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Why Are the Soviets against Missile Defense—Or Are They?

Anthony Carl Holm

A survey and comparison of U.S. and U.S.S.R. ballistic missile defense (BMD) policy decisions reveal that both nations regard BMD as desirable. Further, the actions of the United States and U.S.S.R. support this argument even though both countries have publicly reproved BMD strategy at one time or another. So why are the Soviets bombarding the U.S. arms control negotiators with statements to the contrary? Why are the Soviets opposed to BMD in the 1980s? A survey of American and Soviet actions, national interests, and public statements—prior to the Antiballistic Missile Treaty, during the treaty negotiations, and after the treaty took effect—should demonstrate why.

BMD Policy Decisions Prior to the Antiballistic Missile Treaty

A number of factors, such as technological capabilities, military doctrine, domestic and bureaucratic politics, foreign BMD actions, and limited financial resources influence BMD policy decisions in both the United States and U.S.S.R. None of these factors were, or are, mutually exclusive. In 1945, the United States was the first country to test and use the atomic bomb. What followed was a new national security policy called Massive Retaliation that relied primarily on offensive weapons. However, some leading military professionals, such as General Maxwell Taylor, considered the defensive aspect of conventional war applicable to nuclear war as well. In his book *The Uncertain Trumpet*, Taylor acknowledged that the U.S. Army began to discuss the need for an antimissile missile as early as 1945.¹ Concurrently, the U.S.S.R. was developing its atomic bomb and conducting research on an intercontinental ballistic missile (ICBM). In 1949, the Soviet Union tested its first atomic bomb. By then the United States had built its first 95 intercontinental bombers, while possessing 2,485 forward-based bombers (stationed in Europe and Japan), and 50 atomic bombs.² During the same year,

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the Soviet Union had no intercontinental bombers, no forward-based bombers that could be effective against the United States, and no atomic bombs.³ The United States continued to build a large bomber force and nuclear weapons stockpile through the 1950s, thereby retaining a significant lead over the U.S.S.R.

The Soviet Union attempted to counter U.S. strategic weapons policy by creating an elaborate air defense system in the early 1950s.⁴ By the mid-1950s, the United States had 413 intercontinental bombers, over 2,000 forward-based bombers, and over 4,700 deliverable nuclear warheads.⁵ The U.S.S.R. had 10 intercontinental bombers, no forward-based bombers, and 20 deliverable nuclear warheads.⁶ The number of weapons on both sides increased during the first 30 years of the nuclear era, and this was the general pattern that prevailed until the 1970s. The United States maintained nuclear superiority over the U.S.S.R. while decreasing its conventionally armed forces. The U.S.S.R., on the other hand, retained large conventionally armed forces, hoping to offset the U.S. nuclear weapons advantage and consolidate power in Eastern Europe.

The military doctrines of the United States and U.S.S.R. were dissimilar. Soviet military doctrines discussed both offense and defense for a nuclear war for most of the 1950s and 1960s, but offense gradually gained ground. It is interesting to note that defense strategy, even in a conventional war, was not always a part of Soviet military doctrine. The concept of a defense strategy was not explicitly a part of Soviet military doctrine until 1942.⁷

In late August 1957, the Soviet Union achieved the world's first successful launch of an ICBM. The United States conducted a similar launch about one year later. By 1959, the United States perceived a "missile gap" and embarked on a major nuclear weapons buildup. Secretary of Defense McElroy estimated the Soviet Union would obtain a 3 to 1 ICBM superiority over the United States by the early 1960s.⁸ General Taylor drew a similar, although somewhat reserved, conclusion in 1959: "Having a well-developed skepticism toward information tending to inflate the strength of an enemy, I have been slow to accept the reality and the significance of the so-called Missile Gap. Reluctantly, I have concluded that there is indeed such a gap which, in combination with other factors which will be mentioned, has a most significant bearing upon our military security."⁹

