. Shortly after the Sept. 11, 2001, attacks, President George W. Bush announced that the United States would withdraw from the ABM Treaty in June 2002. In the following year, he announced an intention to deploy a small number of U.S. strategic ballistic missile interceptors before the end of 2004.

Strategic Ground-Based Interceptor (GBI) missiles were installed in converted ICBM silos at Vandenberg Air Force Base, California, and in newly constructed silos at Fort Greely, Alaska, prior to the November 2004 elections, even though developmental testing had not been completed on the system. Subsequent official information betrayed the waste generated by a hasty deployment schedule. The first six silos constructed in Alaska that year for a total cost of $499.8 million now have been judged "inadequate" and are in the process of being replaced.[9] It was already clear then that the timetable could not be justified by any imminent military threat. The ICBM threats that the 1998 Rumsfeld Commission predicted would emerge from Iran and North Korea by 2003 had not appeared by the time of construction; in fact, they still have not materialized eight years later. Moreover, the "deployed" GBI system still has not been realistically tested against potential future threats,[10] and its combat potential cannot be assessed, according to the Government Accountability Office and other independent analyses.[11]

In spite of serious questions raised about the effectiveness of the GBI system, expanding U.S. strategic missile defense capabilities through establishment of a GBI-derivative system at a "third site" in Europe was a major policy thrust in the second term of George W. Bush. The ideological basis of Bush missile defense policy decisions was especially evident in the plan to place 10 strategic interceptors in Poland and an X-band radar in the Czech Republic.

The third-site plan was publicly justified as providing protection for Europe and the United States, but it did not offer protection to NATO territory in southeastern Europe, already in range of Iranian ballistic missiles, and it was not pursued collectively through NATO. The actual motivation was betrayed by its "third site" label: to supplement the strategic defenses already deployed in the continental United States against Iran's potential future threat to U.S. territory.

In September 2009, the Obama administration addressed the illogic of the Bush plan by substituting the Phased Adaptive Approach for Europe-based missile defenses. This change reoriented the original plan—deploying systems by mid-decade to counter future strategic missiles—to one that would deploy tactical systems by 2011 to counter the already-existing shorter-range missile threat and phase-in strategic missile defense deployments at the end of the decade.

ENDNOTES

1. Richard Dean Burns, *The Missile Defense Systems of George W. Bush: A Critical Assessment* (Santa Barbara, CA: Praeger, 2010), p. 14.

2. Ibid., p. 15.

3. J.I. Coffey, "The Anti-Ballistic Missile Debate," *Foreign Affairs*, Vol. 45, No. 3 (April 1967), p. 405.

4. Richard Helms, Executive Sessions of the Senate Foreign Relations Committee Together With Joint Sessions With the Senate Armed Services Committee, (S. Prt. 110-20), 1967

5. Robert McNamara, "Exclusive Interview with Secretary McNamara," *Life* September 29, 1967.

6. One of the ironies of the ABM Treaty compliance saga is that the Reagan administration experienced success in enforcing strict Russian adherence to the terms of the treaty at the very time it was seeking to redefine and broaden the treaty's limitations on testing of systems based on "other physical principles." The Soviets objected strongly to the Reagan administration's legal sleight of hand, but it was Senate opposition to the attempted reinterpretation that brought Washington back into compliance with the Russian (and traditional U.S.) interpretation.

7. For an exhaustively researched and persuasively argued catalogue of such misleading claims and deceptive practices, see Gordon R. Mitchell, *Strategic Deception: Rhetoric, Science, and Politics in Missile Defense Advocacy* (East Lansing, MI: Michigan State University Press, 2000). For a fifth-anniversary retrospective review of the inaccurate predictions in the Rumsfeld Commission's influential 1998 report on the foreign ballistic missile threat, see Greg Thielmann, "Rumsfeld Reprise? The Missile Report That Foretold the Iraq Intelligence Controversy," *Arms Control Today*, July/August 2003, www.armscontrol.org/act/2003_07-08/thielmann_julaug03.

8. See Greg Thielmann, "Looking Back: The Missile Defense Act of 1999," *Arms Control Today*, July/August 2009 www.armscontrol.org/act/2009_07-08/lookingback.

