U.S.-SOVIET-CHINA RELATIONS AND STRATEGIC DEFENSE

by Kim R. Holmes, Ph.D.

Much has been written on the likely impact of the Strategic Defense Initiative (SDI) on America's allies.[1] Attention has focused most often on whether the United States' European allies will participate in SDI research and on the likely effect some future deployed U.S. strategic defense system will have on the security ties between the U.S. and Western Europe. Interest in whether America's other allies and friends such as Japan, Korea and Israel will participate in SDI research has surfaced as well.[2] The attitude of the People's Republic of China toward SDI has only recently come under scrutiny.[3] The emphasis so far in these and other discussions of the allied implications of SDI has been more on the political than the military dimension of the problem. Governments and defense analysts are currently more concerned about assessing the short-term defense, diplomatic, and financial impact of SDI on America's allies than on the more fundamental question of how deployed strategic defenses by the world's superpowers could affect the global and regional strategic balances of power.

Thus far the discussion of the U.S. foreign policy implications of SDI has proceeded in a geopolitical and geostrategic vacuum. To be sure, strategists have addressed the probable impact of SDI on the stability of nuclear deterrence, but not much has been said about the effect U.S. and Soviet strategic defenses would have on the overall

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1. See Manfred R. Hamm and W. Bruce Weinrod, "The Transatlantic Politics of Strategic Defense," Orbis, Winter 1986, pp. 709-34; also see Christoph Bertram, "Strategic Defense and the Western Alliance," Daedalus, Summer 1985, pp. 279-96.

2. See Richard D. Fisher, Jr., "The Strategic Defense Initiative's Promise for Asia," Heritage Foundation Asian Studies Center Backgrounder No. 40, December 18, 1985.

3. Bonnie S. Glaser and Banning N. Garrett, "Chinese Perspectives on the Strategic Defense Initiative," Problems of Communism, March-April 1986, pp. 28-44.

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global balance of power. For example, how would nationwide strategic defense systems in the U.S. and the Soviet Union affect the balance of power in the so-called U.S.-Soviet-China strategic triangle?. This is a very important question, not only because of the strategic importance of these countries but also because keeping the peace between the U.S. and the Soviet Union depends very much on the behavior of third countries like the People's Republic of China. If the United States is to understand the full impact of SDI on its relations with other countries, it would be wise to begin with an analysis of its impact on the balance of power between the three most powerful nations on earth.

Understanding how strategic defenses could alter this balance of power is important to the United States for a number of reasons. First, there is the very obvious need to assess whether nationwide strategic defense deployments in the the United States and the Soviet Union would stabilize nuclear deterrence and thereby enhance the prospects of peace. Secondly, since Moscow currently is engaged in a vigorous strategic defense research program of its own, the U.S. needs to understand how a large-scale ballistic missile defense system deployed in the Soviet Union could affect the deterrent capability of Chinese nuclear forces, which play a growing countervailing role against Soviet military power. And thirdly, American leaders need to be apprised of how other military factors such as the Sino-Soviet conventional balance of power should be evaluated in a new defense-dominant strategic environment in which both the U.S. and USSR have built large-scale space-based strategic defense systems.

CONTOURS OF THE STRATEGIC DEFENSE INITIATIVE

The Strategic Defense Initiative arose as a response to four basic changes in the strategic environment of the early 1980s. First was the realization that the arms control process, as embodied in the ABM and SALT II agreements, had not constrained the arms race in any significant way. The SALT treaties merely put limits on already high levels of strategic arms, permitting the Soviet Union to deploy eight new strategic ballistic missiles, five new ballistic missile submarine classes, 4,000 additional ballistic missile warheads, and a new strategic bomber since the time SALT I was signed.[4] The second was the failure of the Soviet Union to adopt in the wake of the Anti-Ballistic Missile (ABM) treaty the mutual assured destruction assumptions implicit in much of U.S. strategic thinking. While the U.S. dismantled its anti-ballistic missiles and strategic air defense systems, Moscow continued to develop and deploy successive generations

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4. Speech by Robert C. McFarlane, March 7, 1985; "Statement by the Principal Deputy Press Secretary," Office of the Press Secretary, The White House, May 27, 1986.

of anti-ballistic missiles, tracking radars, interceptor aircraft, and surface-to-air missiles dedicated to ballistic missile and air defense. Moreover, the Soviets built a new phased-array radar at Krasnoyarsk in central Siberia that is clearly a violation of the ABM treaty. It also conducted research on advanced strategic defense technologies, including directed energy weapons, at a much faster pace in the 1970s and early 1980s than the U.S.[5] Third, the discovery that the USSR had violated both the SALT II and ABM treaties cast doubts on the ability of the existing arms control regime to provide long-term stability. And, finally, technological changes in recent years overturned the belief prevalent at the time of the signing of the ABM Treaty that effective strategic defenses were technically impossible. Breakthroughs in directed energy research, sensor technologies, optics, electromagnetic energy guns, and space transportation concepts offered the promise that a militarily adequate and cost-effective strategic defense system was possible.