Taylor further concluded that "until about 1964, the United States is likely to be at a significant disadvantage against the Russians in terms of numbers and effectiveness of long-range missiles—unless heroic measures are taken now."¹⁰ By 1961 the perceived "missile gap" proved to be false. Today's statistics prove just how wrong the perception was. For example, in 1961 the United States had 13 times as many ICBMs and 14 times as many deliverable nuclear warheads as the Soviet Union had.¹¹

The United States also became interested in developing antiballistic missile (ABM) weapons, albeit with little enthusiasm until the "missile gap" period. Prior to 1959-61 some policymakers and professional soldiers advocated a BMD policy, General Taylor being among them. In *The Uncertain Trumpet*, he urged a \$6 billion crash program that would achieve an operational capability for the Nike-Zeus system by 1961, but the Secretary of Defense and several of Taylor's colleagues on the Joint Chiefs of Staff consistently opposed the program because of the uncertainty of success. Nevertheless, the Nike-Zeus system did receive some funding for research and development as early as 1955. By 1959, a Nike-Zeus missile was test-fired at the White Sands Missile Range in New Mexico, and in 1962 a successful test interception of an ICBM was made over the Kwajalein Missile Range.¹²

In the early 1960s, the United States began to initiate passive BMD measures—hardening ICBM launch sites with layers of concrete so that each launch complex could withstand the blast and electromagnetic pulse of a nuclear explosion¹³—but the Soviet Union did not begin to harden its ICBM sites until the mid-1960s.¹⁴ However, as the number of ICBM warheads and accuracy of the missile guidance increased, passive missile defense came into disrepute.

It appears that the U.S.S.R. considered BMD policy options as early as the late 1950s.¹⁵ For the U.S.S.R., BMD policy may have been considered in light of U.S. Nike-Zeus research and development or considered concurrently with the development of the Soviet ICBM. Marshal Sokolovskii's *Soviet Military Strategy* supports the first argument. In an appendix to the first edition of the book, Sokolovskii regards General Taylor's *The Uncertain Trumpet* as one of the notable Western military works available in Russian translation in the Soviet Union. Comments by Premier Nikita Khrushchev in 1961 support the second argument, "I can only tell you that at the time we told our scientists and engineers to develop intercontinental rockets, we told another group to work out means to combat such rockets."¹⁶ Marshal Malinovskii and Marshal Biriuzov made similar claims supporting Khrushchev's comments. For example, Malinovskii declared in a speech published in 1962 that the Soviet Union had already deployed an ABM system.¹⁷ This claim was repeated by Biriuzov, then Chief of the Soviet Air Defense Forces and Chief of the Strategic Rocket Forces.¹⁸ Most Soviet military writers, such as Marshal Sokolovskii, were, however, more sober in their assessment of BMD.

Following Khrushchev's ouster in October 1964, President Johnson called for a U.S.-U.S.S.R. nuclear weapons freeze, but the offer was ignored by Soviet leaders in favor of continuing efforts to achieve at least nuclear weapons parity with the United States.¹⁹ It was at this time that the U.S.S.R. embarked on its passive BMD policy and revamped its active BMD research

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Doctrine was published in *International Affairs*, the journal of the Soviet Foreign Ministry. The Talenskii Doctrine, fathered by Major General Nikolai Talenskii, outlined the basic premises of Soviet BMD policy in the 1960s.²⁰ Its first premise was that ballistic missile defense was, in fact, defensive; it would be used only in response to aggression. Second, the argument that the adversary's response would be to increase the number of offensive weapons was misleading because such a reaction by an adversary could not be ruled out, even in the absence of an active Soviet BMD. This point was particularly plausible in light of the preponderance of U.S. nuclear weapons force levels since the 1940s. The third premise of the Talenskii Doctrine described the "harmonious combination"²¹ of both offensive and defensive strategic forces and stated that this combination of forces would be preferable to a balance of power founded on offensive weapons alone. This combination would enhance deterrence by increasing the perceived uncertainty of victory by an aggressor. Fourth, the Soviet Union should have a missile defense to achieve "maximum deterrence in its full and direct sense" rather than depending on the "goodwill and sincerity of the other side."²²