9. Bradley Graham, "New Breed of Missile Silos Put in Alaska," *The Washington Post*, May 27, 2003, www.washingtonpost.com/ac2/wp-dyn/A41901-2003May26?language=printer.

10. See, for example, Victoria Samson, *American Missile Defense: A Guide to the Issues* (Santa Barbara, CA: Praeger, 2010), pp. 48-59.

11. Burns, *Missile Defense Systems of George W. Bush*, p. 152.

New START Protects Missile Defense Options

The New Strategic Arms Reduction Treaty (New START) is noteworthy for its lack of meaningful constraints on strategic ballistic missile defenses even though Russian negotiators wanted to insert such constraints in the document. Moreover, as Gen. Patrick O'Reilly, head of the Missile Defense Agency (MDA), noted, New START "actually reduces constraints on the development of the missile defense program" in comparison with the 1991 START,[4] which prohibited the launch of missile defense target vehicles from airborne and waterborne platforms.

O'Reilly's testimony did not prevent some advocates of strategic missile defenses from complaining about "unilateral constraints" on missile defenses. Yet, the only missile defense constraint of any kind in the treaty itself is the prohibition in Article V, paragraph 3 on converting intercontinental and submarine-launched ballistic missile launchers for use as launchers of missile defense interceptors. In response to this complaint, O'Reilly explained to Congress that retaining the silo conversion option was not sought by the United States because there were no plans to do so and if any new missile defense launchers were needed, they could be acquired more quickly and less expensively through the construction of new silos.[5] None of the critics explained how this provision would limit U.S. missile defense options in the real world.

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A THAAD theater ballistic missile defense interceptor is launched in a 2009 operational test at the Pacific Missile Range Facility in Hawaii.

Some also complained about the treaty preamble's recognition that an interrelationship exists between strategic offensive arms and strategic defensive arms, an interrelationship that "will become more important as strategic nuclear arms are reduced." Yet the existence of this interrelationship has been evident for the last 50 years of the nuclear age. Including this simple truism in the preamble did not lead to any numerical or qualitative limits on missile defenses in the treaty itself. Moreover, the preamble continues with the statement that "current strategic defensive arms do not undermine the viability and effectiveness of the strategic offensive arms of the Parties," a striking acknowledgment by Russia that the 30 strategic ballistic missile interceptors the United States has deployed do not threaten Russia's nuclear deterrent.

A final complaint of missile defense enthusiasts stems from the "Statement of the Russian Federation Concerning Missile Defense." Following a practice used by both parties in past strategic arms treaties, Russia registered its unilateral and nonbinding interpretation that New START "may be effective and viable only in conditions where there is no qualitative or quantitative buildup in [U.S. missile defense system capabilities] such that it would give rise to a threat to [Russia's] strategic nuclear force potential." The statement continued that such a buildup would constitute the kind of "extraordinary events" mentioned in Article XIV of the treaty, permitting Russia to exercise its right of withdrawal.

The Russians reportedly sought to insert language linking the exercise of the withdrawal clause to the other side's buildup of missile defenses into the treaty itself, but the United States refused to accept such language. In response to Russia's statement, the United States issued its own unilateral statement explaining that U.S. missile defenses "are not intended to affect the strategic balance with Russia" and that the United States intended "to continue improving and deploying its missile defense systems in order to defend itself against limited attack."

Ultimately, New START secures a significantly lower level of strategic offensive forces without affecting U.S. plans for strategic defensive forces. Moreover, the United States has made clear in its unilateral statement that the treaty would not prevent it from improving and deploying the most effective missile defense systems possible.

The Phased Adaptive Approach (PAA) has provided a clear and logical conceptual road map for U.S. development and deployment of future missile defense systems in Europe during the treaty's duration. Contrary to the claims of some critics that Obama "sold out" U.S. missile defense capabilities in order to secure New START, the Obama administration abandoned the controversial Bush-era plan to deploy strategic missile interceptors in

Poland for threat-based reasons. The 10 strategic interceptors planned for the site by mid-decade offered only redundant protection against potential missile threats to the United States that were still years away and nothing to protect the portion of Europe already exposed to existing Iranian missile threats.