The aim of President Reagan's stated goal to make nuclear weapons "impotent and obsolete" is to create a new defense-dominant strategic environment in which offensive nuclear arms would gradually lose their primary military utility relative to defensive ones. Most strategic defense proponents neither expect nor even strive for a system that will provide perfect defenses. By making it difficult for a potential aggressor to predict his own vulnerability in the face of uncertainties about the success of his aggression, strategic defense can create an effective deterrent posture based not on the threat of offensive retaliation but rather on the defensive denial of military objectives. Nor do most defense and arms control officials in the Reagan administration believe that SDI will be exclusively defensive. A defense-dominant strategic environment in which both sides have strategic defenses will inevitably include residual offensive forces capable of testing the effectiveness of the opponent's strategic defense system. These offensive forces may be "Stealth" long-range cruise missiles or strategic bombers. They may even be advanced ICBMs equipped with devices which can enhance the ability of a warhead to foil strategic defenses. But the penetration capability of these weapons will not obviate the deterrent capability of strategic defense systems capable of keeping out most offensive weapons. Rather, it will complicate an enemy's plans for a first strike and caution him against aggression. The hope is that a defense-dominant system in conjunction with offensive arms reductions will gradually diminish the military utility of offensive nuclear weapons and thus shift investment of military resources from offensive to defensive forces.

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5. Ibid.

The policy guidelines for SDI are determined by both military and political factors.[6] The immediate purpose of the SDI program is to discover the technological and engineering feasibility of the most comprehensive strategic defense system possible. The guidelines for SDI research are political as well, insofar as research must be conducted in compliance with the ABM treaty. Furthermore, SDI must either be cost-effective--that is, it must be cheaper and easier to add defensive capability than offensive capability--or its cost must be judged by the less stringent standard of asking how much is "affordable" to defend the U.S. against nuclear weapons; the Reagan administration is still divided on which approach to take.[7] Other guidelines include that strategic defense be survivable against attack, otherwise its deterrent capabilities would be meaningless, and that defensive systems not decouple the security of Western Europe from the United States. The extended offensive deterrent posture necessary for the security of NATO therefore must be kept in place until a decision is reached on SDI deployment. Finally, the U.S. plans to use the arms control process to negotiate a transition toward a new strategic regime of assurance and stability based on defensive systems. The unspoken aim is to convince Moscow that using arms control to regulate the transition is safer for them than an unconstrained defensive technology race with the U.S. in which the Soviets could very well lose.

The salient architectural features of the SDI program are the layered-defense configuration concept and its heavy emphasis on advanced defense technologies such as directed energy weapons and advanced sensors.[8] The layered defense system envisages the ability to attack missiles and warheads throughout the entire span of the missile's flight path. This multiplies the opportunities to destroy the enemy's offensive systems and thereby increases the effectiveness of the strategic defenses. The heavy emphasis on advanced technologies reflects the belief of the Strategic Defense Initiative Organization (SDIO) that advanced space-based systems will be required to achieve this layered defense. Currently the highest priority for SDIO is research on sensors to identify, track, and target enemy missiles and warheads and to discriminate between real targets and

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6. McFarlane, op. cit., p. 3.

7. Ibid.; Charles Mohr, "Chief of Missile Defense Project Seeks to Reshape Policy on Costs," The New York Times, May 1, 1986.

8. See The President's Strategic Defense Initiative (Washington, D.C.: U.S. Government Printing Office, January 1985), pp. 1-2; also see U.S. Congress, Office of Technology Assessment, Ballistic Missile Defense Technologies, OTA-ISC-254 (Washington, D.C.: U.S. Government Printing Office, September 1985), pp. 139-194.

decoys. The fiscal year 1987 request for these programs was $1.26 billion of a $4.8 billion SDI budget.[9] The second priority is directed energy and kinetic-kill weapons, which accounts for $1.6 billion of the requested FY 1987 SDI budget. Many of these weapons may be stationed in space, which some consider to be an indispensable requirement for a three-tiered space-based strategic defense system.

THE SOVIET STRATEGIC DEFENSE PROGRAM

The fundamental disagreement between the United States and the Soviet Union over the Strategic Defense Initiative centers on differing interpretations of the Anti-Ballistic Missile (ABM) Treaty of 1972. Whereas the United States maintains that pure research and some testing of advanced ballistic missile defense technologies are legal under the ABM Treaty, the Soviet Union insists that "laboratory" research might be permitted but testing of any kind is not.

It is impossible to know for certain what the main objectives of Moscow's anti-SDI campaign are, but a few educated guesses are in order: 1) to constrain as much as possible U.S. research, development, and testing of advanced technologies that can be applied to a space-based strategic defense system, while allowing Soviet ballistic missile defense research and development to continue unhindered; remembering the lost race to the moon in the 1960s, the Soviets very likely do not want to engage in a space race over ballistic missile defense technologies, which the Americans would most likely win; 2) to block Western research and development of advanced strategic defense technologies which can be applied to conventional weaponry as well as ballistic missile defense; 3) to divide the NATO alliance by exacerbating differences of opinion between Western Europeans and Americans over the nature and value of the existing doctrine of offensive deterrence; and 4) to prevent the deployment of even limited Western ballistic missile defenses that would reduce the effectiveness of a Soviet counterforce or "first strike" against Western strategic targets.

Despite its opposition to SDI, Moscow has been conducting research on ballistic missile defense ever since the missile age began. Since the 1950s, the Soviet Union has spent much time, money, and effort to develop a strategic defense against ballistic missile attacks. According to Under Secretary of Defense for Policy Fred C. Ikle, the Soviet Union has spent slightly more on active defenses

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9. Defense News, February 10, 1986, p. 18.

since the signing of the ABM Treaty than on its nuclear offensive forces, but adds that the bulk of it went into air defense.[10] Moreover, since 1975 Moscow has spent $60 billion more on strategic defense procurement than the U.S.[11] The USSR complements its strategic offense and strategic defense missile forces with a national civil defense program as well. Unlike American strategists, Soviet military planners have always regarded some form of BMD as technologically possible and militarily desirable.