While most Soviet policymakers agreed with the Talenskii Doctrine, there were some reservations about the availability of technology. The three successive editions of Sokolovskii's *Soviet Military Strategy* demonstrate this point. In the first edition (prior to the publishing of the Talenskii Doctrine and after Khrushchev's public statements on BMD in 1961), Sokolovskii was mildly pessimistic about missile defense. "Ballistic missiles, employed en masse, are still practically invulnerable to existing means of air defense. . . . Only as special instruments of anti-missile defense are developed will it be possible to combat the massive use of missiles in the air."²³ After the publishing of the Talenskii Doctrine and following Khrushchev's statement, the following two editions of Sokolovskii's book dropped the above comments and acknowledged that a solution to the technological problems of BMD had been found. "The rapid development of nuclear-armed missiles and their adoption as the basic means for delivering nuclear blows to targets deep within the country have posed the problem, for all states, of creating an effective anti-missile defense capable of destroying enemy ballistic missiles in the air. In principle, a technical solution has been found."²⁴

The Talenskii Doctrine was not a parochial statement of Soviet military opinion. Civilian Soviet leaders, such as Premier Kosygin, also shared Talenskii's view of missile defense. At the Glassboro, New Jersey summit in 1967, Kosygin told President Johnson that a ban on ballistic missile defense was "the most absurd proposition he had ever heard."²⁵ Kosygin believed that an antimissile system would cost more than an offensive system, and that it was not intended to kill people.²⁶ This latter point was ABM's

In the United States, policy options in favor of BMD were dead in the water. Secretary of Defense McNamara's opinion of missile defense was the obverse of the Talenskii Doctrine, and it was not until the late 1960s that McNamara was persuaded to change his mind on the issue. Soviet ABM deployments may have helped to change his mind. In 1964, during the annual May Day parade, the Soviets displayed their first operational ABM, the Galosh. The U.S.S.R. also began to deploy the necessary radar systems, the so-called Hen House early warning radar and the Dog House battle management radar, and a series of Galosh launch sites around Moscow.²⁷ Earlier reports of such a deployment had been disproved in 1963, but satellite reconnaissance confirmed that the Soviets had begun to construct a missile defense system around Moscow in 1967.²⁸

By the mid-1960s, the U.S. ballistic missile defense was still in the research and development stage with lukewarm support in the Johnson administration. In June 1964, the U.S. Army's first phased-array radar went operational at the White Sands Missile Range.²⁹ In June 1966, the prototype battle management radar for guiding Sprint and Zeus missile interceptors, and Nike-X launch equipment was constructed on Meck Island for testing.³⁰

In 1967, after it became apparent that the U.S.S.R. was going ahead with its ABM system, the United States began to reconsider the deployment of its own ABM systems. Nevertheless, despite strong pressures from Congress and the JCS, Secretary of Defense McNamara avoided any commitment to a fully deployed ABM system. The American response to Soviet BMD deployments came in a different fashion with the development and procurement of penetration aids designed to deceive and bypass the Soviets' active missile defenses. The new Poseidon and Minuteman III missiles contained radar decoys and chaff that, in theory, would overload BMD radars with too many targets to track, identify, and for which to find a fire control solution.³¹

But in September 1967, McNamara yielded to pressure from Congress and the JCS, and approved the limited deployment of Sentinel, an ABM system costing about \$5 billion, excluding research and development, and tactical operation and maintenance costs.³² While presumably impractical against any large-scale Soviet countervalue attack, the Sentinel would be effective against the foreseen Chinese ICBMs expected to become operational in small numbers in the early 1970s.³³

In January 1967, just prior to the McNamara ABM decision, President Johnson again asked the Soviet Union to discuss arms control as he had done in 1964. The U.S.S.R., in principle, accepted Johnson's offer but not until 27 June 1968 (after McNamara's ABM deployment decision) did the Soviets formally agree to open talks.³⁴ After the Soviet decision to participate in ABM limitation talks, missile defense systems were no longer placed in the May Day parades, and construction work on the Moscow-Galosh system came to a halt. Finally, the U.S.S.R. stopped Galosh deployment at 64 launch points, or

half the originally planned number.³⁵ Arms control negotiations on offensive and defensive strategic weapons began in November 1969. The United States continued its effort to catch up with Soviet BMD deployments.

