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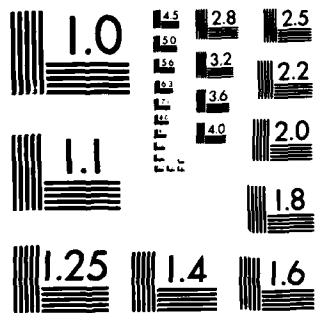
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A RAND NOTE

THE SOVIET UNION AND THE STRATEGIC DEFENSE INITIATIVE: PRELIMINARY FINDINGS AND IMPRESSIONS

Benjamin S. Lambeth

June 1986

N-2482-AF

Prepared for

The United States Air Force

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This Note provides a background against which to evaluate possible Soviet alternatives for dealing with the Strategic Defense Initiative (SDI) in the decade ahead. Without speculating about what the Soviets will ultimately do in response to SDI, the Note (1) examines Moscow's statements on SDI to date, (2) reviews the highlights of Soviet doctrine and programs related to strategic defense, (3) considers the real concerns that may underlie the Kremlin's public posturing on SDI, and (4) outlines the key political and strategic factors that will constrain the Soviets' eventual response. The author suggests that, assuming SDI does lead to a deployable U.S. ballistic missile defense, the Soviets will be driven to counter that threat within the limits of their economic and technical resources. Forecasting the technical details of their response at this time, however, is complicated by uncertainty not only about Soviet concerns, motivations, and intentions, but also about what the United States will eventually do with SDI.

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A RAND NOTE

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PREFACE

The Rand Corporation is providing analytical support to the Assistant Chief of Staff/Intelligence, Hq USAF, on the question of possible Soviet responses to the U.S. Strategic Defense Initiative (SDI). This effort examines Soviet policy toward SDI in terms of those aspects of doctrine and strategy, offensive and defensive force requirements, internal resource decisions, arms control behavior, and international conduct that could have a reciprocal bearing on U.S. security.

This Note lays out a contextual backdrop against which to evaluate possible Soviet alternatives for dealing with SDI in the decade ahead. It makes no attempt to predict or otherwise speculate about what the Soviet leadership will ultimately do in response to SDI. Instead, it examines Moscow's statements on SDI to date; reviews the highlights of *Soviet* doctrine and programs related to strategic defense; considers the real concerns that may underlie the Kremlin's public posturing on SDI; and outlines the key political and strategic factors that will constrain whatever responses the Soviet leaders eventually select. A discussion of generic response options that Soviet planners might find attractive is presented in a companion study by Kevin N. Lewis, *Possible Soviet Responses to the Strategic Defense Initiative: A Functionally Organized Taxonomy*, N-2478-AF, July 1986.

This analysis should be of interest to USAF officers in the operations, plans, and intelligence communities concerned with SDI, U.S.-Soviet strategic interaction, the arms control process, and trends in Soviet military doctrine and policy.

SUMMARY

Since its announcement in March 1983, the Strategic Defense Initiative (SDI) has been a major bone of contention in Soviet commentary on East-West relations. Although much of its rhetoric has been self-serving and propagandistic, **Moscow's statements on the issue have also reflected deeper concerns about SDI and its implications for Soviet security.** Insofar as Soviet planners are genuinely worried about what SDI portends, their expectations may considerably influence the degree to which SDI might be used by the U.S. government to help drive Soviet force deployments and arms control behavior in directions beneficial to Western security.

Soviet pronouncements on SDI have been consistent from the beginning. They have also repeated several key themes. **The central allegation has been that SDI is not intended, as advertised, merely to ensure U.S. survival, but rather to back up a U.S. war-winning posture aimed at depriving the Soviet Union of any retaliatory capability.**

Much of Moscow's anti-SDI rhetoric has misrepresented the intent of SDI in an attempt to play on U.S. domestic dissension and inflame the worst fears of our European allies. Nevertheless, Moscow's commentary in the wake of President Reagan's SDI speech has sought to occupy the political high ground by proclaiming that since the signing of the ABM Treaty in 1972, the Soviet Union has changed its ways on the question of homeland defenses. By putting Washington on the defensive with an argument that has a powerful appeal for those in the West inclined to believe it, this refrain has given Moscow an inside track in the propaganda war over SDI.

Although the Soviet leaders surely do not believe everything they have said in their propaganda barrage, they may be genuinely concerned that SDI reflects a turn toward greater toughness in the American strategic temperament. They may also believe that SDI will circumscribe future Soviet power and opportunities if allowed to mature into a deployed capability, notwithstanding any technical problems it may

encounter along the way. Particularly in light of other ongoing U.S. efforts toward nuclear and conventional force modernization, the Kremlin may assess SDI as proof that the United States has finally decided to counter Soviet force developments with greater determination after years of neglect.

Even a less than comprehensive U.S. ballistic missile defense (BMD) capability would threaten to undermine Moscow's investment in hard-target ICBM development by increasing the uncertainty that would attend any Soviet attempt to disarm the United States preemptively in a serious confrontation. It would also compel Moscow to undertake major new programs of its own to restore an acceptable military balance. Finally, Moscow could view SDI as a real threat to use the superior American technology to a practical advantage and thereby leave Moscow in a distant second place in the technological competition. **Although the USSR has reaped ample propaganda support from Western criticism that SDI will never work, the remarkable outpouring of Soviet effort to stop SDI in its tracks before it develops any programmatic momentum is powerful evidence of a Soviet fear that it will work only too well.** This implies that the United States could parlay SDI into considerable bargaining leverage in its across-the-board diplomatic dealings with the Soviet Union.

A final aspect of Soviet commentary has been a recurrent refrain that **Moscow will not be driven down any path preferred for it by the United States, but will instead respond to SDI with a view to its own security interests.** This line, which emphasizes offensive rather than defensive countermeasures, has probably been adopted to dash any U.S. hopes that the USSR might be coopted into working toward a defense-dominated strategic world. But it also underscores many of the arguments that Western critics of SDI have given prominent airing. To this extent, it may reflect more an attempt to gain another propaganda advantage from Western dissension over SDI than any actual planning assumptions on the part of the Soviet leadership.

The most probable Soviet short-term approach toward countering SDI will be a continued effort, already well under way, to drive a stake through the program politically before it gains enough momentum to present a tangible threat. Among the highlights of this campaign has

been a determined Soviet attempt to exploit the natural yearning of Americans for arms control with a variety of tantalizing force-reduction "proposals" while stonewalling in the negotiating arena in the hope that the administration's position on SDI will yield under the pressure of public opinion. This suggests that Moscow's arms control posturing remains in a highly tactical phase. But it also dramatizes the Soviet Union's desire to eliminate SDI on the cheap, if at all possible, by helping to engineer its demise before hard commitments toward offsetting Soviet programs become required.

Should this political assault against SDI prove unavailing, Moscow will have to turn to responses whose feasibility and cost are almost surely being debated within the Kremlin today. **One of the key problems presented by the multilayered SDI scheme is that the Soviet Union will have to react to a considerable technological challenge.** By simultaneously exploring a broad range of boost-phase, mid-course, and terminal intercept configurations, SDI will force Moscow to concentrate its resources against all these schemes if it wishes to preserve the offensive advantages it currently enjoys. Obviously, that will stress Soviet R&D more than would a requirement simply to counter any one U.S. BMD component. It further explains why cheap solutions such as simply MIRVing up or adding more penetration aids are not as promising for the Soviets as they might appear at first glance.

Another factor bearing on Moscow's response will be the Soviet leadership's assessment of U.S. staying power over the long haul. The United States has periodically encountered trouble sustaining expensive military programs that have required the support of multiple leaderships and multiple budget cycles to achieve full fruition. Soviet planners appreciate that future U.S. administrations may not share the same enthusiasm for SDI as the current one does. They are also aware of the significant budget pressures faced by the Reagan administration's defense program as a whole. They will make every effort to take advantage of such problems.

