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# IN STRATEGIC DEFENSE, MOSCOW IS FAR AHEAD

## INTRODUCTION

The Soviet Union has been denouncing the Reagan Administration unrelentingly for moving ahead with research on a nuclear defense system--the so-called Star Wars project. Stopping the progress of Reagan's Strategic Defense Initiative (SDI), in fact, seems to be the main reason that Moscow has come back to the arms talks table. What Moscow's huffing and puffing seems designed to mask, however, is that the Soviet Union itself has been working for years to develop strategic defenses. Moscow has been outspending the U.S. on strategic defense four to one and probably has spent more on defense than offense since signing the 1972 treaty that was supposed to regulate strategic defense developments.

The Soviet Union already has deployed most of the essential building blocks for an effective countrywide strategic defense system. At its center are the ABM (anti-ballistic missile) interceptors surrounding Moscow. Together with mobile radars, they provide some protection against missile and bomber attack for a large part of the industrialized western part of the Soviet Union. Moscow's far-flung air defense consists of more than

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This is the seventh in a series of Heritage Backgrounders examining strategic defenses. The others were: "Air Defense: Protecting America's Skies," Backgrounder No. 379, September 13, 1984; "The New Case for Civil Defense," Backgrounder No. 377, August 29, 1984; "Strategic Defense: The Technology That Makes It Possible," Backgrounder No. 375, August 23, 1984; "Space Weapons: The Key to Assured Survival," Backgrounder No. 327, February 2, 1984; "Wanted: A Space Policy to Defend America," Backgrounder No. 311, December 17, 1983; and "Strategic Defense: Avoiding Annihilation," Backgrounder No. 304, November 9, 1983.

10,000 surface-to-air missiles of which some have ABM or anti-cruise missile capabilities. The Soviets, moreover, have fielded a large fleet of advanced interceptor aircraft like the new MiG-29 FULCRUM, MiG-31 FOXHOUND, the Su-27 FLANKER, equipped with look-down/shoot-down radar, and the AA-X-10 and AA-9 air-to-air missiles to engage penetrating enemy aircraft.

Its civil defense effort underscores Moscow's determination to protect key segments of the Soviet leadership and civilian population against nuclear war.[1] Finally, the centralized economic planning of the Soviet economy allows deliberate dispersion and hardening of critical industrial facilities and stockpiling of raw materials to enhance their survivability in nuclear war.

Moscow, meanwhile, is acquiring the prerequisites for a space-based missile defense. This includes a space shuttle, a very large expendable launch vehicle with a heavy lift capability comparable to the U.S. Saturn V missile, a second generation of one of the Cosmos craft anti-satellite systems,[2] manned space planes, and permanently manned space stations. The Soviets have been conducting research in directed energy weapons for over a decade and have developed a nuclear explosive generator. They also have tested lasers against low orbiting SALYUT VII space craft. These will allow Moscow to field a space defense to complement already existing ground-based systems.

For years, therefore, Moscow has been committing massive resources to its own "Star Wars" strategy. Only now is the U.S. deciding to do the same. Strategic defense makes sense for the U.S.; it is a defense that protects Americans by actually defending them rather than holding them hostage to nuclear attack. What makes the Reagan Strategic Defense Initiative urgent is the lead that the Soviets have taken in this critical field. If the Soviets alone possessed a strategic defense system, their ability to intimidate the West and to successfully carry out a nuclear first strike would be greatly enhanced.

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1 For a discussion of Soviet civil defense efforts and its role in Soviet strategy see: Leon Goure, War Survival in Soviet Strategy, USSR Civil Defense (Miami, Florida: Center for Advanced International Affairs, 1976); George Kolt, "The Soviet Civil Defense Program," Strategic Review, Spring 1977; Director of Central Intellience, Soviet Civil Defense, July 1978; John M. Weinstein, "Soviet Civil Defense and the U.S. Deterrent," Parameters, Vol. 12(1), pp. 70-83.