Soviet ABM research began shortly before Stalin's death. In April 1960 a U-2 reconnaissance flight discovered an anti-ballistic missile testing range at Sary Shagan, Siberia, and observed BMD-related activities at a small village on the edge of Lake Balkash in Central Asia.[12] U-2 flights revealed that a major program was already underway by 1960 and that progress had been made on a very large radar that could be used to track missiles for an ABM system. In 1957 an independent organization was established within the Soviet Air Defense Forces to handle ballistic missile defense.[13] In 1962 the Soviets deployed their first anti-ballistic missile system around Leningrad, the "Griffon" ABM. It was followed in 1964 by an ABM known as the "Galosh," which is a ground-based, nuclear-tipped missile designed to intercept enemy warheads in space before they reenter the earth's atmosphere.

The Moscow ABM system (dubbed ABM-X-3) is currently being modernized to consist of a two-layer defense composed of silo-based, long-range, modified Galosh interceptors (designated the SH-11).[14] To improve their capability to intercept warheads the Soviets are developing a new silo-based, high acceleration anti-ballistic missile (SH-08) that can discriminate between real reentry vehicles and decoys inside the atmosphere. The new system will have the full allotment of 100 ABMs permitted by the ABM treaty. It will also have an improved warning system consisting of new launch detection satellites and a new

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10. See Keith B. Payne, Strategic Defense: "Star Wars" in Perspective (Lanham, Maryland, and London: Hamilton Press, 1986), p. 47. The Soviets have the largest air defense system in the world; it has 9,600 SAM launchers (the U.S. has none in North America), 1,200 homeland defense interceptor aircraft (300 for the U.S.), and 6,300 radars (the U.S. 100).

11. Payne, op. cit., Figure 3, p. 49.

12. Sayre Stevens, "The Soviet BMD Program," Ballistic Missile Defense, Ashton B. Carter and David N. Schwartz, eds. (Washington, D.C.: Brookings Institution, 1984), p. 191.

13. David B. Rivkin, Jr. and Manfred R. Hamm, "In Strategic Defense, Moscow Is Ahead," Heritage Foundation Backgrounder, No. 409, February 21, 1985, p. 5.

14. Ibid., p. 43.

network of phased-array radars that stretch in a giant arch from the Caucasus mountains to Krasnoyarsk in Siberia.

The phased-array radar station at Krasnayorsk in South Central Siberia performs the functions of early warning, tracking, and missile detection. A consensus exists in the U.S. that the Krasnoyarsk station violates the ABM treaty because it is located in the interior of the country and is pointed inward, not outward, as is required by the ABM treaty.[15] Moreover, the Moscow ABM "Flat Twin" tracking radar may violate the ABM Treaty as well. It is transportable and modular insofar as it can be disassembled, moved, and reassembled in a few months. The Arms Control and Disarmament Agency's February 1986 report on Soviet noncompliance with arms control treaties concluded that Soviet mobile ABM radars "represent a potential violation of its legal obligation under the ABM Treaty."[16]

Upgrading of the Galosh system has progressed over the years to the point where the Department of Defense believes that Moscow now has the capability to rapidly "break out" of the ABM treaty and can deploy new ABM systems "in a matter of months rather than years" to form a national network of ABM sites.[17] Even a limited breakout of the ABM Treaty by the Soviet Union would seriously undermine the U.S. nuclear deterrent by degrading the effectiveness of a ragged retaliatory strike. The threat of ABM breakout is significant because many Soviet ABM systems are mobile and capable of being secretly manufactured and stored in very large numbers, and because the Soviets' immense air defense system is equipped with SAMs, which may be capable of doubling as anti-ballistic missiles. According to Sayre Stevens, a former CIA official and Soviet BMD expert:

> Substantial expansion of the Moscow defenses beyond treaty limits could occur rapidly. If such an expansion could allow a preferential defense of certain critical components such as hardened command bunkers, a militarily significant capability could be achieved.[18]

The Soviets launched a substantial research program on strategic defense technologies in the late 1960s before the ABM treaty was signed in 1972. They have over 10,000 scientists working intensively at a half dozen major research and development centers on four

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15. U.S. Arms Control and Disarmament Agency, Soviet Noncompliance (Washington, D.C.: Government Printing Office, 1986), pp. 1-2.

16. Ibid., p. 4.

17. U.S. Department of Defense, Soviet Military Power (Washington, D.C.: U.S. Government Printing Office, 1986), p. 45.

18. Stevens, op. cit., p. 214.

important areas of strategic defense technology: 1) high energy laser research; 2) particle-beam weapons; 3) radio frequency weapons; and 4) kinetic energy weapons.[19] In 1984, then Director of the Defense Advanced Research Projects Agency (DARPA), Robert Cooper, stated that Soviet spending on laser research was around three to five times greater than that of the U.S.[20] Moreover, not only did Moscow begin work on the X-ray laser before the United States but it operated the world's first excimer laser in 1970.[21] While the U.S. is ahead of the Soviet Union in some BMD-related technologies (such as microelectronics, sensors, and high-speed data processing) that will be applicable to strategic defense at some point in the distant future, the Soviets are ahead in ballistic missile defense technologies such as anti-tactical ballistic missiles, radars, some lasers, and particle beams that may have near-term application.