As for Soviet internal deliberations, the presence of a strong General Staff able to impose top-down direction on the weapons acquisition process will tend to minimize the tugging and hauling over programs and budgets that often characterize interservice rivalries in

Western countries (the United States not excluded). To this extent, **we should expect a reasonably coherent and disciplined Soviet response, whatever technical form it may assume.**

Moscow's reaction to SDI will be heavily contoured by long-standing doctrinal proclivities. Here, the important point concerns the likelihood of Moscow's acceding to any arrangement (whether through negotiation or tacitly) that seeks to replace the current environment dominated by strategic offense with one more characterized by robust defenses on both sides. Some proponents of SDI have suggested that Soviet participation in such a transition should be rendered that much easier by what they regard as the "natural" preeminence of the defensive mission in Soviet military thought. Yet the Soviet emphasis on homeland defense has typically occurred within the context of a continued parallel stress on the necessity for overwhelming offensive forces. For that reason, **Soviet participation in any cooperative venture aimed at redefining the character of the current strategic landscape is remote.**

Perhaps the most important factor that will govern how Moscow reacts to SDI involves the question of resource constraints and the inevitable difficulties that will arise over allocation priorities as the Soviets attempt to grapple with this challenge. After more than two decades of sustained force expansion, the Soviets are now finding themselves saddled with real limits to attainable military growth. Given the increasing demands on Soviet resources, not only from the economy at large but also within the defense sector, **SDI threatens a new round of technological competition that the Soviets almost certainly would prefer to forgo.** Moscow's discomfiture over the problems that will be posed by any requirement to bite the SDI bullet seems genuinely rooted in an appreciation of the Soviet Union's own resource and technology limitations.

On balance, Moscow's main near-term worry probably involves the prospect that **a successful U.S. SDI effort will deprive the considerable Soviet nuclear offensive posture of much of its former political utility.** For the moment, the Soviets show little sign of apprehension that SDI will result in major deployments on a scale sufficient to bring about all the dire consequences alluded to in their most exaggerated forebodings. **Indeed, the more astute Soviet America-watchers may be**

privately advising their Kremlin bosses to continue a high-visibility stance of indignation against SDI, but otherwise to moderate their deeper concerns in light of the continuing possibility that SDI could die a natural death at the hands of the American political process--with perhaps some generous assistance from Soviet propaganda and covert action.

For the longer term, Moscow's responses will obviously hinge closely on the bureaucratic and technical fortunes of SDI. Assuming that SDI does lead to a deployable U.S. ballistic missile defense, the Soviets will be driven to counter that threat with full determination within the limits of their economic and technical resources. Any attempt to forecast the technical details of Moscow's programmatic response at this stage, however, would be doubly risky in that it would require a prediction in the face of compound uncertainty not only about Soviet attitudes and intentions, but also about what the future of SDI itself holds.

ACKNOWLEDGMENTS

Portions of this Note were presented in less finished form as talking papers at three conferences dealing with SDI and various aspects of East-West relations. These included a conference on SDI and European security jointly sponsored by Rand, the Royal Institute of International Affairs, the Institut Français des Relations Internationales, and the Stiftung Wissenschaft und Politik at Versailles, France, March 22-23, 1985; a gathering convened by the International Institute for Strategic Studies in London on October 14-16, 1985, to review a proposed IISS research agenda related to SDI; and a conference on "Strategic Defense and U.S.-Soviet Relations" sponsored by the Woodrow Wilson International Center for Scholars, Smithsonian Institution, Washington, D.C., March 10-11, 1986. Highlights of the Note were also presented at a mid-term project review held at Rand in Santa Monica on March 27, 1986. I am grateful to the many participants at those sessions who shared their own thoughts--and occasional disagreements--on this difficult subject. I also want to thank Harry Gelman, Glenn Kent, and Kevin Lewis for their detailed critiques of an earlier draft.

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ABBREVIATIONS

ABM	Antiballistic Missile
ACDA	Arms Control and Disarmament Agency
ASAT	Antisatellite
ATB	Advanced Technology ("Stealth") Bomber
BMD	Ballistic Missile Defense
CPSU	Communist Party of the Soviet Union
GLCM	Ground-Launched Cruise Missile
INF	Intermediate-Range Nuclear Forces
KAL	Korean Airlines
KGB	Committee for State Security
MAD	Mutual Assured Destruction
MIRV	Multiple, Independently Targeted Reentry Vehicle
MPS	Multiple Protective Structure
MRBM	Medium-Range Ballistic Missile
NCA	National Command Authority
OTH	Over-the-Horizon
PKO	Soviet Anti-Space Defense Forces
PVO	Soviet National Air Defense Forces
SDI	Strategic Defense Initiative
SLBM	Submarine-Launched Ballistic Missile
SRAM	Short-Range Attack Missile
SRF	Soviet Strategic Rocket Forces
SShA	USA

I. INTRODUCTION

Almost from the moment of its announcement on March 23, 1983, President Reagan's Strategic Defense Initiative (SDI) has been a focal point of intense controversy among Western defense specialists. As one writer observed, it has created a "cottage industry of analysts, theorists, arguers, and debaters" and has given rise to "more intellectual effort and concern than anything else to do with strategic nuclear forces in the last decade and a half."¹ During the course of this controversy, issues have been broached ranging from technical feasibility to fiscal practicality and the implications of SDI for U.S. alliance relations and the stability of the strategic nuclear balance.

Throughout the same period, the USSR has been no less vocal on these and other points. Although much of its commentary has been blatantly propagandistic, Moscow's pronouncements have also reflected deeper concerns about SDI and its relationship to broader U.S. strategic intentions. Yet for all the verbal crossfire over the so-called "Star Wars" issue in the American domestic debate, scant attention has been paid to the Soviet factor in the equation. Extensive efforts have been under way to itemize and assess the various *technical* response options available to the Soviets, but only a few analysts have given much systematic thought to how Moscow perceives SDI as a political-military problem, or what it portends for broader Soviet foreign and defense policy.

This oversight needs correcting, because both the programmatic and policy dimensions of Moscow's response to any U.S. SDI effort will be central in determining the ultimate practicality and fate of the program. Insofar as Soviet planners perceive SDI to be a significant threat, their expectations will also heavily influence the amount of

¹Robert E. Hunter, "Star Wars Erodes Confidence in Nuclear Waiting Game," *Los Angeles Times*, February 27, 1985. The last American debate of comparable magnitude occurred in 1969 in connection with the Nixon administration's effort to gain Congressional support for its Safeguard ABM program.

leverage SDI will offer the West over Soviet strategic force deployments and arms control behavior. For both reasons, it is essential that we understand the nature and depth of Moscow's concerns about SDI and its implications for Soviet behavior.

This Note presents the initial results of a larger effort to consider the various factors that will shape the context within which the Soviet leaders will frame their responses to SDI as the latter evolves during the decade ahead. Although it includes an overview of Soviet weapon development trends related to SDI, it is not an exercise in technological or programmatic forecasting. Rather, it is mainly concerned with political-military issues and explores the implications of SDI for Soviet foreign and defense policy more broadly defined. The account begins with an overview of the Soviet declaratory record on SDI since President Reagan first announced it in 1983. Following a review of the evolution and current state of Soviet thinking on strategic defense, the Note summarizes the major trends in Soviet ABM and anti-satellite technology over the past two decades. The purpose here is not to paint a full portrait of Soviet technical activity, but merely to show that there is a good deal less than meets the eye in Moscow's belated assertions of interest in stability based on mutual societal vulnerability. Finally, the discussion speculates about the private concerns that may underlie Moscow's propaganda line on SDI; reviews the sort of response options the Soviets have publicly stated they might consider; and examines some of the political, strategic, and institutional determinants that can be counted on to influence whatever counter-SDI choices the Soviet leaders ultimately adopt.

II. THE SOVIET DECLARATORY LINE ON SDI

Moscow's relative slowness to react to President Reagan's "Star Wars" speech suggested that the Soviets, like most Americans, were taken by surprise by the announcement.¹ The first official statement by Andropov took four days to appear, indicating that the Kremlin needed more than the usual amount of time to collect its official thoughts.² The Soviets also may have been unsure at the outset about how seriously the President's remarks should be taken, inasmuch as they appeared to catch most of the U.S. national security bureaucracy off guard as well.³

As one might have expected, Andropov made a special effort to characterize the President's speech as yet another manifestation of Washington's alleged hope to reestablish military superiority over the Soviet Union. Yet his remarks also contained other points that were to become recurrent themes in the Soviet line on SDI in subsequent months. Most prominent among these was the charge that SDI was not "defensive" in intent but rather indicated that the United States had embarked on the pursuit of a nuclear first-strike capability against the Soviet Union.⁴

¹On the latter point, see Robert Scheer, "Star Wars: A Program in Disarray," *Los Angeles Times*, September 22, 1985.

²This hesitant character of Moscow's initial reaction to SDI was consistent with the similar pattern of Soviet comportment in the wake of the KAL 007 shootdown five months later, an event that probably came as no less of a rude surprise to the top Kremlin leadership.