2 For a review of the Soviet space program see: Soviet Space Program: 1976-1980 (With Supplementary Data Through 1983, Manned Space Programs and Space Life Sciences), prepared at the request of Honorable Robert Packwood (R-OR), Chairman, Committee on Commerce, Science and Transportation, U.S. Senate, Part 2 (Washington, D.C.: U.S. Government Printing Office, October 1984).

## SOVIET NUCLEAR WEAPONS POLICY

Soviet efforts in strategic defense derive from Moscow's view of its overall strategic objectives and warfighting strategy.

### Soviet Strategic Objectives

Soviet politico-military objectives regarding nuclear weapons have remained essentially unchanged since the 1950s. Soviet strategic forces are supposed to ensure:

1) Deterrence of Western and Chinese use of nuclear weapons;

2) Ability to prevail in an East-West nuclear conflict;

3) Denial or at least degradation of political leverage generated by U.S. nuclear forces.

These strategic objectives set the requirements for the Soviet strategic forces and shape Soviet deployment strategy. No matter what nuclear forces their alleged adversaries have deployed, the Soviets strive to preserve a flexible nuclear force enabling them to prevail in any type of a nuclear conflict and under any conceivable scenario.[3] Although the Soviets have never been able to achieve complete confidence in their warfighting options, they seek as much assurance as technology and resources allow.

### The Role of Missile Defense in Soviet Deterrence Strategy

The Soviets maintain that robust deterrence is ultimately based on the possession of high quality strategic forces and credible options to use them. Yet the Soviets also appear to believe that the quality of deterrence is not solely a function of the existing nuclear balance. Such intangible factors as the perceived resolve of one's own leadership, attitudes and inclinations of adversary's leadership, existing alliances, and conflict potential present in the international system greatly affect the quality of deterrence.

The Soviets always have maintained that the possession of ballistic missile defense could strengthen deterrence in unique ways, regardless of the technical shortcomings of existing and prospective systems. As early as 1964, in a famous article in International Affairs, General N. A. Talenskiy, a former editor of Military Thought, a classified journal of the Soviet General Staff, claimed that deterrence based solely on offensive forces was inherently unstable and "directly dependent on the good will" of the "imperialists." Talenskiy emphasized that ballistic

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[3] The remaining two objectives of Soviet nuclear weapons policy (deterrence of Western resort to nuclear weapons and degradation of political leverage of American nuclear forces), while derived from the possession of capable strategic posture have exerted less influence on evolution of either Soviet forces or actual employment policy. They did, however, play a major role in shaping Soviet declaratory strategy.

missile defenses were credible and thereby strengthened deterrence. Defensive systems, he argued, were certain to be used in case of an attack.

> ...anti-ballistic missiles are intended exclusively for the destruction of the opposite side's missiles and not intended for the destruction of any objects on the opponent's territory. Anti-ballistic missiles are intended for the destruction of the opponent's missiles in flight with the consideration that the destruction of missiles with nuclear warheads prevents a loss of population in one's own country and, further, of the population of allies and neutral states.
>
> Thus, anti-ballistic missile systems are defensive weapons in the full sense: by their technical nature, they come into operation only when missiles of the attacking side enter into flight, that is, when an act of aggression has begun.[4]

An additional benefit provided by ABM systems was that they could serve as a hedge against an accidental outbreak of war. Overall, the Soviets have maintained that deterrence, while not exclusively a function of the existing strategic balance, is essentially based on the possession of a credible nuclear force posture, and that ballistic missile defense can bolster deterrence in a way that cannot be duplicated by offensive nuclear forces alone.

## SOVIET STRATEGIC DEFENSES

### Pre-1969

Moscow apparently began working on ballistic missile defense (BMD) when it did on offensive missiles.[5] By 1957, U.S. intelligence discovered an anti-ballistic missile (ABM) test range at Sary Shagan, Siberia, and one or two large early warning radars,

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4 Major General N. A. Talenskiy, "Anti-Missile Systems and the Problems of Disarmament," Mezhdunarodnaya Zhizn' (International Life), October 1964.