Moscow may be already testing ground-based laser anti-satellite systems that could become operational against ballistic missiles by the mid-1990s if an accelerated development schedule were followed.[22] According to Paul Nitze, President Reagan's arms control advisor, a ground-based laser system capable of interfering with low-altitude U.S. satellites could be available by the end of the 1980s.[23]

It is highly likely that the Soviet Union would deploy a laser weapon system before it was in perfect operating order. In the USSR the time between laboratory development and deployment of weapon systems is normally far less than in the U.S. While the U.S. tends to field weapons of greater technological maturity in comparatively smaller numbers, the Soviet Union often deploys weapons before they are technologically mature. Soviet "firsts" include the first deployed ICBM, the first deployed SLBM, and the first deployed ABM, even though research on these weapons systems was at the time more

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19. Ibid., p. 47.

20. U.S. Senate, Committee on Armed Services, Department of Defense Strategic Defense Initiative, Authorization for Appropriations for Fiscal Year 1985, hearing, 98th Congress, 2nd Session (Washington, D.C.: Government Printing Office, 1984), Part 6, p. 2974.

21. Roger P. Main, "The USSR and Laser Weaponry: The View from Outside," Defense Systems Review, vol. 1, no. 3 (1985), pp. 67-68, 71, 76-77.

22. Soviet Military Power, op. cit., p. 44. Also see "White House Assesses Reports of Soviet ASAT Laser Facilities," Aviation Week and Space Technology, September 15, 1986, p. 21.

23. Paul Nitze, SDI: The Soviet Program, Current Policy No. 717 (Washington, D.C.: Bureau of Public Affairs, U.S. Department of State, June 28, 1985), p. 2.

advanced in the United States.[24] Thus one should not be surprised if the Soviets were to proceed with the deployment of immature space-based defense systems before the U.S. did. Even though the U.S. has a more advanced general technology base than the Soviet Union, it may trail actual strategic defense deployments by the Soviets because of its penchant for deploying only highly tested, mature military weapons.

Another important element in judging Moscow's capacity to build a nationwide strategic defense system is the Soviet space program. The USSR devotes at least 70 percent of its space launches to military purposes.[25] According to a 1980 U.S. Senate report, the launch tonnage capacity of Soviet rockets is about nine times greater than the annual level for the U.S.[26] Moreover, Soviet space technicians are already designing powerful rocket boosters that will be capable of carrying heavy payloads into space. This space-lift capacity puts Moscow in a far better position than the U.S. to launch lasers, sensors, and other strategic defense systems quickly into space once they are developed.

All these ballistic missile defense projects exist in order to serve the broader military strategy of the Soviet Union. Soviet strategists believe that less than perfect ballistic missile defenses have significant military utility because they protect the Soviet Union's capacity to wage war; i.e., they protect leadership command and control centers, nuclear missile silos, military installations, and industrial sites from Western retaliatory attacks.[27] If Moscow should ever decide to attack the United States or its allies, it hopes to deter the use of nuclear weapons by the West. But if deterrence should fail, Moscow plans to prevail in a protracted nuclear struggle by destroying the West's capability to wage war and to minimize the damage to the Soviet homeland by taking active and passive defensive measures against Western nuclear attacks.[28] A secondary mission of ballistic missile defenses is to protect against limited nuclear

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24. Stephen M. Meyer, "Space and Soviet Military Planning," in William J. Durch, ed., National Interests and the Military Use of Space (Cambridge, Massachusetts: Ballinger Publishing Company, 1984), p. 81.

25. Soviet Military Power, op. cit., p. 51.

26. Testimony in 1977 by Malcolm A. Currie in Soviet Space Program: 1976-1980 (Washington, D.C.: U.S. Government Printing Office, 1982), Part 1, p. 13.

27. See Stevens, op. cit., pp. 185-188.

28. Active defenses use weapons systems to protect national territory, military forces, or other strategically important targets from missile attack. Passive defenses are nonweapon measures such as civil defense and the hardening of missile silos with concrete.

strikes launched by accident or by smaller nuclear powers such as China, France, or Great Britain.

Thus, according to Soviet military doctrine, the military mission of ballistic missile defense to limit damage caused by Western nuclear strikes may be tactically defensive, but it is strategically offensive. The large Soviet arsenal of time-urgent, hard-target capable, land-based ICBMs gives Moscow the capability to destroy all 31.he some 1,500 value targets in the U.S. (such as land-based missile silos, strategic airfields, and strategic submarine ports) with around 80 percent effectiveness before they can be used against the Soviet Union.[29] The Soviet nuclear strategy, which these large missile forces are intended to execute, envisages a preemptive or "first" strike against the U.S. as a means to limit damage against the Soviet Union.

CHINESE SECURITY PERSPECTIVES ON STRATEGIC DEFENSE

Chinese objections to SDI focus on the PRC's perceived adverse impact on the global strategic nuclear balance. Most Chinese officials contend that SDI will lead to a U.S.-Soviet arms race that will destabilize superpower relations.[30] They maintain that a Soviet buildup of strategic forces to overwhelm U.S. strategic defenses will erode the credibility of China's nuclear deterrent. An expanded Soviet ballistic missile defense system designed primarily to counter U.S. offensive forces will cast doubt on the capability of China's small nuclear force to retaliate against a Soviet first strike. China has fashioned its doctrine of retaliating with a minimal nuclear force against Soviet cities with the global nuclear balance in mind.[31] It is based not only on the concept of superpower parity but on the doctrine of mutual assured destruction. Most Chinese officials and many Chinese defense experts believe that SDI threatens this strategic environment on both counts: by unleashing an

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29. See Zbigniew Brzezinski, Game Plan: How to Conduct the U.S.-Soviet Contest (Boston and New York: Atlantic Monthly Press, 1986), p. 106. Also see Arms Control and the Arms Race: Readings from the Scientific American (New York: W. H. Freeman & Co., 1985), p. 110.