The PAA is structured to address Iran's medium- intermediate-, and intercontinental-range missile threats as they emerge. Furthermore, because no additional defensive capability against intercontinental ballistic missiles (ICBMs) is planned for deployment until the Standard Missile-3 (SM-3) IIB in 2020, this approach is not perceived by Moscow as posing a midterm threat to Russia's strategic nuclear retaliatory capability. Obama's plan is thus more likely than President George W. Bush's "third site" model to lead to cooperation rather than confrontation with Russia.

Together, New START, the phased approach, and NATO's pledge at its 2010 Lisbon summit actively to pursue missile defense cooperation with Russia have had a calming effect on Russian missile defense anxieties. "Members of the Russian General Staff have openly stated that they do not feel threatened by the Europe-based theater missile defense systems currently planned."[6] USA and Canada Institute Director Sergey Rogov opined this year that "[U.S.] emphasis has shifted to a regional BMD [ballistic missile defense], which cannot threaten Russian ICBMs at least until 2018-2020. The United States will remain *de facto* within the framework of the ABM Treaty to the end of the current decade." In early December, Russian President Dmitry Medvedev conditionally endorsed NATO's proposal for cooperation, calling for creation of a "full joint cooperation mechanism."[7]

Trouble With Moscow on the Far Horizon?

Even though New START is relatively friendly to missile defense, Russian reactions to the treaty and to U.S. missile defense developments convey a complicated and conflicted message. Moscow appears satisfied that it can proceed safely with modest reductions in strategic offensive systems under New START and has accepted NATO's stated intention to develop territorial missile defenses for Europe.

However, Russian officials continue to voice concerns about future improvements in U.S. missile defense systems, as they did in Russia's unilateral statement to New START warning against a "quantitative and qualitative" buildup in U.S. missile defense system capabilities. Moscow has been dubious for a long time about U.S. portrayals of a potential strategic threat from Iran and North Korea, in public and in confidential dialogue with the United States.[8] Even after Russia's acceptance of NATO's offer to cooperate on missile defense, Russian Ambassador to NATO Dmitry Rogozin openly declared, "Russia does not see any missile threats in northern Europe, so the defense systems should not be deployed there."[9]

The danger now is that Moscow will mimic past U.S. behavior, if not by augmenting the Russian arsenal, then at least by refusing to negotiate post-New START reductions in strategic offensive arms without securing limits on strategic missile defenses.

Moscow appears to accept the logic of U.S.-Russian cooperation on missile defense, but remains skeptical such cooperation could ever lead to a safe and truly equitable joint relationship. Prior to the Lisbon summit, Rogozin described NATO's invitation for cooperation as "political," complaining that "when we ask, time and again, what the technical parameters of this system are, what the zone of its deployment is, who the enemy will be and why missile threats have not been assessed before deploying anything, we never get an answer."[10] Russia demands full equality in the control of any cooperative approach to missile defense. According to Russian Defense Minister Anatoly Serdyukov, "We also want to ensure that Russia participates as an equal partner. Only then can a missile defense system be created that satisfies all sides."[11]

In spite of his upbeat rhetoric with regard to his conversations at the November 2010 meeting of the NATO-Russia Council in Lisbon, Medvedev's emphasis on "absolute equality" and endorsement of a side-by-side "sector-based" missile defense system appear to go far beyond the evolving concept articulated by NATO. In fact, Medvedev's characterization of his discussions does not seem consistent with the territorial defense plan outlined by NATO: "[E]veryone realizes now that overall, only universal missile defence systems offer any real value, and not systems built to protect particular countries only, or covering particular military theatres only."[12]

Moreover, Medvedev's emphasis on the interrelationship between European missile defenses and Russian strategic offenses gives little support for the notion of a

fundamental change in Russian strategic thinking: "But I remind you that countries still have their nuclear forces in place today, and when we look at missile defence we have to look too at the possible effects a European missile defence system could have on our nuclear forces."[13]

The conclusions of Rogov are typical of the widespread skepticism in Russia about U.S. willingness to cooperate fully on strategic defense: "Russia and the United States hardly are ready to agree to create a joint missile defense. Such a system cannot have a 'double key.' But the level of trust between Moscow and Washington is not such that we would trust the other side to defend us against a missile attack. Both sides of course will not give up national control over their own BMD system."[14]