5 Mark E. Miller, Soviet Strategic Power and Doctrine: The Quest for Superiority (Washington, D.C.: Advanced International Studies Institute, 1982), p. 99. The terms "anti-ballistic missile" (ABM) systems and "ballistic missile defense" (BMD), are commonly used interchangably to describe weapons designed to destroy ballistic missiles and reentry vehicles (RVs). The components of an ABM system are defined in the ABM Treaty. The term ballistic missile defense was coined to encompass technologies beyond the scope of the ABM treaty and to avoid the negative connotations of ABM. In many ways, BMD is a generic concept, whereas ABM is merely one BMD technology.

whose location and size implied an ABM role.[6] By 1958, an independent organization for anti-missile defense was established within the Soviet Air Defense structure.[7]

In late 1961, the Soviets broke their three-year self-imposed nuclear testing moratorium. Five days into the testing, they detonated a nuclear warhead at high altitude over the Sary Shagan radar, conceivably to test the effect of a "blackout" on the radar's performance. There were unconfirmed intelligence reports that the Soviets actually fired a nuclear armed ABM interceptor against an ICBM in flight.[8]

An active testing and development program was launched. From the beginning the Soviets chose a two-pronged approach to ABM development: 1) procurement of a specialized ABM system featuring radars, interceptors, and data processing facilities, and 2) endowing the existing and projected air defense systems with ABM capabilities.[9]

The first Soviet ABM system associated with the latter approach was discovered around Leningrad in 1961. Work on the concrete foundations for the system's radars was similar to that observed at Sary Shagan, and it was located across the planned flight corridors of U.S. ICBMs. Only 30 launchers were constructed, however, and by 1963 all were dismantled.[10]

In 1963, new construction was observed near Tallin and at some of the previously cleared Leningrad sites. During the November 1963 Moscow military parade, the Kremlin unveiled what looked like a high altitude endo-atmosphere interceptor missile (SA-5/Griffon) for use against ballistic missiles and penetrating bombers. Subsequently, Griffon was deployed at sites stretching in a belt from the Baltic Sea to the Arctic Ocean, covering the northern approaches to the USSR.

The Tallin installation was apparently another product of the Soviet "dual track" ABM/air defense research strategy. Tallin launch sites bore a close resemblance to Soviet anti-aircraft installations. Its radars were mechanically steered, and most important, it lacked facilities for nuclear warhead storage, then required for ABM interceptors. Overall, Leningrad and Tallin possessed only a marginal ABM capability.

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6 Lawrence Freedman, U.S. Intelligence and the Soviet Strategic Threat (Boulder, Colorado: Westview Press, 1977), p. 87.

7 John Prados, The Soviet Estimate (New York: Dial Press, 1982), p. 152

8 Prados, op. cit., pp. 152-153.

9 Steven Sayre, The Soviet BMD Program, in Ashton B. Carter and David N. Schwartz, eds., Ballistic Missile Defense (Washington, D.C.: Brookings Institution, 1984), p. 194.

10 Freedman, op. cit., p. 91.

The construction of the first ABM system began in 1962 around Moscow. Two large ABM radars (named Dog House and Cat House by the Pentagon) were being constructed, and at the November 1964 parade, the Soviets unveiled what appeared to be an exo-atmosphere interceptor (Galosh) for use against incoming warheads outside the Earth's atmosphere and designed for the Moscow system.

Work also began in 1964 on the first three "perimeter acquisition radars." Such radars are essential for an ABM system because they allow early assessment of an attack. Dubbed the Hen House, these radars were located at Irkutsk, along the Barents Sea coast and in Soviet Latvia.[11] Later that year, work began on a "large phased array radar" (Dog House) located to the southwest of Moscow. These radars are critical in controlling the course of missile defense by assigning individual interceptors to incoming warheads. By 1966, two additional Hen House radars were under construction.

During 1964-1966, the Soviets faced a critical ABM system choice. Moscow confronted a tough set of capability requirements in response to what it saw as a tremendous increase of hardened and soft targets in the U.S. and allied countries, brought about by the strategic buildup of the Kennedy Administration.