30. Glaser and Garrett op. cit., pp. 28-44.

31. Gerald Segal, "China's Nuclear Posture for the 1980s," Survival, XXIII:1, January/February 1981, pp. 12-13. Also see Segal, "China's Strategic Posture and the Great-Power Triangle," Pacific Affairs, Winter 1980-81, pp. 682-697; and Sino-Soviet Relations after Mao, Adelphi Papers No. 202 (London: International Institute for Strategic Studies, 1985), pp. 21-23. Also see Allen S. Whiting, "China and the Superpowers: Toward the Year 2000," Daedalus, Fall 1980, pp. 98-101.

offensive and defensive arms race in which they cannot compete, and by dismantling the mutual assured destruction regime in which China's small retaliatory forces can best deter a Soviet attack.[32]

Another security concern for the Chinese is that U.S.-Soviet competition in strategic defense research and development could increase the threat posed by Soviet conventional armaments.[33] Advanced strategic defense technologies such as directed-energy lasers, sensors, and high-velocity kinetic-kill interceptors could possibly revolutionize conventional warfare. Advanced ballistic missile defenses may prove to be effective against short-range conventional ballistic missiles as well. Other strategic defense technologies may someday have a significant impact on Soviet air defense capabilities and armor warfare. Some Chinese fear that a U.S.-Soviet advanced defense technology race would leave them behind. They believe it could nullify recent gains made in the modernization of Chinese conventional forces and possibly tip the conventional arms balance along the Sino-Soviet border even more in favor of Moscow. At best, many Chinese officials argue, it could throw China into an expensive conventional arms race with the Soviets in which they are already behind, and which could force the diversion of funds away from the economic modernization program that is behind China's opening to the West.

The Chinese generally believe that the United States intends to use SDI to enhance its position in the global balance of power.[34] According to this viewpoint, the U.S. intends to use SDI to widen its technological lead over the Soviet Union and to change the strategic balance as well. Some Chinese believe, in fact, that the U.S. seeks a first-strike capability with SDI. The Chinese suspect that the Soviets, on the other hand, oppose SDI because they fear the technological competition of the U.S. in space-based defensive systems. The Chinese insist that the Soviets are not against the actual deployment of space-based defensive systems per se but against the U.S. stationing more advanced space-based systems ahead of them. Thus, the Chinese assume that Moscow will attempt to block SDI with propaganda, peaceful overtures to the Europeans and Chinese, and arms control proposals designed to sacrifice near-term, space-based

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32. No consensus exists among Chinese defense experts on SDI, although most agree that it will stimulate offensive arms competition between the U.S. and the USSR. A minority opinion exists, however, primarily among Chinese military analysts, that SDI is defensive and could be stabilizing; see Glaser and Garrett, op. cit., pp. 32, 36.

33. Ibid., p. 30.

34. Ibid., pp. 30-33.

strategic defense deployment in return for unilaterally favorable reductions of existing offensive forces.

THE IMPACT OF SDI ON THE U.S.-SOVIET STRATEGIC BALANCE

The past fifteen years have witnessed the steady growth of Soviet strategic forces. At one time the United States enjoyed clear nuclear superiority over the Soviet Union. Today, however, Moscow possesses clear superiority in key categories of nuclear weaponry, and its strategic modernization programs are moving in a direction that promises a most unstable global strategic environment in the future. Building on a superiority in numbers of hard-target-kill capable, land-based ICBMs, the Soviets are now or will soon be deploying a new generation of strategic missiles (SS-24s and SS-25s) more capable than any U.S. missiles in production. They currently enjoy at least a 4-to-1 advantage over the U.S. in ICBM throw-weight, which is the best single measure of nuclear force capability. And notwithstanding the deployment of U.S. intermediate-range nuclear missiles in Europe, Moscow will still enjoy clear superiority over the U.S. in numbers of tactical nuclear warheads in the European theater.

But it is primarily the asymmetry in force structure capabilities that is potentially so destabilizing. The Soviet Union currently enjoys a 3-to-1 advantage over the United States in counterforce ICBM warheads.[35] Thus the Soviets could theoretically destroy most of the U.S. ICBM force using only a fraction of their ICBM warheads in a first strike and still have a significant ICBM and SLBM force in reserve to deter U.S. retaliation.[36] Concern about the growing vulnerability of U.S. land-based strategic forces is not limited to officials in the Reagan administration. Democratic critics of the administration opposed the deployment of 100 MX missiles and support the development of the small mobile "Midgetman" missile precisely because of their concerns about U.S. ICBM vulnerability.

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35. This is counting Soviet SS-18s and SS-19s, which carry hard-target kill warheads, and the U.S. Minuteman III, which has only limited counterforce capability.

36. Committee on the Present Danger, Can America Catch Up? (Washington, D.C.: The Committee on the Present Danger, 1984), p. 15. The Soviets currently have around 5,200 hard-target-kill capable warheads deployed on ICBMs (i.e. SS-18s and SS-19s). The U.S. has only 1,014 ICBMs. Thus Moscow has a 5-to-1 ratio of warheads to U.S. missile targets, which leaves ample resources left over for other counterforce missions. The Scowcroft Commission concluded that the Soviets had a theoretical first strike capability; see "Report of the President's Commission on Strategic Forces," Department of Defense, Washington, D.C., April 1983, p. 4.