In March 1969, under the new Nixon administration, the Sentinel system was reoriented and renamed Safeguard. As "Safeguard," the system was to protect missile sites instead of cities. The rationale of this policy shift was that it was too expensive to attempt to protect cities from a nuclear attack with BMD weapons. The Soviets never made such a shift. Apparently they continued to believe that it would be best to protect cities or at least to protect Moscow, the main command, control, and communications center of the Soviet Armed Forces. Construction contracts for the U.S. Safeguard facilities in North Dakota and Montana were awarded in March and May 1970.³⁶ By December 1971, contracts were also awarded for the construction of the Ballistic Missile Defense Center in Cheyenne Mountain, Colorado—what is now the headquarters for the North American Aerospace Defense Command.³⁷

U.S. and U.S.S.R. National Interests during ABM Treaty Negotiations

Both the United States and U.S.S.R. entered defensive arms control talks with different national interests. Both sides were influenced by military doctrine, domestic and bureaucratic politics, technological capabilities, implied threats of the other side's technological achievements and policy decisions, and limited financial resources, as they have been since the beginning of BMD.

Some of the reasons for the U.S.S.R. entering ABM negotiations were attributable to the Nixon administration's policy of détente. Détente was the Nixon-Kissinger version of a containment strategy, i.e., it was a policy for containing the territorial expansion and influence of the Soviet Union with a combination of pressures and inducements. Some of the requirements for implementing détente were: to engage in serious negotiations on substantive issues; to link offensive and defensive arms control negotiations; to avoid isolation of the PRC which caused it "to nurture its fantasies, cherish its hates, and threaten its neighbors," as Nixon put it; and to reduce American military commitments abroad in areas such as Indochina.³⁸

The Soviets did not appear particularly interested in linking offensive and defensive strategic weapons issues, but they were amicable to the U.S. desire to reduce troop commitments around the world. It also appears that the U.S.S.R. was quite happy to negotiate a freeze on BMD weapons for several reasons. First, a negotiated weapons freeze could allow the Soviet Union to continue BMD research in new areas and perhaps continue upgrading the existing Galosh installation if the United States could be persuaded or deceived to slow or cancel the deployment of Safeguard. This stratagem

would give the Soviets time to close the technology gap which lay between their own and the U.S. weapons systems, significantly, the Multiple Independently Targetable Reentry Vehicle (MIRV), among others. By 1970 the United States had such weapons operational, but the U.S.S.R. was not expected to have them until some time between 1974 and 1976.³⁹ MIRVs were a part of any tactical plan to overcome BMD systems.

Another significant U.S.S.R. consideration was the concern that its offensive weapons buildup would be frustrated if the United States proceeded with ABM deployment. In order to keep pace with U.S. superior technological capabilities, a larger financial expenditure by the Soviets would be necessary. This consideration must have been important to Soviet policymakers in their objective to achieve a missile-throw weight advantage over the United States.⁴⁰ Another consideration of Soviet decisionmakers was that the Galosh system was not highly rated by U.S. defense officials. Secretary of Defense McNamara publicly expressed his confidence in U.S. MIRV systems by stating that they could overcome Galosh deployments.⁴¹