To respond to this, the Soviets could have developed a balanced offense-defense posture or accelerated deployment of the third generation offensive missiles, while postponing defensive deployments. In view of the deficiencies of their own ABM technology, the Soviets at the time chose to accelerate their offensive weapons programs. Yet they did not abandon strategic defenses. The writings of Soviet strategists implied that ABM deployments would begin in the late 1960s or early 1970s, once technological problems had been solved and the offensive modernization completed. Soviet planners continued to believe that a balanced offense-defense mix would produce a high quality deterrence.

By 1969, however, it became clear that Soviet defensive deployments were not proceeding as rapidly as expected. Only three of eight engagement radars associated with the Galosh ABM system surrounding Moscow were judged operational, and work continued at only four sites out of eight.[12] By late that year, the Soviets began to test a new and more sophisticated version of Galosh (ABM-2), while beginning to deploy several of the original ABM-1 missiles. By the end of 1970, 40 advanced Galosh interceptors were deployed.

## Soviet Defenses: 1969-1972

Despite the Galosh installations, it seemed that Moscow had decided to forgo, for technical and strategic reasons, the large-scale operational ABM deployments needed for a balanced offense-defense posture. The deficiencies of Soviet ABM technology were

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11 Prados, op. cit., p. 158.

12 Freedman, op. cit., pp. 88-90.

a major reason. The U.S. Safeguard ABM system, itself plagued by many technical problems, was vastly superior to ABM-2. Another reason for Moscow's going slow on ABM was its realization that American domestic opposition could cripple U.S. ABM research and development. The Kremlin apparently concluded that a vigorous research and development program without full-scale deployment of the Galosh system would allow the USSR to catch up with U.S. technology. At the same time, Moscow planned to maintain a large air-defense system with the residual ABM capabilities.

By the early 1970s, the size of U.S. strategic forces also had stabilized. The Soviets thus had little reason to expect a sudden increase in Western targets for Soviet missiles. Soviet offensive capability requirements for the next decade, therefore, were relatively stable and easy to define. Furthermore, the Soviets had considerable growth potential for warheads on their existing launchers. This potential, when fully exploited, did not yet translate into a Soviet disarming first strike capability, mainly because the Soviet anti-submarine warfare (ASW) forces had little hope of destroying most U.S. SSBNs at sea. But the projected lack of U.S. sea-launched ballistic missiles (SLBMs) capable of destroying hardened Soviet targets and extensive Soviet civil and air defense resources promised to mitigate the damage inflicted by a U.S. retaliatory attack with submarine-based ballistic missiles. Such a strategic nuclear contingency would clearly favor the Soviets and thus be preferable to Moscow.

Deployment of U.S. strategic defenses would have complicated tremendously these carefully calibrated Soviet preemptive attack options and eroded any confidence the Soviets might have in launching a successful first strike. At the same time, the relative lack of U.S. counterforce capability and the Soviet ability to harden silos and upgrade military installations alleviated most concerns the Soviets might have had about U.S. first strike options, if there were a U.S.-Soviet agreement which limited ABM deployment.

The Soviets concluded, moreover, that the resources thus saved could be used to speed deployment of their fourth generation offensive systems. In fact, they proceeded with these very rapidly, deploying some 800 advanced medium and heavy intercontinental ballistic missiles.

From Moscow's standpoint, the 1969-1970 decision to develop an offense-dominant posture was a prudent and sensible strategic compromise. Yet it did not necessarily reflect Soviet acceptance of mutual assured destruction (MAD), as alleged by some U.S. observers,[13] or aversion to strategic defenses.

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[13] John Newhouse, Cold Dawn: The Story of SALT (New York: Holt, Rinehart and Winston, 1973).