The ICBM pre-launch survivability problem is a key but not the only factor behind the decision to initiate the SDI program. Protecting U.S. strategic forces from a preemptive Soviet attack is a critical objective of SDI. The growing vulnerability of U.S. strategic forces raises doubts about whether the U.S. can hold Soviet strategic assets at risk during all possible phases of conflict, which is the goal of current U.S. strategic doctrine. If the U.S. cannot count on having sufficient counterforce weapons to threaten Soviet strategic ballistic missiles after a first strike, it cannot with confidence deter the Soviets from further aggression or escalation after a limited nuclear exchange or Soviet preemptive nuclear attack on U.S. ICBMs. Thus the only alternative left to the U.S. after a nuclear exchange is to attack Soviet cities, which is not only militarily meaningless but certain to result in Soviet retaliation against U.S. cities. Thus by being totally vulnerable to Soviet first strikes and retaliations, the U.S. finds itself in a nuclear balance situation that may be relatively stable in peacetime but could become disastrously unstable in wartime. If war with the Soviet Union should ever break out, the U.S. would have to calculate its responses on the basis of the known vulnerabilities of its land-based ballistic missile force. This could mean either too much timidity or taking too many risks, either of which could end up in disaster.

SDI is seen as a means to restore the credibility of the U.S. deterrent posture. Envisioning a mix of offensive and defensive forces, proponents of SDI insist that a new defense-dominant strategic environment will not only protect millions of Americans from nuclear attack, but also redress some of the many strategic problems which are undermining the credibility of U.S. deterrence doctrine. The aim is to deploy a strategic defense system effective enough to alter the calculus of deterrence. A strategic defense system need not be 100 percent effective to achieve the stability envisioned by SDI supporters. A layered defense consisting of boost-phase, mid-course, and terminal interception can multiply the defensive effect of the system by attacking enemy vehicles throughout the entire course of the missile's trajectory. A layered defense consisting of boost-phase, post-boost, and mid-course phases could be combined with a preferential point defense system to reach very high degrees of effectiveness. However, all that is really required are mere adequate defenses capable of destroying around 60 to 70 percent of an enemy's warheads. This degree of protection would deny an opponent the ability to pinpoint specific military targets with a high degree of certainty. By rendering a successful first strike impossible to calculate, strategic defenses would force a potential aggressor to consider other options, such as ballistic missile defenses of his own, for enhancing his security. Thus strategic defense can contribute to a new form of deterrence based not on punitive sanction but on strategic denial.

The denial capability of strategic defense could restore the strategic balance in the following ways. It could blunt the Soviet first strike capability by protecting the very strategic forces that the U.S. needs for retaliation and deterrence. It will complicate Soviet military planning and raise the level of uncertainty about the consequences of aggression. It will reduce the fear of nuclear weapons that could lead to dangerous miscalculation in times of crisis. If deployed on both sides, it introduces a new defensive dynamic in the arms competition, which could gradually funnel economic resources into defensive efforts and thereby stabilize the arms balance by reducing the mutual threat of offensive attack. And it could reduce the likelihood of an offensive arms race because more security can be achieved by deploying defenses than more offenses. By reducing the preemptive capabilities of offensive forces, SDI could reduce the growing risks associated with counterforce nuclear weapons. It could help to reverse the existing strategic trend that places more military utility on preemption than retaliation. Under these circumstances it may be possible that the addition of greater and greater numbers of offensive arms to "saturate" the defense would over time become less militarily useful than building strategic defenses that protect nuclear and conventional forces and population and industrial centers.

THE IMPACT OF SOVIET STRATEGIC DEFENSE ON THE SINO-SOVIET BALANCE

The Soviet Union maintains an overwhelming superiority over China in strategic nuclear forces. The Chinese have deployed 140 to 150 nuclear ballistic missiles against Moscow's 979 sea-launched ballistic missiles (SLBMs), 1,398 ICBMs, and 543 medium-range missiles (MRBMs).[37] The Soviets have stationed around 200 SS-20s east of the Urals Mountains, presumably for targets in China and Japan.[38] China's nuclear strategy for deterring Soviet aggression rests on the threat of retaliation against Soviet cities. It also rests on the residual deterrent capabilities of U.S. nuclear forces, which pose a threat distinct from but in tacit strategic cooperation with Chinese

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37. See The Military Balance 1985-1986 (London: The International Institute for Strategic Studies, 1985), pp. 21, 113; and "The Missile Tables," Defense and Foreign Affairs, March 1986, Table 1, p. 16. Total Chinese nuclear forces include four CSS-4 ICBMs, 10-12 CSS-3 ICBMs, 90 intermediate-range CSS-2 missiles, and 50 medium-range ballistic missiles designated the CSS-1. IISS claims that 2 Xia-class submarines with 12 CCS-NX-4 sea-launched ballistic missiles each have been launched. Four SSBNs with 16 launch tubes may be on order as well.

38. "Quick Accord on Missiles Seen Unlikely," The Washington Post, September 23, 1986.

nuclear forces. China has neither the quality nor the sufficient numbers of missiles to adopt a "counterforce" strategy of targeting Soviet nuclear weapons and other military forces. Thus the only credible risk China's nuclear force poses to Moscow is the possibility of inflicting an unacceptable amount of damage to Soviet cities with a limited number of missiles left over after a Soviet attack.

The credibility of China's "countervalue" strategy of minimal deterrence against Soviet population centers is only as good as the ability of its nuclear forces to reach specific Soviet targets. Peking has only six land-based ICBMs with enough range to cover the entire Soviet Union. Other intermediate and medium-range forces can cover only the southern portions of the Soviet Union. The Chinese thus do not have a great deal of flexibility in choosing so-called "countervalue" or "soft" (i.e. undefended) targets in areas of dense population. They can always hold out the threat of some missiles reaching Soviet cities, but they cannot be certain of which ones.