The Soviets aimed at using the ABM Treaty and the attitudes of the détente era to continue BMD research and development and maintain Galosh while the United States restrained its ABM deployments. There were four primary reasons for the United States to enter into negotiations. *First*, the large national security expenditures, caused, in part, by the Vietnam War, were hurting the national economy. The United States could not afford to engage in a new area of the arms race, such as BMD, without large increases in the Nation's money supply. *Second*, public opinion leaders were decidedly against BMD. BMD opponents were able to mobilize opposition from groups living in North Dakota and Montana, the proposed deployment area. *Third*, Congress began to reassert its role in foreign policy as U.S. involvement in Vietnam decreased. Many Congressmen were against BMD. Senator George McGovern argued that each President since Eisenhower had rejected BMD, saying it was a waste of the taxpayers' money. McGovern recommended to Nixon that he do the same as all the Presidents before him, that is, drop BMD deployment.⁴² Senator Stuart Symington, former Secretary of the Air Force and former BMD advocate, said that the Safeguard system was militarily ineffective and an enormous waste of public funds.⁴³ *Fourth*, Nixon and Kissinger wanted to engage in serious negotiations on substantive issues with the Soviets in the belief that they could modify U.S.S.R. behavior in the international arena. The ABM Treaty qualified as a substantive issue.

The ABM Treaty was one of several agreements of the Strategic Arms Limitation Talks. The ABM Treaty was concluded at Helsinki in May 1972 and became effective in October. Each side agreed "not to deploy ABM systems for a defense of the territory of its country and not to provide a base for such a defense, and not to deploy ABM systems for the defense of an individual region,"⁴⁴ with exceptions. The exceptions were that each country

could deploy 100 ABM launchers within a 150-kilometer radius of its national capital and another 100 launchers within a 150-kilometer radius of an ICBM field. These provisions allowed the U.S.S.R. to keep the Galosh system they were building around Moscow, and it permitted the United States to maintain its first Safeguard installation in Grand Forks, North Dakota.

In 1974, both the United States and U.S.S.R. agreed in a protocol to the ABM Treaty that each country would be limited at any one time to one of the two areas provided for in the treaty; that is, the Soviet Union would retain an ABM system around Moscow, and the United States would keep its system anchored to an ICBM field with a limit of 100 launchers for both. This agreement cut the number of potential launchers on each side from 200 to 100. Later the United States judged that the minimal effectiveness of its one ABM complex in North Dakota did not justify the cost since it could be overwhelmed by MIRVs just as the Galosh system could be, and it was deactivated in 1976.⁴⁵ The Soviet Union, while allowed to have 100 launchers around Moscow, initially kept 64 and later scaled down to 32 missile launchers. More recently, they have begun to upgrade and expand the Galosh system.⁴⁶

Post-ABM Treaty Developments

Notwithstanding the ABM Treaty, both the United States and the U.S.S.R. continued to pursue research and development efforts in antiballistic missile systems. Both countries heavily engaged in passive BMD programs which included the development of redundant command and control facilities. The Soviet Union's program also encompassed the hardening and dispersal of critical industrial assets and extensive investment in civil defense.⁴⁷ In the early 1980s, Soviet BMD developments were giving U.S. policymakers some cause for concern. According to the Department of Defense (DOD) document, *Soviet Military Power, 1986*, the U.S.S.R. had been upgrading its Moscow ABM system, since 1978, to the maximum number of launchers allowable by the ABM Treaty and protocol. The DOD publication also reports that the Soviets are modernizing the Moscow ABM system to include: "A two-layer defense composed of silo-based, long-range, modified Galosh interceptors; silo-based Gazelle high-acceleration endoatmospheric interceptors designed to engage targets within the atmosphere; associated engagement, guidance and battle management radar systems; and a new large [power aperture] radar at Pushkino designed to control ABM engagements."⁴⁸ According to the DOD, the new silo-based launchers may be reloadable, which would be a treaty violation. The improved ABM system could be operational this year.⁴⁹

Another source of concern for U.S. policymakers was the Soviet deployment of the SA-10 and the development of the SA-X-12 surface-to-air

missile (SAM) systems. Both systems may have the potential to intercept U.S. ballistic missiles. The SA-10 is estimated to have a "cruising speed of Mach six"⁵⁰ and the ability to accelerate at 100 times the force of gravity. By the spring of 1985, the SA-10 was deployed at about 60 sites with 520 reloadable missile launchers.⁵¹