## Post-ABM Treaty Soviet Strategic Defense Development

Following the 1972 ABM Treaty, Soviet R&D in strategic defense continued at a fast pace. Indeed, since signing the treaty, Moscow has spent more on defensive weapons research than on offensive weapons. This is paying off handsomely. By the mid-1970s, components of the ABM-X-3 began to appear. These included a new Galosh interceptor, dubbed SH-4. This exo-atmospheric missile reportedly could loiter in space by stopping and restarting its engines. This would give ground-based radar an opportunity to discriminate between real warheads and such penetration aids as decoys or chaff.[14]

The Soviets also developed a mobile ABM radar, built around several trailers. These radars, if linked with each other and with existing large fixed phased-array radars, conceivably could provide the Soviets with a rapidly deployable and hard to target ABM infrastructure. Such radars, however, have low power output, which constrained their range and ability to discriminate between warheads and penetration aids.[15]

The ongoing modernization of the Moscow system represented the merger of the two distinct Soviet approaches to ballistic missile defense problems; some of the ABM-X-3 components resembled elements that had been associated with the "dual track" ABM/air defense approach.[16] For the first time, the Soviets have demonstrated an interest in developing an endo-atmospheric interceptor (SH-08) that could destroy missiles inside the atmosphere, as a terminal backup to the exo-atmospheric ABM-X-3 system. This missile has been tested at Sary Shagan in a rapid reload mode which violates the ABM Treaty; two hypersonic SH-08 missiles were fired from the same silo within two hours.[17]

Moscow's system radars are also being modernized. Three new Pushkino class large phased-array radar (LPARs) are being built. They are equipped with phase shifters, which allow the radars to provide 360-degree coverage.[18] The huge power aperture of Moscow's system LPARs gives them large search volume and long distance engagement capability. Thus, the Moscow system, if supported by the enhanced interceptor deployment, can provide defense for a large portion of Western Russia. In fact, there are some indications that Moscow, for the last several years, has been stockpiling SH-04/SH-08 interceptor missiles and associated Flat Twin tracking radars and Pawn Shop engagement radars, which could provide a rapidly deployable area ABM defense in conjunction with the Moscow system.

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14 "BMD, ASAT Links May Pose Tough Arms Control Questions, Study Says," Aerospace Daily, January 11, 1979.

15 Prados, op. cit., p. 170.

16 Sayre, op. cit., p. 211.

17 "Soviets Accelerate Missile Defense Efforts," Aviation Week and Space Technology, January 16, 1984.

18 "Soviets Building ABM Radar System," Washington Times, April 19, 1984.

In addition to Pushkino class radars of the Moscow system, LPARs throughout the Soviet Union are being modernized, while new LPARs are being built. The newest is the Pechora class. Counting the Krasnoyarsk radar, which President Reagan identified as a definite ABM Treaty violation in his February 1, 1985, report, seven Pechora class LPARs have been built.[19] The original radars of this class at Pechora and Kola near the Arctic Circle are functionally similar to the U.S. ballistic missile early warning (BMEW) radars located at Thule, Greenland, and Clear, Alaska, to detect ICBM launches. Radars at Kiev and Komsomolsk probably provide coverage for submarine-launched ballistic missiles (SLBMs) and the Michalevka LPAR is primarily intended to provide data on Chinese launches.

The controversial Krasnoyarsk radar in Southwest Siberia is oriented to the northeast and, together with the other Pechora radars, permits more accurate attack assessment. Its location near several Soviet ICBM fields gives it battle management capabilities, should Moscow surround these fields with a mix of SH-04/SH-08 interceptor missiles and associated engagement radars.[20] This radar was first detected in July 1983, but its advanced construction stage indicates that it was begun several years earlier in violation of the ABM Treaty.

In addition to Pushkino and Pechora LPARs, the Soviets still deploy the original 15 Hen House perimeter acquisition radars (overall the Soviets have 25 LPARs). This considerable radar infrastructure is expected to be completed by the late 1980s. Even then, however, Soviet radar coverage would have gaps. And if the Soviets were to stockpile enough Flat Twin radars, which provide the final tracking of incoming missile warheads in their reentry stage, these radars would require installation of concrete positioning foundations throughout the USSR. There is yet no evidence of foundations.[21] This suggests that if the Soviets decide to deploy a countrywide ABM system, it would be several years before it reached full operational capability. An expansion of the Moscow system would probably take less time, but then only portions of Western Russia would be defended.