A Soviet strategic defense system would only reinforce this inflexibility in Chinese nuclear strategy. It would degrade the penetrability of Chinese ballistic missiles and thereby cut back even further on Peking's ability to destroy specific targets. To be sure, Chinese nuclear forces do not require the same high degree of accuracy or explosive yield of Soviet counterforce missiles because Peking does not target military forces. But at such low numbers of ICBMs an expanded Soviet ABM system consisting of upgraded Galosh interceptors and ABM-tested SA-5, SA-10, and the advanced SA-X-12 surface-to-air missiles could seriously blunt a Chinese retaliatory strike against the Soviet Union. An advanced Soviet space-based strategic defense capable of reducing leakage even further would only reinforce the confidence with which Moscow could contemplate a preemptive strike against Chinese nuclear forces. China could still count on at least some warheads reaching their targets, but their number might be low enough for the Soviets to calculate the risk of a first strike in terms of acceptable damage.

Nevertheless, the Chinese would still retain a residual deterrent capability in spite of deployed Soviet strategic defenses. Moscow could never be certain of intercepting all Chinese ballistic missile warheads. Moreover, the Soviets must always be confident that enough strategic forces would be available after a first-strike against China to threaten the United States. The risk of an adverse reaction from the United States or a protracted Sino-Soviet conventional war would continue to create uncertainties in the mind of Soviet leaders. Thus although Moscow's first strike capability would be increased operationally, it would still be tempered at the strategic level of deterrence by the global nuclear balance and China's conventional warfare capabilities.

Soviet strategic defenses would have a similar effect on the pre-launch survivability of Chinese nuclear forces. The Soviet Union

has well over 600 medium- and intermediate-range ballistic missiles, primarily SS-20s and SS-4s, with around 200 of the triple-warhead SS-20s deployed east of the Urals.[39] Moscow could theoretically threaten China with any number of its total 2,380 intercontinental ballistic missiles stationed on land and at sea. Its strategic forces are more than enough to knock out most of China's land-based nuclear forces in a preemptive strike. If the Soviet Union's 308 SS-18 ICBM force is capable of eliminating 90 percent of the U.S. land-based strategic forces, as the U.S. Department of Defense claims, then it can certainly achieve an even greater kill-probability against a much smaller Chinese force.[40] The Chinese have tried to enhance the pre-launch survivability of their missiles by hardening and camouflaging their silos, but they are behind the Soviets and the U.S. in these and other passive defense techniques. A Soviet strategic defense system, whether built on the existing ground-based Galosh ABM system or deployed in space, would add to Moscow's confidence in launching a preemptive strike against Chinese strategic forces. The combination of a first strike capability and effective strategic defenses would practically ensure that only a small number of missiles from a retaliatory Chinese nuclear attack would reach Soviet territory. Again, the calculus of deterrence is based on factors other than the Sino-Soviet nuclear balance, so a Soviet strategic defense system would not make Soviet preemption inevitable. It would, however, make it a more attractive option if the need ever arose to exercise it, especially in an unpredictable wartime situation.

Soviet strategic defenses could pose a threat to future Chinese tactical nuclear systems. At the moment Chinese medium-range ballistic missiles seem to be intended exclusively for deterrent or retaliatory purposes. However, according to William T. Tow, the Chinese have it within their grasp to build a tactical nuclear force capable someday of battlefield use against the Soviets.[41] A Soviet strategic defense system capable of intercepting short and medium-range ballistic missiles could halt Chinese plans to deploy a tactical nuclear force. Whether it would do so depends primarily on the research and development race between Soviet ATBM systems and Chinese tactical nuclear weapons technologies. ATBM technologies are more promising for near-term deployment on the ground than space-based strategic defense systems against ICBMs. Moreover, the Soviet Union

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39. The Military Balance, op. cit.

40. Desmond Ball of the Australian National University claims that no more than approximately 15 percent of Soviet ICBM warheads need be reserved for use against China; Desmond Ball, "The MX Basing Decision," Survival, 22, March/April 1980, p. 61.

41. William T. Tow, "Developing Chinese Strategic Responses to Soviet Military Power," China, the Soviet Union, and the West (Boulder, Colorado: Westview Press, 1982), p. 151.

currently has more potential than the U.S. to deploy ATBMs in a relatively short period of time. It therefore cannot be entirely ruled out that a limited Soviet ATBM system based on existing technology could be deployed in time to meet some future Chinese tactical nuclear missile threat.

The impact of a Soviet strategic defense system on the Sino-Soviet conventional balance is difficult to assess. In recent years the Chinese have been moving away from a passive, defensive "people's war" strategy of drawing Soviet forces into a protracted guerrilla war inside Chinese territory.[42] They have modernized their military equipment and developed new active defense tactics based on combined-arms operations and large-scale maneuvers. The Soviets, on the other hand, have upgraded the quality and operational effectiveness of their forces along the Sino-Soviet border. They have also begun fielding a new generation of short-range conventional ballistic missiles (SS-21s, SS-22s, and SS-23s) which will enhance their ability to eliminate Chinese nuclear installations without resorting to nuclear weapons.