Given the pivotal role of Soviet President Mikhail Gorbachev in the nuclear arms negotiations of the 1980s, his warning in late 2010 that the United States and Russia must reach agreement on missile defense issues is worth noting.[15]

Switching Sides

The governments in Washington and Moscow, which control the vast majority of the world's long-range ballistic missiles, demonstrate today the same dynamic on strategic missile defense efforts they have demonstrated for decades. One side pursues a major missile defense program; the other side seeks to limit it through negotiations and mitigate its impact through improvements in its own offensive forces. However, there is one major difference: Moscow and Washington have changed sides. Forty years ago, it was the Soviet Union that had deployed strategic ballistic missile defenses. The United States reacted by seeking to ban nationwide missile defenses, while multiplying U.S. offensive nuclear warheads and developing penetration aids to defeat Moscow's ABM defenses. The danger now is that Moscow will mimic past U.S. behavior, if not by augmenting the Russian arsenal, then at least by refusing to negotiate post-New START reductions in strategic offensive arms without securing limits on strategic missile defenses.

Department of Defense

An SM-3 theater ballistic missile defense interceptor is launched from the USS Hopper (DDG 70) in a 2009 test off the coast of Hawaii.

Cooperation and Limits

There are two general formulas for preventing the predictable offense-defense dynamic from derailing the next round of bilateral negotiations on reducing strategic arms and pushing Russia to maintain a large, Cold War-scale strategic nuclear force. They are not mutually exclusive. One would be to cooperate so extensively on missile defenses that the use of these systems in a military conflict with each other would be infeasible or unthinkable. Day-to-day collaboration on missile defenses would increase transparency and could help persuade the Russians that U.S. deployments do not threaten Russia's deterrent. Theoretically, it could lead to eventual creation of a virtual "dual-key" system, affording each side an operational veto over use. Another alternative would be to establish, either as a political commitment or treaty obligation, sufficient limits on strategic ballistic missile defenses so that neither side would fear these systems as a threat to the credibility of its nuclear deterrent.

The United States has set out forthrightly in the direction of increased missile defense cooperation with Russia. Obama and Medvedev agreed at the July 2009 Moscow summit to conduct joint assessments of missile challenges and threats. That activity is now underway. NATO has adopted the goal of territorial missile defense, and Moscow has accepted the offer of U.S.-Russian cooperation on missile defense, built on successful past cooperation on theater missile defenses. A bilateral Arms Control and International Security Working Group has been established under the U.S.-Russia Bilateral Presidential Commission to address, *inter alia*, missile defense cooperation. O'Reilly and Deputy Assistant Secretary of State for Space and Defense Policy Frank Rose have traveled to Moscow for briefings and consultations on these topics.

It is possible that hitherto disparate U.S. and Russian assessments of the Iranian threat will begin to merge if the threat grows and that continually improving relations between Moscow and Washington will permit an unprecedented level of bilateral or multilateral cooperation on missile defense. Yet, there is reason to question whether such efforts will bear enough fruit to satisfy Russia's concerns about the potential long-term effect of U.S. strategic missile defenses on Russia's strategic deterrent. The U.S. internal debate on New START revealed great sensitivity within the executive and legislative branches of government to granting Russia access to telemetry involving missile defense flight tests. The United States has made clear that it is not offering a "dual key" system, and as noted above, Russia doubts this attitude will change. Both sides likely would wish to retain their ability to operate missile defenses independently of the other in a crisis. This independence might contribute to stability in a crisis because each side would be confident of the ability to control its own assets, but it would not foster arms race stability because suspicions of intent would linger.

Given that unconstrained strategic missile interceptor deployments could undermine U.S. efforts to verifiably reduce Russia's still-enormous strategic nuclear arsenal and … its massive tactical nuclear stockpile, automatic opposition to any kind of missile defense constraints must be reconsidered.

The most compelling reason to believe that cooperation will be insufficient is to imagine the United States in a position similar to Russia's today. The U.S. Senate had trouble consenting even to a nuclear arms control agreement that leaves U.S. missile defenses unlimited, requires only modest reductions in U.S. offensive forces while leaving force structures that allow the United States to dominate treaty breakout contingencies, and requires intrusive inspections that provide the United States with information on Russian strategic forces otherwise unavailable. To expect the Russians to accept significant additional reductions in their strategic forces without constraining U.S. options for indefinite expansion of strategic missile defense capabilities is unrealistic.