Until an ABM system is created, the Soviets can rely partially on numerous SA-10, SA-11, and SA-12 surface-to-air missiles or SAMs. According to Robert Cooper, the Director of the U.S. Defense Advanced Research Program Agency (DARPA), the SA-12, in particular, is being deployed in two configurations, one for air defense and one for ABM missions.[22] If the SAMs' radars are linked with Pushkino and Pechora LPARs, the Soviets would have a

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19 Defense Daily, March 13, 1984.

20 "U.S. Scrutinizing New Soviet Radar," Aviation Week and Space Technology, August 22, 1983.

21 Aviation Week and Space Technology, January 16, 1984.

very respectable Anti-Tactical Ballistic Missile (ATBM) capability and a more modest capability against U.S. submarine-launched ballistic missiles.

In addition to traditional ABM systems, the Soviets fund an ambitious R&D program of "exotic" technology. This involves the construction and operation of extensive facilities at Semipalatinsk, Sarova, Afgir, and the Kurchatov Institute at Moscow as well as a number of electron-beam propagation experiments carried out aboard manned and unmanned spacecraft.[23] According to Richard DeLauer, former Undersecretary of Defense for Research and Engineering, the Soviet Union employs over 10,000 scientists in its high-energy laser program at more than half a dozen research facilities. It has accelerated work on gas dynamic lasers and the electric discharge lasers with potential weapons applications and optical laser components.

These activities are consistent with comments of Soviet military officials since the mid-1960s that "the future of the USSR's military capabilities would depend on its success in developing advanced weapons, including laser weapons for ballistic missile defense." The Soviet laser programs are so advanced that prototypes of ground- and space-based laser weapons for use against satellites and ballistic missiles probably will be tested in just a few years; and deployment could begin in the early 1990s, provided these tests validate their technology developments.

By comparison, the U.S. programs are considerably smaller and trail the Soviets by years.[24]

## LIKELY SOVIET ABM OPTIONS AND RESPONSES TO AMERICA'S SDI

Examination of the evolving Soviet strategic needs suggests that Moscow has reconsidered the utility of an offense-dominant strategic posture and will eventually evolve a more balanced offense-defense mix. In fact, the Soviets have accelerated dramatically the scope and pace of their ABM activities in the last several years.

In 1985, Moscow faces another critical choice of how to structure its strategic expansion. Assuming that the Soviets fail to get the U.S. to abandon SDI through arms control agreements and "peace" offensives, the short-term and intermediate

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23 "Beam Weapons à la Russe," Defense Week, April 16, 1984, pp. 17-18.

24 Richard D. DeLauer, Soviet Strategic Defense, hearings before the Committee on Armed Services, U.S. Senate, 98th Congress, 2nd Session, Department of Defense Authorization for Appropriations for Fiscal Year 1985, Part 6, Strategic Defense Initiative, March 8, March 22, and April 24, 1984, pp. 2928-2929.

Soviet choices are not too dissimilar from those they faced in 1964-1965 and in 1969-1970. Given the hard pressed Soviet economy and the desire to modernize conventional forces, Moscow's current strategic nuclear options are:

1) concentrate on building the defensive forces, while slowing the scope and rate of offensive modernization; or

2) proceed with the full-scale deployment of the fifth generation of offensive systems while postponing operational deployment of a sizable ABM system until the early 1990s.

Both of these options entail various costs as well as benefits.

Option 1 would enable Moscow to capitalize on its considerable advantages in immediately deployable ABM capabilities. This may cause problems for U.S. employment strategy and impede U.S. ability to strike a wide range of Soviet targets. To some extent, the U.S. would be able to compensate by relying more on bombers and cruise missiles and rapidly deploying sophisticated penetration aids. The Soviets would also have to anticipate that the crash deployment of U.S. ABM would start immediately. Consequently, the Soviet advantage would dissipate within six to seven years. Thus, this option would make little sense unless Moscow were prepared to attack the U.S. during this period of vulnerability.