³For example, they could have had grounds to question whether this announcement, which was so quickly mocked by the liberal media, was not just another half-baked idea like airborne basing for the MX ICBM.

⁴"Yu. V. Andropov's Answer to a *Pravda* Correspondent's Questions," *Pravda*, March 27, 1983. The Soviet leader repeated this line a month later in an interview with *Der Spiegel*, when he took offense at SDI's emphasis "on impunity, on delivering the first nuclear strike thinking they can protect themselves from the answering strike." Andropov added: "From here it is not far from the temptation to reach out for the firing button. This is the main danger of the new American military concept." TASS communique in English, April 24, 1983.

Before long, Soviet pronouncements on SDI had come to reflect such a degree of consistency on the issue as to suggest that high-level guidance on approved language had been promulgated to all hands. Despite the many controversial and novel features of SDI, there has been no sign, at least in public, either of conflicting Soviet "schools" on the subject or of any notable change in the official Soviet position, save for a toning down of the more vitriolic Soviet rhetoric since Moscow announced its willingness to return to the Geneva arms talks. On the contrary, the various signals emanating from Moscow show every sign of having been carefully orchestrated to play up certain common points. These signals have varied from fairly straightforward articles in quasi-professional forums such as *SShA* to unrestrained hyperbole from such Party spokesmen as Vadim Zagladin and Valentin Falin.⁵ In propounding them, the Soviets have made use of every available communications channel, from the printed media to interviews with Western journalists and the citation of prominent Soviet scientists to add technical credence to Moscow's critique of SDI.⁶ These arguments have uniformly portrayed President Reagan's initiative as an American subterfuge for acquiring a war-winning capability. This, the Soviets maintain, will bring the world closer to nuclear war--or at least an intensified arms race--by obliging Moscow to pursue offsetting measures whose result will be to render the strategic balance less stable.

Although there is clearly a substantial manipulative element to this Soviet line, it also reflects genuine apprehensions that threaten

⁵This campaign bears earmarks of having been orchestrated by the International Information Department of the CPSU Central Committee. For a good treatment of that organization's central role in Soviet foreign propaganda, see Lilita Dzirkals, Thane Gustafson, and A. Ross Johnson, *The Media and Intra-Elite Communication in the USSR*, The Rand Corporation, R-2869, September 1982.

⁶See, for example, the conversation with Henry Trofimenko, a senior member of the Institute of the USA and Canada, reported in Robert Scheer, "Soviet Expert on U.S. Says Arms Talks May Be Modest Steps Toward Detente," *Los Angeles Times*, January 13, 1985. See also Academician Ye. Velikhov, vice president of the Soviet Academy of Sciences, "Ambitions in Space--Threats on Earth: Washington's Adventurous Course," *Pravda*, April 30, 1984.

(for the United States and NATO) unpleasant consequences with respect to Soviet offensive and defensive force deployments, as well as a hardening of Soviet arms control behavior and international conduct, both of which could be deleterious to Western security. Whether or not these Soviet fears are uniformly justified, we must understand them and take them into account in our own strategic and arms control planning. It is also essential, however, to avoid the pitfall of accepting at face value any and every Soviet statement on SDI as a reflection of some underlying leadership "perception." Although many of Moscow's avowed worries are real enough, a good deal of the Soviet Union's anti-SDI rhetoric has been contrived to make propaganda hay out of domestic dissension within the United States, to play on European fears, to deny Soviet involvement in comparable activity, and to feign Soviet willingness to accept their own societal vulnerability as a necessary price for international security. I will defer treatment of the probable real concerns of the Soviet leadership regarding SDI for the time being. Let me first dwell on the more obvious propaganda aspects of the Soviet line.

The central theme permeating Moscow's statements on SDI has been the allegation that the program's intent is not, as advertised, to defend the United States or to "eliminate nuclear weapons," but rather to backstop an American disarming first-strike posture aimed at depriving the Soviet Union of any retaliatory capability, and thus any deterrent to vouchsafe its own security.⁷ General Secretary Gorbachev echoed this refrain shortly after assuming office when he complained that the Americans "talk about defense but are preparing for an attack, they advertise a space shield but are preparing a space sword."⁸ Some of this rhetoric has been disingenuous, such as Moscow's claim that the United States developed Minuteman III as a first-strike weapon.⁹ In fact, the Minuteman III--even with the Mk 12A warhead--has a rather low overall damage expectancy against the full complement of Soviet ICBM

⁷Representative of the genre was an editorial entitled "Large-Scale Provocation Against Peace," *Pravda*, March 23, 1984.

⁸Interview in *Pravda*, April 8, 1985.

⁹L. Semeiko, "Counting on Impunity: On the White House's New Militarist Concept," *Krasnaia zvezda*, April 15, 1983.

silos. Similarly overdrawn is the assertion by Vadim Zagladin that SDI represents "a process of material preparation for war" by the United States, and the claim by Georgii Arbatov that SDI's full deployment "will make war inevitable."¹⁰ Behind such distortions, of course, probably lies a real Soviet apprehension that a U.S. monopoly on space-based defenses will alter the strategic balance to the Soviet Union's *political* disadvantage. But that is a different matter. Again, I will address this concern and its ramifications more fully below.

A second argument in the Soviet stance on SDI holds that the President's initiative constitutes a violation of "the spirit and letter" of the ABM Treaty.¹¹ Leaving aside Moscow's indignant denials of similar culpability,¹² there is a measure of truth to this refrain if it is taken to mean full-scale hardware development and certain testing. But there is nothing in the ABM Treaty that precludes pure research, and the U.S. government has gone out of its way to stress that SDI is a research-only program at this point. Indeed, in other contexts the Soviets themselves have insisted that weapons research cannot be regulated by negotiated agreement, since it is inherently unverifiable. Perhaps this is why Soviet propaganda has been at such pains to show that the United States is involved in *more* than just research.¹³ In all events, Moscow has repeatedly cast SDI as a symbol of U.S. indifference to the ABM Treaty and as a threat to derail "the whole process of arms

¹⁰Vadim Zagladin, "The World Faced with a Choice," *Sovetskaiia Rossiya*, December 27, 1984; and G. A. Arbatov, Radio Moscow international service, April 13, 1983.

¹¹P. Pavlov, "Space: Washington's Words and Ambitions," *Izvestiia*, July 28, 1983.

¹²Most recently by the Soviet Defense Minister, Marshal Sokolov, who professed that Soviet military R&D is "not aimed at creating strike space weaponry, but is linked [only] with perfection of space early warning, reconnaissance, communications, and navigation systems." William J. Eaton, "Soviets Warn U.S. Against Space Defense," *Los Angeles Times*, May 6, 1985.

¹³Typically cited as an example has been the ongoing testing of an ASAT prototype aboard the F-15. But ASAT is not the same thing as an ABM, a distinction glossed over by the Soviets. They also fail to mention that the USSR was the pacesetter in this area and currently maintains the world's only operational ASAT.

control."¹⁴ In its more outspoken moments, it has gone so far as to insist that "the militarization of space will cancel everything that has been accomplished in arms control."¹⁵

Beyond misrepresenting the intent of SDI, a good part of the Soviet Union's rhetoric has sought to exploit dissension among American opinion elites and inflame the worst fears of the Europeans. For example, Soviet propaganda has repeatedly cited such American SDI critics as Kosta Tsipis, Carl Sagan, Hans Bethe, Paul Warnke, and others, who have provided the Soviets with a cornucopia of quotations to use against the Reagan administration.¹⁶ The Soviets have also made effective use of Wolfgang Panofsky's telling contrast between the Apollo program and SDI, suggesting that the former was feasible only because the lunar landing involved "merely a battle with the laws of gravity," whereas the Soviet Union could be expected to take "resolute countermeasures."¹⁷ As for European attitudes, the Soviet press regularly echoes the often expressed European concern that an effective U.S. ABM will decouple the American nuclear deterrent from Europe's defense by making Washington less inclined to support its allies in a crunch.¹⁸

¹⁴Interview with G. A. Arbatov, Radio Moscow international service, April 13, 1983.

¹⁵"For Space Without Weapons," *Pravda*, December 28, 1984.

¹⁶See, for instance, Andrei Kokoshin, "Space Is Not an Arena for Confrontation," *Vek XX i Mir*, No. 12, December 1983, pp. 9-23; Vladimir Bogachev, TASS dispatch, December 26, 1984; and "Still the Same Stance," *Pravda*, December 30, 1984.