A Soviet ATBM defense system for the Far Eastern theater could have only an indirect impact on the Sino-Soviet conventional force balance. The Chinese currently lack the technology to build short-range conventionally armed ballistic missiles accurate enough to threaten Soviet nuclear forces. However, a Far Eastern ATBM system could clearly protect Soviet conventional forces and other military targets from Chinese tactical nuclear missiles that may soon possess the requisite accuracy for battlefield use. Thus a Far Eastern Soviet ATBM defense capability could shift the Sino-Soviet conventional force balance even more in Moscow's favor. This, in turn, would change Peking's deterrence calculus: It would force China to depend even more on its inferior conventional forces to stop a Soviet conventional attack if nuclear deterrence should fail. If coupled with a strategic defense against ICBMs, a Soviet Far Eastern theater ATBM defense system could thus diminish China's emerging nuclear deterrent capability and thereby put much of the onus for maintaining strategic deterrence back on the theater balance of Sino-Soviet conventional weaponry.

However, the most likely immediate reaction of the PRC to the deployment of Soviet strategic defense systems would be to accelerate its nuclear modernization program. Instead of increasing production goals for the CSS-4 ICBM, a liquid-fuel missile highly vulnerable to Soviet preemptive strike, the Chinese would most likely increase production of sea-based missiles like the CSS-N-2 and develop more advanced solid-fuel and mobile land-based missiles capable of greater survivability. Other measures could include the development of

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42. Segal, Sino-Soviet Relations After Mao, op. cit., p. 18.

technical and tactical countermeasures to thwart Soviet defenses, the development of an anti-satellite system (ASAT) to attack Soviet space-based defenses, and once the technology were available, the development of a limited ground-based ballistic missile point defense system around missile silos and other key nuclear installations.

Soviet strategic defense systems could also persuade the Chinese to expand their conventional forces. The Soviets could reason that the effectiveness of their strategic defense system would make a Chinese nuclear retaliatory strike strategically meaningless and possibly suicidal. Left without a credible nuclear deterrent, the Chinese could calculate that vastly expanded and modernized conventional forces would be the only means of defense against a limited Soviet incursion into northern Chinese territory with conventional forces. The Chinese deterrent now rests on a twin threat: minimal nuclear deterrence and the prospect of a protracted conventional conflict that the Soviets could not possibly bring to a favorable conclusion. A degradation of the first threat could logically lead to an upgrading of the second.

CONCLUSION: THE IMPACT OF STRATEGIC DEFENSES ON THE U.S.-SOVIET-CHINA STRATEGIC BALANCE

A new strategic defense-dominant environment based on offense-defense mix of weaponry will prove to be more stable than the current offense-dominant force postures now in the U.S. and Soviet arsenals. Although deterring war for the time being, the current offense-dominant environment is potentially dangerous, especially after hostilities have already begun with conventional means. It puts a premium on the kinds of threats that are most destabilizing: namely, missile accuracy, hard-target-kill capabilities, and other counterforce characteristics which not only invite preemption from an opponent but drive even a defender toward it as well. For the United States it is precisely the unmatched Soviet nuclear modernization trend toward first-strike, counterforce systems that argues in favor of SDI. A strategic defense system that blunts the ability of the Soviet Union to even consider the theoretical possibility of a first strike will add to deterrence. SDI will, in turn, most likely stabilize the U.S.-Soviet strategic balance. Far from unleashing an offensive arms race, a deployed nationwide U.S. strategic defense system will likely usher in a new age of defensive deterrence based on the time-worn military principal that only mad-men or fools launch attacks which they are near certain will not bring victory.

The United States should not be overly concerned about Chinese opposition to SDI. The nuclear strategic balance is not a central feature of Sino-U.S. relations. The mutual benefits Washington and Peking receive from a tacit strategic cooperation against the Soviet Union are indirect and not subject to easy manipulation. Moreover, in

the short run it will be very difficult if not impossible to reverse Chinese concerns about the perceived negative effects a U.S.--Soviet strategic defense race will have on China's emerging nuclear deterrent.

This, however, may not always be the case. Since the Soviet Union will very likely develop and deploy a strategic defense system regardless of U.S. actions, the Chinese may at some point moderate their opposition to SDI. Since Peking must always depend on the residual capability of U.S. power to deter Moscow, the Chinese may conclude that undefended U.S. strategic forces could leave them open to Soviet nuclear blackmail. A new global regime in which both Moscow and Washington have strategic defenses, on the other hand, would reduce U.S. vulnerability to a Soviet first strike and thereby enhance the credibility of U.S. power in the triangular strategic balance. The Chinese would still have security problems of their own with the Soviets. But they have these problems now, and the Soviets are still deterred from aggression. What must be maintained for the Chinese is the global strategic balance on which much of their security depends. At some point the Chinese may therefore realize that the U.S. SDI program is a critical element of that global strategic balance.

In the nuclear arena the major nuclear players are still the United States and the Soviet Union. To the extent that a new defense-dominant environment would funnel U.S. and Soviet military resources into defensive forces, strategic defense would stabilize the worldwide strategic balance of power. The China factor does not change this conclusion in any significant way. The balancing force of the Chinese for the U.S. is still indirect and potential, to the extent that the Chinese draw Soviet forces away from the European theater. China's balancing capability for the U.S. is also limited insofar as its nuclear forces are neither committed to the West nor large enough to shift the strategic balance of power against the Soviet Union. Although the Chinese may suffer from Soviet strategic defense deployments, they will not lose their conventional force potential, which is the major factor contributing to deterrence against Soviet aggression. The U.S. therefore can still depend on the limited countervailing power of China in a strategic defense environment, but because the strategic benefits of the Chinese connection are so tenuous, the U.S. cannot count on the China card to obviate the need for maintaining its military strength. Strategic defense may change the character of the strategic environment and restore stability to the U.S.-Soviet strategic balance. But it will not alter in any significant way the role China plays as a military power counterbalancing the Soviet Union.