Realistic Responses to the Threat

Following passage of the Missile Defense Act of 1999 and U.S. withdrawal from the ABM Treaty in 2002, the conventional wisdom appears to have hardened around the notion that missile defenses should remain outside the arms control arena indefinitely. Indeed, former Secretary of State Condoleezza Rice recently hailed the 2002 Strategic Offensive Reductions Treaty for "breaking the link between offensive force reductions and limits on defense."[16] Not surprisingly, very little critical thinking has gone into the subject of strategic missile

Department of Defense

A GBI strategic ballistic missile defense interceptor is launched from Vandenberg Air Force Base, California in 2010.

defense arms control for a long time. The 2010 elections would appear to have increased congressional determination to reject any limits on missile defenses. Changes in the New START resolution of approval constitute evidence of increased Senate resistance to such limits. Yet given that unconstrained strategic missile interceptor deployments could undermine U.S. efforts to verifiably reduce Russia's still-enormous strategic nuclear arsenal and account for and reduce its massive tactical nuclear stockpile, automatic opposition to any kind of missile defense constraints must be reconsidered.

For most missile defense advocates and for the last four U.S. administrations, the end of the Cold War and rapprochement between the United States and Russia have helped shift the original missile defense mission of protecting against a catastrophic potential attack from Russia toward protecting against a more limited threat from the emerging nuclear threats of "rogue" states.[17] Moreover, technical and budgetary obstacles have kept a lid on some of the more fanciful visions of the Reagan administration regarding lasers, particle-beam weapons, and space-based systems, narrowing the focus to more down-to-earth capabilities such as the Ground-Based Interceptor (GBI) missiles currently deployed in Alaska and California. The latter category of strategic systems, which would include the planned SM-3 IIB, is likely to be in the spotlight during negotiations of a post-New START agreement.

If progress on nuclear offensive arms control becomes stymied by plans to expand U.S. strategic missile defenses, what kind of limits could be considered to clear the path? Emerging nuclear threats, on which missile defense is now focused, and the programmatic emphasis on ground-based missile interceptors shape the kind of solutions to the challenge posed by strategic missile defense to nuclear arms control.

Mixing Offensive Warheads and Defensive Missiles in the Same Limit

One method would be to construct an aggregate limit on offensive warheads and defensive ballistic missile interceptors with freedom-to-mix. The trade-off could be 1:1 or another ratio that would reflect probable operational practices of aiming multiple defense interceptors at each incoming target. For example, in establishing a 2:1 defense-offense ratio, the United States would compensate for the deployment of 30 GBI missiles by deploying 15 fewer strategic nuclear warheads. This arrangement would allow for the missile defenses the United States has currently deployed, which are oriented against limited third-party threats, with minimal impact on the strategic offensive deterrent. Neither of the United States' two largest potential adversaries would fear that its deterrent was being jeopardized. Moreover, it would impose automatic disincentives for relying too heavily on strategic defenses because each side would be concerned about retaining sufficient offensive forces to ensure its ability to retaliate against an attack.

The flexibility in this approach, however, might sacrifice too much in the way of predictability, one of the principal virtues conferred by negotiated security arrangements. Jack Mendelsohn, former Arms Control Association deputy director and executive director of the Lawyers Alliance for World Security, points out that every change in the mix, even a small one, would be potentially destabilizing because it would present the other side with a new combination of targeting opportunities and liabilities.[18] Indeed, using defensive missiles and offensive warheads as the units of account would be stable only in the context of auxiliary bans on ascent-phase interception, which could potentially enable one interceptor to destroy multiple warheads on a single offensive missile, and on deployment of interceptors with multiple, independently targetable kill vehicles, which could significantly enhance the impact of each defensive unit by multiplying the number of warheads it could neutralize.