¹⁷Vladimir Matyash, TASS dispatch in English, December 27, 1984.

¹⁸A good example was Valentin Falin's assertion that the Americans speak exclusively of "strategic" defense, which solely concerns intercontinental missiles and conveniently ignores "tactical and operational [i.e., theater] nuclear weapons." Because "there are none of these near U.S. territory," he suggested, "their threats do not pain Americans' hearts." "Space: The Moment of Truth," *Izvestia*, December 14, 1984. Also of a piece with this line was Vladimir Bogachev's dark portent of the steep price the "European people;" will have to pay "while the Americans, under the umbrella of a U.S. space-based antimissile defense system, will manage to survive Armageddon taking place thousands of miles away from U.S. shores." TASS dispatch, December 26, 1984. How much effect such propaganda has had on West European opinion remains an open question. Moscow has been careful not to press this argument too far because of its recollection of having been burned by similar propaganda against INF deployment. Perhaps also the Soviets recognize that popular European concerns about SDI, like rank-and-file American attitudes, are less negative than some Western press reports have suggested. In this regard, the *Wall Street Journal*

Perhaps the most insidious aspect of Soviet polemicizing against SDI has been Moscow's effort to blame the United States for aggravating the arms competition by suggesting that the Soviet Union has forsworn interest in strategic defense and accepted mutual vulnerability as a suitable basis for Soviet security. Unfortunately for the Soviet position, this claim is contradicted by long-standing Soviet operational doctrine, as well as by amply funded programs of the Soviet Union's own in the BMD arena, to say nothing of Soviet investments in homeland air defense. Nevertheless, Soviet propaganda in the wake of President Reagan's SDI speech has repeatedly intimated that Moscow accepts the main premises of classic Western deterrence theory, including its emphasis on the necessity for nuclear "assured destruction" capabilities on *both* sides as a guarantor of each side's security.

In this spirit, one Soviet commentator pointed out that although accidental wars can always occur, under conditions of "genuine" deterrence stability (of the sort assertedly provided by the 1972 SALT accords), a nuclear war is "simply inconceivable."¹⁹ The Soviets have also invoked the authority of their scientists (and frequently ours) in proclaiming that "no effective means of defense exist in nuclear war."²⁰ As for the incapacity of such defenses to protect large populations, Georgii Arbatov noted in passing how this "naive concept" was shared by "maybe even some people on our side at the beginning," implying that Soviet planners have since given it up.²¹ His son Alexei, in a lengthy *SShA* article, added that although Soviet military thought had long embodied a deep strain of defense-mindedness, the Soviet leadership was not so foolish as to think it can fight and survive a nuclear war.²² The point is that Moscow now claims the logic of Mutual Assured

referred to "ventriloquist journalism" in creating a "growing balloon of distortion on 'European concern' over Star Wars." "A U.S. journalist with some special mind-set contacts three European elites, asks them a tendentious question and gets the expected tendentious answer. The headlines read 'Europeans Fear Reagan Plan,' as if a continental plebiscite occurred." "Star Wars and Europe," *Wall Street Journal*, February 12, 1984.

¹⁹L. Semeiko, "Counting on Impunity."

²⁰"Space Deceivers," *Argumenty i fakty*, September 20, 1983.

²¹Radio Moscow international service, April 13, 1983.

²²A. G. Arbatov, "Limiting Antimissile Systems: Problems, Lessons, and Prospects," *SShA: ekonomika, politika, ideologiya*, No. 12, December

Destruction as its own, while accusing *Washington* of seeking a counterforce disarming option and thereby threatening to disrupt the balance that has hitherto prevented nuclear war.

This contention echoes the concern that defense officials of both the Reagan administration and its predecessors have voiced over the threat dimensions of comparable *Soviet* programs under way since the early 1970s. Indeed, those same Soviet scientists and technicians who have been at the vanguard of Moscow's propaganda campaign against SDI have long figured at the center of the USSR's own efforts in ballistic missile defense.²³ Yet by putting the United States on the defensive with an argument that has a powerful appeal to those in the West inclined to believe it, the Soviet refrain against SDI has given Moscow an inside track in the propaganda war. Whatever one may think about the merits of SDI from a technical or policy perspective, this double standard in Soviet rhetoric must be recognized if the real meaning and worth of SDI are to be properly debated.

1984, pp. 16-28. The younger Arbatov achieved a new standard several months later in grasping for a novel argument against SDI. In response to a query from a panel of West German interviewers as to why the USSR was so resolutely opposed to "Star Wars" if, as Soviet propaganda alleged, it not only was technically infeasible but also could drive the American economy into the ground, Arbatov replied that this was undesirable from the Kremlin's point of view, because Moscow knew that any such economic crisis would impose intolerable burdens on the American "proletariat," who would be the first to suffer from its effects! "Auch Inspektionen vor Ort sind Moglich," *Der Spiegel*, March 11, 1985.

²³For example, Academician Yevgenii Velikhov (see Sec. VI below) wrote in an opinion piece in the *Washington Post* on June 24, 1983, that strategic defense is "a dream that can't come true." Yet he runs the Kurchatov Atomic Energy Institute and has been identified by the CIA as a "central figure" in Soviet laser and particle-beam weapons research. The same is true of Nikolai Basov, another prominent Soviet anti-SDI propagandist, who was a 1964 Nobel laureate in quantum electronics and has evidently spent much of his professional life working on both conventional and exotic BMD technologies. See Lord Chalfont, "Moscow's Star Wars Plan: Keeping Facts Under Wraps," *Toronto Globe and Mail*, April 23, 1985; and Bill Gertz, "CIA: Soviets Are Developing Their Own 'Star Wars' System," *Washington Times*, May 10, 1985.

III. STRATEGIC DEFENSE IN SOVIET MILITARY THOUGHT

The Soviets have worked hard since the end of World War II to build what is now the world's most extensive network of aerospace defenses. The actual capabilities of this network have continued to lag far behind parallel improvements in the offensive threat, but not through any flagging of Soviet fiscal or R&D support to the *principle* of home defense.

Western analysts often dismiss this record as a case of throwing good money after bad, or as a continued testament to the ability of the Soviet air defense establishment (*Voiska PVO*) to command a disproportionate share of Soviet fiscal resources. Such arguments fail to appreciate how strongly the commitment to home defense has held sway over Soviet military thought since the beginnings of the nuclear age. Although organizational and bureaucratic factors certainly account in part for the size of Soviet allocations to PVO, the main explanation for Moscow's stress on strategic defense must be sought in Soviet history and operational doctrine.¹

Until recently, most American defense planners were inclined to accept as a given that any serious attempt to defend against nuclear attack, especially by means of ballistic missiles, would be both technically futile and destabilizing. The prevailing view held that nuclear war was inherently unsurvivable, so the only reliable key to security lay in a protected retaliatory force that could threaten unendurable harm to the Soviet Union in response to an attack on the United States or its allies, thereby deterring any such an attack in the first place. This premise led to a U.S. decision, first articulated during the Kennedy-McNamara years, to forgo further efforts at serious air defense, on the ground that it made little sense to commit resources against a modest Soviet bomber threat in light of the impossibility of handling a far more intractable Soviet ICBM challenge.

¹A useful survey of postwar Soviet attitudes toward homeland defense is offered in Michael J. Deane, *Strategic Defense in Soviet Strategy*, Advanced International Studies Institute, Washington, D.C. (in association with the University of Miami), 1980.

Even when the idea of ballistic missile defense had become more technically promising later in the decade, continued U.S. adherence to the MAD premise militated against any repudiation of basic strategic assumptions. Accordingly, what was initially little more than a cost-effectiveness case against further U.S. investment in *bomber* defense became enshrined as opposition to defense of *any* sort.

For their own part, the Soviets have apparently preferred to stick to the long-standing premise of their fundamentally *military* doctrine that the best security guarantee lies in the capacity to defeat any aggressor should war come. Although Soviet officials routinely maintain (and undoubtedly believe) that any nuclear war would be an unmitigated disaster for Soviet national livelihood, they insist that such a war remains possible. In practical terms, this has led to Soviet unwillingness to settle for a deterrent oriented solely toward retaliation. As Khrushchev put the point with elegant simplicity in his memoirs, "if the enemy starts a war against you, then it is your duty to do everything possible to survive the war and to achieve victory at the end."²

This doctrinal predilection does not, of course, bespeak any underlying Soviet confidence that such "victory" would actually be attainable, even in the most favorable circumstances realistically imaginable. It does, however, reflect a Soviet belief that at least making every effort to survive a nuclear exchange, within the limits of Soviet economic and technical resources, remains an abiding responsibility of the Communist Party. This outlook has been a major driver behind Moscow's insistence on maintaining a large home defense establishment.