Officials in the DOD have concluded that the U.S.S.R. is attempting to develop a rapidly deployable, nationwide ABM system, although Central Intelligence Agency officials maintain that the Soviets are unlikely to deploy this kind of system.⁵² The Soviet Union has been cited for treaty violations in radar systems, surface-to-air missiles (SAM), and antisatellite (ASAT) weapons; most of these charges are plausible. The Soviets are now constructing six new phased-array radars which are permitted under the ABM agreements. According to the Reagan administration, however, the last radar in this chain of new phased-array radars, the Krasnoyarsk installation in Siberia, violates Article VI of the ABM Treaty which states that the United States and the U.S.S.R. agree "not to deploy in the future radars for early warning of ballistic missile attack except at locations along the periphery of its national territory and oriented outward."⁵³ The Krasnoyarsk radar is oriented into the heart of Siberia.

The U.S.S.R. has maintained that the Krasnoyarsk installation is for space tracking, rather than BMD, and therefore does not violate the ABM Treaty since space-tracking radars are allowed under item "F" of the "Agreed Statements" section of the ABM agreements.⁵⁴ Is the Soviet leadership telling the truth? It would be difficult to use the Krasnoyarsk installation for BMD since there are no ICBM fields, no strategic bomber bases, and no significant military installations in the area of radar coverage.⁵⁵ However, the Krasnoyarsk radar might offer limited protection of attack corridors leading to SS-11 ICBM sites in Drovyanoy, Svobodnyy, and Olovyannaya. The alleged treaty violation at Krasnoyarsk also becomes highly significant when one considers the use of SS-25 and SS-X-24 mobile ICBMs which could be deployed in the Krasnoyarsk coverage area.

Another possible Soviet ABM Treaty violation, which is more difficult to prove than the Krasnoyarsk assertion, is the supposition that "The Soviets have probably violated the prohibition on testing SAM components in an ABM mode by conducting tests involving the use of SAM air defense radars in ABM-related testing activities."⁵⁶ Moreover, the SA-10 is a mobile system. Mobile ABM-capable systems violate item "C" of the "Common Understandings" section of the ABM agreements.⁵⁷ Again, this charge, much like that regarding Krasnoyarsk, opposes the potential of these systems to be used as ABM weapons and related battle management equipment. Where an ABM potential exists, one can be near certain that it can and will be used in wartime.

The Soviets may have also violated Article V of the treaty, which implicitly prohibits ASAT systems. The Soviet Union has the world's only operational ASAT system. According to the JCS, "The Soviets' ASAT is a weapon capable of attacking satellites in near-earth orbits. Additionally, the Galosh antiballistic missile interceptors have an inherent ASAT capability when used in a direct ascent mode."⁵⁸

The United States may have violated an aspect of the ABM Treaty also. The United States does not have an operational ASAT, but it is developing such a system. The Air-Launched Miniature Vehicle, a small missile launched from F-15 aircraft, has been tested; it may be a violation of the Article V of the ABM Treaty.

With this rather obvious technological lead in strategic defense weapons, Soviet leaders have continued to insist that they are not seeking to develop or deploy a large-scale ABM system, and that the United States should not even plan an ABM system. This position was made clear by Mikhail Gorbachev in a 5 July 1985 letter to the Union of Concerned Scientists: "The Soviet Union is not developing strike space weapons or a large-scale ABM system. Nor is it laying the foundation for such a system. It abides strictly by its obligations under the [ABM] treaty as a whole and its particular aspects, and observes unswervingly the spirit and the letter of that highly important document. We invite the American leaders to join us in this goal and to renounce plans for space militarization now in the making, plans that would lead to the negation of that document, which is the key link in the entire process of nuclear arms limitation."⁵⁹

Several physical realities seem to differ from the picture Gorbachev paints. Deployed ASAT weapons, the Krasnoyarsk radar installation, and upgrades on the Galosh system do not "unswervingly" follow "the spirit and the letter" of the ABM Treaty. Furthermore, the Soviets are keenly aware of the American position with respect to these military systems; yet there has been no change in Soviet behavior. If the Soviets were genuinely concerned about the maintenance of the ABM Treaty, they would probably be more accommodating on the U.S. Strategic Defense Initiative. Instead, it appears that Soviet leaders are again attempting to use a diplomatic stratagem that was employed during the SALT I treaty negotiations; that is, the Soviet Union is attempting to induce the United States to maintain the ABM freeze (with the United States doing minimal research and no deployment) while the U.S.S.R. continues advanced research without sacrificing their offensive weapons budget.