If the Soviets choose option 2, their apparent "restraint" in deploying new generation ballistic defense technologies would probably prevent a U.S. crash program to implement SDI. Moreover, the Soviets could manipulate the arms control negotiations to slow the pace of SDI: Moscow's readiness to return to the Geneva negotiations is clearly part of a propaganda and arms control campaign to achieve this goal. Finally, by deferring deployment of novel BMD systems, while continuing fielding of current style ABM systems, the Soviets will complete their offensive force modernization on schedule.[25]

At the same time, they can discern the direction of U.S. technological developments and learn from U.S. progress and failures. This will enable them to field their own systems without undue delay at the end of the present offensive forces procurement cycle. All the while, Moscow will be reaping propaganda advantages that could spark potentially divisive conflicts within the Atlantic Alliance.

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[25] Through the Geneva negotiations, Moscow wants to get the U.S. to abandon the Strategic Defense Initiative (SDI). Assuming, however, the U.S. resists Soviet pressure, Moscow might consider exacting a high price for its potential willingness to renegotiate the ABM Treaty. This gives Moscow considerable leverage, once the U.S. seeks the renegotiation to accommodate SDI.

On the other hand, this option would prevent Moscow from maximizing the operational effectiveness of its present ABM technology, and depending on the pace at which U.S. offensive modernization proceeds, might cause a sharp decline in the warfighting effectiveness of Soviet strategic forces by the mid-1990s.

Overall, Moscow is likely to choose Option 2, especially because of current Soviet assessment of the evolving strategic environment, the potential Soviet interest in stabilizing nuclear competition, and Moscow's emerging emphasis on conventional options in its warfighting strategy.

Long-term Soviet options are far more difficult to predict. On the one hand, Moscow would strive to maintain its capability to attack the full U.S. target array. Conversely, Moscow may decide to settle for a defense dominant posture under which most, if not all, types of offensive nuclear operations would be impractical. The U.S. can play a major role in influencing these long-term Soviet strategic choices.

The major Soviet strategic nightmare is that, in the combined offense-defense arms competition, the USSR might eventually find itself inferior in both offensive and defensive forces, as a result of U.S. technological advantages. Were this to happen, the quality of Soviet deterrence would worsen, the political leverage of Soviet forces would dwindle, and Moscow would have few, if any, credible warfighting options. In many respects, this situation would be much worse than suffering from unfavorable force assymetries in an offense-dominant environment, as even the Soviet ability to inflict an "assured destruction" attack against the U.S. might be eroded.

If, over time, the Soviets become convinced that the West is able to degrade Soviet offensive force capabilities they might agree to restructure existing strategic forces through a combination of a reduction of offensive forces and a buildup of defensive assets. In fact, from the Soviet standpoint, an environment in which the threat of employment of long-range offensive nuclear forces has been largely reduced should be beneficial, as they would be able to exercise freely their considerable advantage in conventional forces. Therefore, even more attention to the conventional balance by NATO would seem absolutely necessary.

## CONCLUSION

Even if a transition from an offense to defense-dominant strategic environment would be sought by Moscow, given existing offensive and defensive assymetries, it would be difficult to implement without U.S.-Soviet arms control understandings.

This offers some hope for eventual Soviet moderation. As such, the Reagan Strategic Defense Initiative offers the best opportunity to stabilize U.S.-Soviet competition and remove the

threat to civilian populations of nuclear war. It is ironic that those most vocal in warning of the horror of a "nuclear holocaust" and "nuclear winter" are those who refuse to consider that SDI offers the best way of escaping what they say they most fear.

SDI has much to commend it. Moscow, after all, is moving inexorably towards deploying a sizable ABM system. Were the U.S. to delay developing its own strategic defenses, it is very unlikely that the Soviet nuclear buildup or nuclear defense deployments would be slowed. What would happen, almost certainly, is that the credibility of the U.S. deterrence would be eroded further, thus increasing the danger of war. Reagan's SDI, on the other hand, offers the prospect of strengthening deterrence, limiting civilian casualties should conflict occur, and deep mutual arms reductions.

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