Of course, the Soviets do not assign absolute priority to home defense. Occasionally one encounters assertions from PVO spokesmen that "victory or defeat in war has now become dependent on how much the state

²*Khrushchev Remembers*, Bantam Books, New York, 1970, p. 570. To be sure, Soviet spokesmen have substantially muted their professions on this score since the signing of the ABM Treaty. Since the advent of SDI, some nonmilitary commentators have gone so far as to repudiate altogether (at least declaratorily) earlier Soviet assertions regarding the sanctity of homeland defense as a military mission area.

is in a position to reliably defend the important objects on its territory."³ The bulk of Soviet commentary, however, has long emphasized that the decisive role of protecting the homeland lies in the damage-limiting potential of the Soviet ICBM force. Strategic defense is considered an independent *form* of combat, but not an independent *mission*. Instead, it is treated as an integral part of broader Soviet "all-arms" philosophy, which insists that no single service or weapon can, by itself, secure victory.

To some extent, this "all-arms" approach has provided a convenient rationale for ensuring that all Soviet service branches get a healthy piece of the action in the distribution of military roles and resources. In the main, however, its inspiration has been more operational than bureaucratic. It reflects a conviction that the success of each service's performance will depend on how well the other services carry out their assigned tasks. The centrality of the offensive in Soviet strategy belies the notion propounded by some in the West that Soviet military thought is inherently defensive-minded. True enough, the memory of past invasions by Napoleon, Kaiser Wilhelm, the Western powers during the civil war, and Adolf Hitler has doubtless contributed to a special Russian tradition of worrying about protecting the home front. Yet there is no mistaking the offensive character of Soviet military doctrine. Even PVO spokesmen acknowledge that in any major conflict, nuclear weapons will remain the "decisive means of warfare."⁴

Nevertheless, strategic defense occupies an important place in the hierarchy of Soviet military functions, as perhaps best attested by the unusual status accorded to PVO as a separate service branch since 1954. As Marshal Sokolovskii remarked over a decade ago, the initial offensive may "significantly reduce the opponent's means of nuclear attack," but "one cannot rule out that a certain number of the opponent's aircraft and missiles will nevertheless be launched" in reprisal.⁵ Accordingly, Soviet planners recognize that a well-developed PVO posture "has also

³Marshal G. V. Zimin (ed.), *Razvitie protivovozdushnoi oborony*, Voenizdat, Moscow, 1976, p. 191.

⁴Colonel General M. Povaliy, "Scientific-Technological Progress and Military Art," *Vestnik protivovozdushnoi oborony*, October 1977, p. 18.

⁵Marshal V. D. Sokolovskii (ed.), *Voennaia strategii*, 3rd ed., Voenizdat, Moscow, 1968, p. 361.

acquired great strategic significance and has become one of the most essential factors for ensuring the defense potential of the Soviet state."⁶

The many efforts that have gone into modernizing Soviet aerospace defenses over the years have fallen far short of providing the USSR with a credible war-survival posture, even in conjunction with Moscow's offensive damage-limiting capabilities. Indeed, air and missile defenses have been perhaps the *least* robust of any Soviet military investment area because of the inherent advantages that have traditionally fallen to the attacker in the continuing interaction of offensive and defensive technologies. Although the Soviet press occasionally voices confidence that PVO "is equipped with everything necessary for the defeat of an aggressor's surprise attack and for his shattering destruction,"⁷ PVO missions are more typically stated conditionally, such as the following assertion by Marshal Kulikov that PVO "*must* ensure the protection of the country and armed forces from air and nuclear-missile attack . . . and prevent strikes on the most important objectives, force groupings, and naval forces."⁸ Likewise, although PVO spokesmen occasionally make sweeping claims that their defenses "are capable of reliably destroying the opponent's aircraft and cruise missiles at any altitudes, at any flight speed, and in any meteorological conditions," they usually concede that destroying low-altitude penetrators remains "a most important problem"⁹ and recognize that a comprehensive home defense is not yet in hand.

Soviet defense planning has never relied on hundred percent solutions. On the contrary, Soviet investment in homeland defense has been consistent enough to suggest a determination to cope with the full

⁶Marshal V. Kulikov, "Anti-Air Defense in the System of Defense of the Soviet State," *Vestnik protivovozdushnoi oborony*, April 1973, p. 4.

⁷Marshal P. Batitskii, "Sacred Duty," *Vestnik protivovozdushnoi oborony*, November 1977, p. 11.

⁸Kulikov, "Anti-Air Defense," p. 4.

⁹Marshal G. V. Zimin, "The Experience of the Great Fatherland War and the Present," *Vestnik protivovozdushnoi oborony*, October 1977, p. 106.

spectrum of enemy threats *despite* the impossibility of total success, simply on the ground that failure to make the attempt would be politically irresponsible. Repeatedly, we have seen energetic (if less than effective) Soviet efforts to anticipate *every* facet of the changing threat, ranging from bombers and cruise missiles to ballistic missiles and other space-related systems. In all cases, the abiding goal has been to preserve the "inviolability" of Soviet territory from "even one missile or one plane" and to repulse any attack so as to "ensure the uninterrupted work of the national economy, organs of state administration, and the combat capability of the armed forces."¹⁰

Obviously a substantial gap will remain, at least in the immediate years ahead, between this mission tasking and Moscow's ability to make good on it. Yet the Soviet leadership shows no sign of throwing in the towel on this issue. Throughout the postwar era, the USSR has consistently sought to accommodate each changing element of the offensive threat, regardless of the larger global political and diplomatic climate.¹¹ Even the ABM Treaty, although it did impose constraints on deployment, did not visibly shake Moscow's long-standing commitment to pressing the state of the art in ballistic missile defense research, whatever Moscow's post-SDI professions on the subject may suggest to the contrary.

On this last point, it would leave the story unfinished not to place in context some recent intimations, not only by the Soviets but by some Western commentators, that the USSR has turned over a new leaf in its attitude toward the requirements of deterrence in the nuclear age. For example, taking at face value certain Soviet pronouncements since Brezhnev's Tula speech in 1977 repudiating any Soviet intent to acquire

¹⁰Colonel N. Tabunov, "In the Spirit of Personal Responsibility," *Vestnik protivovozdushnoi oborony*, June 1975, p. 11; Lieutenant General N. Grishkov, "To Strengthen the Might of Air Defense," *Vestnik protivovozdushnoi oborony*, August 1972, p. 2.

¹¹This development pattern has stood at notable odds with Andrew Marshall's otherwise apt observation that the U.S.-Soviet strategic interaction process has been "muffled, lagged, and very complex" in its hardware manifestations. Quoted in Graham T. Allison, *Essence of Decision: Explaining the Cuban Missile Crisis*, Little, Brown and Company, Boston, 1971, p. 98.

a "war-fighting" capability, former Defense Secretary McNamara opined several years ago that those tough-sounding Soviet writings of the 1960s that "were used so devastatingly by opponents of nuclear arms control" were now "badly out of date" and had been rendered irrelevant by what he saw as a major "doctrinal shift" reflected by the new post-Tula Soviet rhetoric.¹²

More recently, Georgii Arbatov sought to sustain such Western thinking with regard to BMD in his effort to deny that Moscow ever took the promise of its ABM program seriously, let alone was intimately involved in any such program today. Dismissing Western accusations to the contrary as "big inventions," Arbatov conceded in a prominent interview that "there was some work done" at one time, but insisted that it was "of very modest scope" and that the leadership "never had it in mind that it's possible to do it."¹³

Not surprisingly, the Soviet military press has been largely mute on the question of ballistic missile defense since the signing of the ABM Treaty, and one no longer reads vigorous expositions on the operational aspects of home defense in any way resembling the doctrinal literature that existed on this issue over a decade ago.¹⁴ Nevertheless, Soviet R&D activity in missile defense has continued unabated, as has the development and fielding of new technologies to

¹²Robert S. McNamara, "The Military Role of Nuclear Weapons," *Foreign Affairs*, Fall 1983, pp. 65-66. I have dealt at length with what I believe to be the faulty assumptions underlying this interpretation in *The State of Western Research on Soviet Military Strategy and Policy*, The Rand Corporation, N-2230-AF, October 1984, pp. 49-57.