Back to the Future

Another approach would be simply to create a strategic missile defense interceptor limit in parallel with limits on offenses, for example, 1,000 deployed strategic offensive warheads and 100 deployed strategic defense interceptors. The limit also could be geographical because the vulnerability of Russian ICBMs to interception by SM-3 IIBs would be affected significantly by the location of deployments. This would be superficially similar to the numerical and geographical limits on strategic ABM interceptors in the ABM Treaty, but the purpose of that treaty was to prevent the deployment of nationwide strategic ballistic missile defenses, principally through qualitative limits on radar construction. Breakout potential then was controlled further by quantitative limits on strategic interceptors—200 in the original treaty, lowered to 100 by the 1974 Protocol—and by clearly demarking the performance characteristics of strategic and nonstrategic interceptors in the 1997 Agreed Statements (table 1).[19]

In contrast to their position when the ABM Treaty was in force, the Russians now have conceded the principle of permitting nationwide strategic ballistic missile defenses by acknowledging in New START's preamble that "current defensive arms do not undermine the viability and effectiveness of the strategic offensive arms of the parties." Indeed, the number of strategic interceptors that were allowed even under the amended ABM Treaty was much higher than the number of U.S. ground-based strategic interceptors deployed today in California and Alaska and is probably in the vicinity of the number needed for the United States to cope with likely contingencies

Table 1: Overview of U.S. Ballistic Missile Defense (BMD) Interceptors

Current and planned BMD interceptors are arrayed below, opposite the offensive missiles they are designed to counter. Those with ICBM intercept potential (GBI and SM-3 IIB) pose a threat to achieving further reductions in strategic offensive arms.

Offensive Ballistic Missile Threat (Range)	BMD INTERCEPTOR	VELOCITY	PHASE OF INTERCEPT	STATUS*	OPERATIONAL DATE*
ICBM (5500+ km)	***Ground-Based Interceptor (GBI)***	6.7 km/s (for the exo-atmospheric kill vehicle)	Midcourse (exo-atmospheric)	Operational	2004
ICBM	***Aegis/SM-3 Block IIB***	>4.5-4.8 km/s (estimated)	Midcourse (exo-atmospheric)	Advanced Development	2020
IRBM (3500 – 5500 km)	Block IIA	4.5-4.8 km/s (estimated)	Midcourse (exo-atmospheric)	Advanced Development	2018
MRBM (1000 – 3000 km)	Aegis/SM-3 Block IB Block IA	3.0 – 3.5 km/s	Midcourse (endo- and exo-atmospheric)	Engineering Development Operational Testing	2015 2011
MRBM	Terminal High Altitude Area Defense (THAAD)	2.8 km/s	Midcourse (endo- and exo-atmospheric)	Operational	2010
SRBM (<1000 km)	Patriot Advanced Capability (PAC-3)	1.7 km/s	Terminal	Operational	2003

* The status and operational dates are not exact. The Department of Defense's definition of "initial operational capability" (IOC) for ballistic missile defense systems is not consistent across services and over time. IOC traditionally followed a period of operational testing and evaluation, after which the first unit armed with the system was declared ready to perform its mission. But in some cases, "operational" now means "fielded" or "available for use." In the case of GBI, the system was declared "operational" while it was still in the R&D phase. The dates generally reflect the official timelines provided by the U.S. Government.

Sources: ACA, based on MDA and CRS data

from Iran and North Korea in the 2020s. Even after adding the upgraded SM-3 IIB systems envisioned for the end of the decade under the PAA, total numbers still would be within the limits on strategic missile interceptors last enumerated in the ABM Treaty. Moreover, Russia previously agreed in the 1997 START-ABM Treaty package that the performance characteristics of the original SM-3 and Terminal High Altitude Area Defense interceptors were "nonstrategic" and therefore should not create an obstacle to continued reductions in strategic nuclear forces as they become operational over the next five years.

Although either negotiating approach plausibly might address Russian concerns about U.S. strategic missile defenses, neither may be feasible at present given congressional antipathy in recent years to formal limits on missile defenses. Even U.S. acknowledgment of the offense-defense interrelationship in the New START preamble rankles missile defense advocates. Thus, political commitments or U.S. statements of intent concerning strategic missile defenses might forestall the worst international consequences of expanding U.S. capabilities, but could still set off a firestorm of domestic opposition..