The United States and the Soviets have pursued ballistic missile defense policy for the last 41 years. They have done so for three main reasons: to increase chances for survival for ICBMs if those ICBMs are attacked first; to protect the command, control, and communications of the armed forces in the

event of a nuclear war; and to increase the uncertainty of victory for the attacker, thereby increasing deterrence. These three themes have been found consistently in U.S. and U.S.S.R. policy statements.

After the ABM Treaty and protocol, several new issues emerged which caused BMD policy to change over time and increase its appeal to both U.S. and U.S.S.R. policymakers. First, even a limited BMD system could prevent or neutralize a small nuclear attack. The possibility of small nuclear attacks was publicly discussed for the first time in the late 1960s when it was believed that the PRC would command a small number of ICBMs by the 1970s. Later, in 1974, Secretary of Defense James Schlesinger announced a new U.S. nuclear targeting policy designed to complement Flexible Response Strategy with an additional range of limited strike options suitable for deterring (or responding to) a Soviet attack below the spasm-war threshold. This shift in U.S. policy was caused by the introduction of the U.S.S.R.'s large MIRVed ICBMs in 1974 and which, in turn, produced a rich menu of targeting options short of the all-out attack scenario envisioned by formal Soviet military doctrine. Critics of the Schlesinger strategy charged that limited strike options only increase the likelihood of full-scale nuclear war because the United States and U.S.S.R. would lack the C³ facilities to terminate a limited nuclear strike if a settlement is negotiated prior to full-scale nuclear war.

However, BMD offers a solution to this problem because ABM systems, with existing technology, can intercept the small numbers of ICBMs that would be expected during a limited nuclear attack. It could reduce the amount of damage to military C³ and increase the amount of available time to terminate a limited nuclear war before it reaches full-scale war. Furthermore, BMD would help stabilize deterrence by making the strategic nuclear offensive forces balance less sensitive to sudden change in force ratios, and it would extend deterrence against provocations and extortionate threats by less than massive nuclear attacks.

Moreover, BMD can help protect the United States and the Soviet Union from accidental, unauthorized, third country or terrorist attacks—for example, terrorists gaining control of a fixed or mobile ICBM. Additionally, BMD deployments can be used to encourage and enhance further arms control negotiations. Finally, both the United States and U.S.S.R. gain technological benefits from BMD; that is, the technology may have other uses for the civilian population.

Both the United States and U.S.S.R. have conspicuously pursued BMD policy in the postwar era. The United States first considered ballistic missile defense in 1945 and subsequently began research and development in 1955. The U.S.S.R. did not begin ballistic missile defense efforts until the late 1950s with a crash program to develop and deploy an ABM system by the early 1960s as a counter to large U.S. nuclear weapons deployments. As a result of the Soviet program, the United States reluctantly increased BMD research

and development. Both nations used BMD efforts to enhance the deterrent value of their weapons systems; yet a gradual arms race in BMD research did exist between the two countries.

The race was primarily limited by doubts about the technological feasibility of active BMD and the lack of financial resources for BMD. Shortly after the signing of the ABM Treaty, the U.S.S.R. achieved a slight BMD technology, deployment, and operational experience edge over U.S. efforts. By the early 1980s, the Soviet advantage was clear-cut. In an effort to catch up with the U.S.S.R., the United States announced it would redouble its BMD research with the Strategic Defense Initiative to achieve technological parity in BMD weapons. The U.S. BMD deployment decision has been deferred while the U.S.S.R. continues to upgrade its Moscow BMD system and other BMD deployments.

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