¹³"Star Wars Will Ruin All Arms Control Negotiations," interview in *U.S. News and World Report*, September 30, 1985, p. 27.

¹⁴In perhaps an unwitting reflection of the "left hand knoweth not" syndrome in Soviet politics, however, in 1977 a fascinating account appeared of an obscure Soviet novel that romanticized the struggle for technical excellence, amidst all varieties of bureaucratic subterfuge, in a fictional effort to develop and field the USSR's "first antimissile missile complex." This instructive morality tale lent persuasive support to the notion that whatever the agreed line on BMD may be in Soviet *external* discourse, the subject of ABM remains very much alive within internal Soviet military and defense-industrial circles. See the review by Engineer Colonel General (Ret.) N. M. Popov of the book *Bitva* ("The Battle") by Nikolai Gorbachev in *Knizhnoye obozreniye* (Moscow), No. 46, November 18, 1977, pp. 8-10.

counter U.S. airbreathing threats. Furthermore, there has not been the slightest indication that Moscow has repudiated the mission of home defense in its strategic planning. One would, of course, naturally expect a disappearance of Soviet public commentary on BMD in the wake of the ABM Treaty, in light of the regime's ample ability to maintain discipline over its internal media. Clearly any such pronouncements would be impolitic in a situation in which the Soviets were attempting to dramatize their commitment to the ABM Treaty.¹⁵

Nevertheless, the record belies the claims of Arbatov and others that Moscow has been unenthusiastic from the beginning about its involvement in BMD. For example, on the eve of the Cuban missile crisis, when the Soviet ABM effort was just beginning to produce its first primitive returns, Foreign Minister Gromyko lamented the persistence of the nuclear "balance of terror" and favored a new regime featuring a mutual build-down of offensive forces, yet with an "exception" for a "limited and agreed-to number of . . . antimissile missiles and antiaircraft missiles" intended "to guard against the eventuality, about which Western leaders have expressed anxiety, of someone deciding to violate the treaty and conceal missiles or combat aircraft."¹⁶ A more widely cited expression of the same sentiment was voiced two years later by a prominent Soviet military theoretician, Major General Nikolai Talenskii, who wrote that "when the security of a state is based only on mutual deterrence by means of powerful nuclear missiles, it is directly dependent on the good will and designs of the other side, which is a highly uncertain premise." For that reason,

¹⁵This drying up of the public literature did not entirely squelch internal Soviet military comment on BMD-related subjects. In a review of pertinent Soviet materials published since the conclusion of the ABM Treaty, the head of the Policy Planning Staff in the West German Defense Ministry recently determined that "although the Soviet literature refrained from any direct reference to the significance of missile defense, some writers showed that it was still possible to allude to the subject by extending the scope of air defense to space, as it were, and even by referring on occasion in this connection to the requirements of defense against 'ballistic' attack." Hans Ruhle, "Gorbachev's 'Star Wars,'" *NATO Review*, August 1985, p. 29.

¹⁶Speech to the U.N. General Assembly, September 26, 1962, excerpted in "When the Soviets Liked Superpower Defenses," *Wall Street Journal*, January 15, 1985.

Talenskii added, "it would hardly be in the interests of any peaceloving state to forgo the creation of its own effective means of defense against nuclear-missile aggression and make its security dependent only on deterrence, that is, on whether the other side will refrain from attacking."¹⁷

Lest one be tempted to dismiss Talenskii's remark as a narrow expression of military sentiment not shared by the civilian leaders in the Kremlin, no less an authority than the late Premier Kosygin was moved to tell President Johnson at the Glassboro summit in 1967 that a ban on missile defenses was, in Henry Kissinger's words, "the most absurd proposition he had ever heard."¹⁸ Kosygin gave voice to a similar outlook on the eve of SALT when he observed at a London press conference: "I think that a defense system which prevents [missile] attack is not a cause of the arms race. . . . Perhaps an antimissile system is more expensive than an offensive system, but its purpose is not to kill people but to save human lives."¹⁹ Read out of context, this statement would strike most casual readers of the newspaper today as an exhortation by President Reagan on behalf of SDI.

All in all, the weight of evidence regarding Soviet involvement in antimissile research, development, and testing, to say nothing of Moscow's apparent willingness (at least until the advent of SDI) to press to the edges of permissibility with respect to ABM Treaty compliance, casts more than a trace of doubt on the idea of some Western analysts that the Soviets underwent a major change in their thinking on

¹⁷"Antimissile Systems and Disarmament," reprinted in John Erickson (ed.), *The Military-Technical Revolution*, Frederick A. Praeger, New York, 1966, pp. 225-227. In a direct contradiction of Talenskii's statement, two prominent Soviet "Star Wars" critics more recently contended that "it is impossible to ensure reliably the security of a state by means of military-technical innovations. Even the very illusion of the possible achievement of such security is extraordinarily dangerous." Ye. Velikhov and A. Kokoshin, "Nuclear Weapons and the Dilemmas of International Security," *Mirovaia ekonomika i mezhdunarodnye otnosheniia*, No. 4, April 1985.

¹⁸*White House Years*, Little, Brown and Company, Boston, 1980, p. 208.

¹⁹Quoted in Ernest Conine, "Soviets Ride a Crooked Mile in Space," *Los Angeles Times*, August 26, 1985.

the desirability of ballistic missile defense at about the time SALT began in the late 1960s.²⁰ Rather more persuasive, in my own view at least, is the notion that the Soviets harbor no fixed attitude one way or the other on the value of strategic defense in the abstract, and that their shift in rhetoric in the aftermath of the ABM Treaty reflected far more an assessment that it would not be to Moscow's advantage to engage in a BMD competition with the United States than any broader doctrinal conviction about the merits of mutual vulnerability as a basis for deterrence.²¹ As the following discussion will indicate, the Soviet military continues to assign high priority to missile and space defense, however deficient its prevailing technology and hardware base may remain.

²⁰See, for example, David Holloway, "The Strategic Defense Initiative and the Soviet Union," *Daedalus*, Summer 1985, p. 259.

²¹This view is developed in David B. Rivkin, Jr., "What Does Moscow Think?" *Foreign Policy*, Summer 1985, pp. 93-95.

IV. SOVIET PROGRAM TRENDS

Any uncertainties the Soviet fighter and SAM communities may have felt about their ability to cope with the U.S. bomber threat during the early and mid-1950s were probably exceeded many times over by doubts about the vastly more demanding missile and space defense challenge. Full-scale development of Soviet BMD and ASAT systems did not even commence until almost a decade later. Nevertheless, the seeds of Soviet interest in dealing with these mission requirements were first planted during the early phase of Khrushchev's incumbency.

In a September 1961 interview, Khrushchev recounted that "at the same time we told our scientists and engineers to develop intercontinental rockets, we told another group to work out means to combat such rockets."¹ Confirmation of this can be traced back to the initial tests of the first-generation Soviet ABM in 1957, the same year the Soviet Union launched its first ICBM. Component testing apparently continued through 1960 and progressed to the point where Marshal Malinovskii could announce at the 22nd Party Congress, in the first public disclosure of the Soviet ABM program, that "the problem of destroying missiles in flight . . . has been successfully solved."² Following Khrushchev's subsequent claim that the Soviet Union had a missile that could "hit a fly in outer space,"³ commentary exuding confidence in the Soviet ABM began to appear with regularity. By 1964, the program had reached a point where the Soviets could actually put their ABM (concealed in its canister) on public display during the October Revolution anniversary parade.

Beneath all this rhetoric and posturing, the realities of the Soviet ABM effort fell far short of the attributes ascribed to it for political gain by the leadership. During those early years, the Soviet

¹*New York Times*, September 8, 1961.

²*Pravda*, October 25, 1961.

³*New York Times*, July 17, 1962.

Union was still more engaged in a feasibility demonstration than in developing an operational weapon that could handle the evolving U.S. missile threat. Site construction remained limited to the Moscow area. Moreover, although some Soviet spokesmen claimed that it was "theoretically and technically quite possible to counterbalance the absolute weapons of attack with equally absolute weapons of defense,"⁴ others insisted that "the means of defense lag behind the means of attack" and that it remained "technically impossible" for ABM defenses to neutralize all incoming missiles.⁵

Nevertheless, a whole new mission area was opening up for PVO, which for bureaucratic and other reasons was quick to seize the opportunity. For example, a special new section of PVO was established in 1964 under the rubric of PKO ("antispaces defense").⁶ Moreover, Soviet leaders seemed prepared to underwrite that mission with every effort to develop a technology base upon which operational defenses might eventually be built. In addition to its pioneering work in the ABM field, the Soviet Union was also showing interest in antisatellite weaponry, along with fascination over the long-term potential of lasers and directed energy.⁷

The advent of the Brezhnev regime brought a major turning point in Soviet force development. The new leadership appeared determined to

⁴Major General N. Talenskii, in Ericson, *The Military-Technical Revolution*, 1966, p. 221.