It is therefore essential to begin opening up a public dialogue on the real-world opportunity costs of such reflexive opposition. This dialogue should extend to U.S. NATO allies and those in the Pacific who directly face shorter-range ballistic missile threats from hostile states. A number of questions must be addressed in sorting out the role of strategic missile defense in U.S. nuclear policy: Is a highly reliable missile defense potential likely to be affordable in the decade ahead, even assuming that it is technically achievable? Is the value of unconstrained U.S. strategic missile defenses superior to the value of achieving additional reductions in Russian deployed strategic systems and of adding strategic nondeployed and tactical systems to the list of weapons to be cut? Is it worth risking the chance of leveling off the growth in Chinese strategic forces? Indeed, can one even contemplate successful pursuit of horizontal nonproliferation if efforts to stem vertical proliferation grind to a halt as a result of missile defense deployments? Unless one can confidently answer "yes" to each of these questions, it is time to consider realistic alternatives to unconstrained growth in strategic missile defenses.

ENDNOTES

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2. Gen. Kevin P. Chilton, "Nuclear Deterrence, START, Arms Control, Missile Defense and Defense Policy," Presentation at the NDU Foundation Congressional Breakfast Seminar Series, September 13, 2010.

3. See, for example, Condoleezza Rice, "New Start: Ratify, With Caveats," *The Wall Street Journal*, December 7, 2010.

4. Agence France Presse, "New START Treaty Good for U.S. Missile Defense: U.S. General," April 15, 2010.

5. Lt. Gen. Patrick J. O'Reilly, Testimony before the Senate Foreign Relations Committee, June 16, 2010.

6. Luke Champlin, "Russian Strategic Nuclear Policy in the Era of New START," May 10, 2010 (unpublished) (citing RIA Novosti, "PRO SShA v nyneshnem sostojanii 'ne volnuet' rossijskih voennyh – Genshtab," April 12, 2010).

7. Associated Press, "Medvedev: Russia, NATO Must Reach Missile Deal," December 3, 2010.

8. A February 24, 2010, Department of State cable, released by WikiLeaks, reporting on December 22, 2009, talks on missile threat assessments between U.S.-Russian delegations in Washington revealed significant differences in the two countries' official, classified assessments of Iranian and North Korean ballistic missile capabilities.

9. Mikhail Fomichev, "European Missile Defense System Either With Russia or Against Russia – NATO Envoy," RIA Novosti, December 2, 2010.

10. Global Security Newswire, "Russia Demands Details on NATO Antimissile Plan," October 18, 2010.

11. "Moscow Wants to 'Participate as an Equal Partner,'" *Der Spiegel*, October 27, 2010.

12. Dmitry Medvedev, "News Conference Following NATO-Russia Council Meeting," *Johnson's Russia List*, November 20, 2010, www.cdi.org/russia/johnson/russia-nato-lisbon-summit-medvedev-transcript-nov-346.cfm.

13. Ibid.

14. Sergey Mikhaylovich Rogov, "The 'Window of Opportunity' Is Open," *Nezavisimoye Voyennoye Obozreniye*, May 28, 2010.

15. Mikhail Gorbachev, "The Senate's Next Task: Ratifying the Nuclear Test Ban Treaty," *The New York Times*, December 28, 2010. See "The Ice Has Broken," *International Herald Tribune*, April 22, 2010.

16. Rice, "New Start," December 7, 2010.

17. A small but increasingly influential minority of missile defense advocates, such as Senators Jim DeMint (R-S.C.) and James Inhofe (R-Okla.), have explicitly called for broadening the objectives of missile defense to include providing territorial defense against Russia and China.

18. Jack Mendelsohn, conversation with author, October 31, 2010.

19. The "New York Agreements on Theater Missile Defense and ABM Treaty Successor States," signed by the United States, Russia, Belarus, Kazakhstan, and Ukraine on September 26, 1997, included two "Agreed Statements on Demarcation," identifying 3 kilometers per second as the critical performance parameter separating prohibited "higher velocity" theater missile defenses from permitted "lower velocity" theater missile defenses. For the text of the agreements and statements, see www.fas.org/nuke/control/abmt/text/abm_scc1.htm and www.fas.org/nuke/control/abmt/text/abm_scc2.htm. For a summary of the agreements and statements, see www.armscontrol.org/factsheets/pack.