⁵G. Gerasimov, "The First-Strike Theory," *International Affairs* (Moscow), No. 3, March 1965, p. 7.

⁶"Soviet SDI--Reality Not Myth," *International Defense Review*, August 1985, p. 1219.

⁷One commentator, for example, claimed that "powerful ground radar stations can produce plasma that will arise around a ballistic missile. . . . Under the effect of the energy produced by the plasma, the ballistic missile will either be destroyed or knocked off the flight trajectory." Engineer Colonel M. Arkhipov, "Radiation Weapons," *Sovetskii patriot*, November 1, 1964, p. 3. See also Engineer Lieutenant Colonel O. Andreev, "Possible Military and Other Uses of Lasers," *Voennye znaniya*, February 1965, p. 39: "If a method of focusing large amounts of energy over considerable distances is developed, it will be possible to resolve many scientific and technical questions, and especially the problem of destroying intercontinental missiles."

match Soviet military doctrinal prescriptions with a comprehensive array of forces capable of backing them up. One goal of this effort was to provide the Soviet Union with a credible nuclear war-survival posture through increased active and passive damage limitation capabilities. No major shift in mission tasking per se accompanied this redirection of Soviet policy. All the same, the resultant buildup relieved PVO of much of its former operational burden by placing primary responsibility for damage limitation on the counterforce capabilities of the Strategic Rocket Forces. The post-Khrushchev buildup also reaffirmed the Soviet "all-arms" concept by providing a significant de facto "defensive" capability through its capacity to draw down U.S. offensive forces in a disarming attack. This, in turn, gave PVO a new lease on life and, for the first time, a serviceable mission: coping with independent nuclear deterrents and engaging the much smaller number of U.S. bombers and missiles that might survive a preemptive Soviet attack.

Thus despite the stress on offensive damage limitation in Soviet force planning, PVO continued to receive ample attention and funding. In its first big military program decision, in 1965 the Brezhnev regime authorized full-scale ABM site construction around Moscow. By 1968, it could claim the world's first functioning ABM when the GALOSH system achieved initial operating status.

Construction of the Moscow ABM drew to an abrupt halt shortly thereafter, at about the time the first signs of Soviet interest in a SALT dialogue with the United States began to appear.⁸ Although the motivations behind Moscow's expression of interest in arms limitation at that time remain a matter of conjecture, the Soviets may have had serious doubts about the operational prospects of GALOSH. They may also have seen the impending U.S. two-layered ABM based on Spartan and Sprint as a threat to their fourth-generation ICBM deployments. In all events, they apparently opted to forgo further deployment of their existing ABM as a necessary price for heading off the substantially more

⁸In response to repeated U.S. probings, Foreign Minister Gromyko announced in June 1968 that the USSR was now "ready for an exchange of opinion" on the matter of limiting strategic offensive and defensive arms. Report by Foreign Minister A. A. Gromyko, "On the International Situation and the Foreign Policy of the Soviet Union," *Pravda*, June 28, 1968.

sophisticated U.S. ABM and buying time to develop a more capable ballistic missile defense of their own.⁹ There is no evidence, however, that the ABM Treaty reflected any Soviet abandonment of the *concept* of strategic defense. On the contrary, Soviet military writings since the Treaty was signed have continued to underscore the enduring relevance of that mission. Beyond that, every aspect of current PVO development speaks to an undiminished Soviet seriousness about the importance of active homeland defense in Soviet military planning.

Today, the USSR maintains the world's only operational ABM.¹⁰ This system consists of the ABM-1B deployed around Moscow in four complexes, each with 16 reloadable launchers.¹¹ It provides a single-layered defense of the Moscow NCA against a light ballistic missile attack.¹² (The missile itself is housed in an above-ground canister and is equipped with a 3-MT warhead.) In recent years, 32 of the original 64 launchers were deactivated. However, the system has been steadily enhanced technologically since 1980. When completed later in the decade, it will offer a two-layered defense consisting of a total of 100 improved ABM-1 exoatmospheric interceptors and ABM-X-3 endoatmospheric interceptors (both of which will be silo-based with an expected reload capability).¹³

⁹Construction of the Moscow ABM resumed in 1971 and ended, with 64 deployed launchers, in time for the conclusion of SALT I.

¹⁰The U.S. Mickelson ABM complex at Grand Forks, South Dakota, was ordered dismantled by Congress in 1975, shortly after its completion, on cost-reduction grounds.

¹¹Reloads would be so slow, however, that the capability would probably not be helpful in combat.

¹²Battle management support is provided by the DOG HOUSE and CAT HOUSE target tracking radars south of Moscow and six TRY ADD guidance and engagement radars.

¹³The information on Soviet ABM and antisatellite trends discussed in this section is drawn from *Soviet Military Power*, U.S. Department of Defense, Washington, D.C., 1984. For additional data, see *Soviet Strategic Force Developments*, testimony before a joint session of the Subcommittee on Strategic and Theater Nuclear Forces of the Senate Armed Services Committee and the Defense Subcommittee of the Senate Committee on Appropriations, June 26, 1985, by Robert M. Gates, Deputy Director for Intelligence, Central Intelligence Agency, and Lawrence K. Gershwin, National Intelligence Officer for Strategic Programs, Central Intelligence Agency; Sayre Stevens, "The Soviet BMD Program," in Ashton B. Carter and David N. Schwartz (eds.), *Ballistic Missile Defense*, Brookings Institution, Washington, D.C., 1984; and *Soviet Strategic Defense Programs*, U.S. Department of Defense, Washington, D.C., October 1985.

Supporting this system is an extensive warning network. The first echelon is made up of missile launch-detection satellites that can provide up to 30 minutes' warning of an impending attack, as well as information on the attack's point of origin. The second layer consists of a line of OTH radars directed toward U.S. Minuteman fields, which can also provide up to 30 minutes' warning. Backing up both systems is a complex of HEN HOUSE phased-array radars situated at six locations around the periphery of the Soviet Union for attack characterization. These radars can confirm OTH indications and provide information on the size of the incoming attack, as well as some target tracking data. Technical improvements to enhance attack assessment are also in train.

Since 1983, the USSR has had under construction a large phased-array radar at Krasnoyarsk in Siberia. This radar fills gaps in the HEN HOUSE complex by providing coverage of an arc from the Kola Peninsula to the Caucasus Mountains. The Reagan administration has declared it to be in violation of the ABM Treaty, because it is not on the periphery of the Soviet Union, does not look outward, and has the capacity to provide terminal ABM battle management.¹⁴ The entire network, including a new large engagement radar at Pushkino, is expected to be operational by the late 1980s.

This continuing Soviet development of long lead-time items such as warning and battle management radars, as well as ambiguities in the testing of surface-to-air missiles (the SA-10 and SA-X-12) that suggest possible ABM applications, reflects a disconcerting process of what has been called "creep-out" along the margins of the ABM Treaty. These trends may be contributing to a real Soviet breakout option by the end of this decade should the Soviet leaders, for any reason, find merit in renegeing on the ABM Treaty.¹⁵ The continued pursuit of such "creep-out" measures (advancing the longer lead-time systems to a point where

¹⁴For the fullest available documentation, see "The President's Unclassified Report to the Congress on Soviet Noncompliance With Arms Control Agreements," The White House, Office of the Press Secretary, Washington, D.C., February 1, 1985.

¹⁵A plausible argument can be made that one of the real reasons for Moscow's agitation over SDI is that it makes much more difficult any such Soviet breakout choice by making the United States a potentially unbeatable competitor. In this interpretation, the Soviets may have

they could be rapidly made operational and continuing to press at the margins of legality on SAM upgrades) could at some point give the Soviets a deployable ABM that could be brought on line in months rather than years.¹⁶ Because of their limited capability against very high-speed reentry vehicles, the SA-10 and SA-X-12 may not represent a threat to U.S. ICBMs. They could, however, be developed to a point where they might be able to intercept U.S. and third-country SLBM warheads, which are slower, present larger radar signatures, and are invulnerable to Soviet counterforce targeting.¹⁷ They may also have eventual applications against such U.S. tactical ballistic missiles as Pershing.¹⁸

As for exotic technologies, there is less to be said because the indicators are more ambiguous and the U.S. government has been constrained from disclosing much of what it does know about Soviet activity. It is generally recognized, however, that the Soviets have a vigorous program of particle-beam research under way. They are also working on lasers and other forms of directed energy that could likewise be aimed toward a first-generation BMD capability, although probably not before the turn of the century.

been nurturing hopes all along of bidding farewell to the ABM Treaty at some point in the coming decade (assuming a continued pattern of desultory U.S. competition), but have since had these ambitions dashed by SDI. For a good, if now dated, discussion of possible Soviet calculations about the gains and risks of abandoning the ABM Treaty, see Abraham S. Becker, *Strategic Breakout as a Soviet Policy Option*, The Rand Corporation, R-2097-ACDA, March 1977.

¹⁶In the first public intimation of Soviet thinking along these lines two decades ago, Lieutenant Colonel V. Bondarenko called for the "creation of a basically new weapon, secretly nurtured in scientific offices and design collectives," which, he said, could "abruptly change the correlation of forces . . . and deprive the adversary for a long time of any possibility of applying effective countermeasures against the new system." "Military-Technological Superiority: The Most Important Factor in the Reliable Defense of the Country," *Kommunist vooruzhenykh sil*, No. 17, September 1966, pp. 7-14.

¹⁷David S. Yost, "Soviet Ballistic Missile Defense and NATO," *Orbis*, Summer 1985, p. 284.

¹⁸Indeed, the SA-X-12 has reportedly been successfully tested against the Soviet SS-4 MRBM (see "New Soviet Missile Defenses," *Foreign Report*, April 14, 1983). This, one might add, despite Soviet claims as to how it should be "clear to every unbiased person that the Soviet Union's air defense system bears no relation to ABM defense." "On the United States' So-Called Strategic Defense Initiative," *Izvestiia*, January 25, 1985.

Soviet laser research goes back at least to the early 1960s, when Khrushchev was known to keep a piece of laser-riddled steel prominently displayed on his desk in the Kremlin as a demonstration of Soviet technological prowess to foreign visitors. Today, the USSR maintains some six R&D facilities and test ranges employing over 10,000 scientists and engineers dedicated exclusively to laser research. These enterprises are now busy at work on a variety of gas dynamic, electric discharge, and chemical laser concepts--all with potential weapons applications. On the last count, the Soviets are reported already to have an early-generation ground-based laser at the Sary Shagan BMD test center capable of interfering with U.S. satellites in low earth orbits. They have also apparently tested both ground and airborne lasers intended for point defense of ships and for theater and homeland air defense.

Alongside their laser development efforts, the Soviets have invested in several kinetic-energy concepts with a potential BMD role. For example, they are known to be working on an electromagnetic rail gun, and they have tested another gun capable of shooting streams of heavy metal particles (such as tungsten) at speeds approaching 60 km/sec in a vacuum. As in the case of Moscow's laser, radio-frequency, and particle-beam research, these efforts are vigorously striving to validate technologies that could lead to deployable Soviet weapons perhaps as early as the mid-1990s.¹⁹

Finally, in the realm of antisatellite warfare (where recent Soviet statements would generally have their audiences believe the USSR is not involved), the Soviet Union has had an operational capability to intercept and destroy satellites in low orbit since the 1970s.²⁰ This is a missile-launched weapon designed to rendezvous with the target

¹⁹The most comprehensive U.S. government statement on Soviet exotic weapons research is offered in "SDI: The Soviet Program," U.S. Department of State, Bureau of Public Affairs, Current Policy No. 717, which reprints an address by Paul Nitze to the Chautauqua (New York) Conference on Soviet-American Relations, June 28, 1985. See also "USSR: Nitze on Soviet Strategic Defense," *Defense and Foreign Affairs Daily*, July 5, 1985; and Jack Anderson and Dale Van Atta, "Soviets Take Lead in Space Lasers," *Washington Post*, September 6, 1985.

²⁰Understandably, the Soviets have been reluctant to admit any involvement of their own in the missile and space defense business. For

using radar sensors and destroy it with a pellet warhead. It has been described by one press account as "the space equivalent of a Beirut car bomb."²¹ This system, currently the world's only operational ASAT, is deployed on two launch sites at the Tyuratam missile test center. With available reloads, it could loft several interceptors a day. Compared with to the U.S. ASAT employing a SRAM booster that has been successfully flight-tested from an F-15, the Soviet system is quite primitive. But it remains a visible manifestation of Soviet intent and clearly belies Soviet propaganda. The Soviets also have the technical capacity for employing electronic and countersensor measures against U.S. satellites.

example, in May 1985 Defense Minister Sokolov denied that the USSR was engaged in developing what the Soviets call "space strike weaponry," although he conceded that Moscow was indeed working on passive space systems for C3I and early warning (see William J. Eaton, "Soviets Warn U.S. Against Space Defense," *Los Angeles Times*, May 6, 1985). However, apparently responding to widespread Western awareness that Moscow is less than untainted itself with regard to "Star Wars," Colonel General Chervov, the General Staff's spokesman on arms control, conceded for the first time in an interview shortly thereafter that the Soviet Union had successfully tested an ASAT weapon, even though he insisted that the system in question consisted of land-based missiles rather than "killer satellites," as if the intent were any different. See Pierre Simonitch, "USSR Has Antisatellite System," *Frankfurter Rundschau*, May 30, 1985, and "USSR: Soviet General Confirms ASAT System," *Defense and Foreign Affairs Daily*, June 11, 1985.

²¹"Star Wars: The Soviet Thrust," *U.S. News and World Report*, February 18, 1985, p. 34.

V. POSSIBLE PRIVATE SOVIET CONCERNS ABOUT SDI

As noted above, there has been a prominent strain of disingenuousness in Moscow's pronouncements against SDI. This heated rhetoric has contrasted sharply with the Kremlin's studied silence regarding its own activity in the missile-defense sphere. However, the Soviet leadership does not view SDI with equanimity.

To be sure, many of their public arguments against SDI probably mask their actual concerns. For example, their intimation that a determined SDI race will make nuclear war "inevitable" is overdrawn, if only because of the USSR's inherent predispositions toward caution and risk avoidance.¹ Their claim that SDI will "wreck arms control" has merit only if they choose to cooperate in letting it do so through their own continued refusal to countenance significant offensive force reductions. And it is most doubtful that the Soviets privately regard SDI as the bow wave of a full-fledged American first-strike capability. Whatever propaganda benefits they may accrue from accusations of this sort, they almost certainly appreciate that even if that were the President's motivation, Congress and the American public would be unlikely to support it.

Although one cannot say for sure, there is good ground for believing that Moscow's real concern about SDI relates to its generic potential for upsetting the existing basis of Soviet security if allowed to mature into a deployed capability, regardless of any technical problems it may encounter along the way. Particularly in light of all the other force enhancement efforts of the Reagan administration in both conventional and nuclear systems, the Soviet leaders also probably assess SDI as evidence that the United States has now become a more determined adversary after years of failure to hold up its end of the strategic arms competition.

¹For further discussion, see my "Uncertainties for the Soviet War Planner," *International Security*, Winter 1982/83, pp. 139-166.

After all, Moscow had every reason to be warmly pleased with the strategic stature that was conferred upon it by SALT I. Soviet spokesmen freely admit that the United States maintained strategic superiority until about 1970, when the USSR first surpassed the United States in total numbers of ICBMs and SLBMs. It must inspire considerable consternation for them to contemplate the possibility that the tables may be turned again by SDI's neutralizing Moscow's hard-earned image of "equivalence" with the United States. Since SDI was announced, Soviet commentators have often bitterly denounced it as proof of America's inability to reconcile itself to living with an equally endowed adversary. Yet a good deal of genuine discomfiture must underlie this argument. When Soviet officials insist that SDI has undermined the SALT "consensus" (which, one should note, has worked handsomely to Moscow's advantage over the past decade), what they really fear--and with good reason--is their own strategic ambitions will henceforth be harder to attain because of Washington's new-found determination to counter them.²

Related to this perception is probably a Soviet belief that SDI is part of a larger U.S. effort to broaden its nuclear warfighting capability--or at least to undermine Moscow's *own* war-survival efforts. Especially in light of such parallel developments as MX, Trident D5, and Pershing II (along with B-1B and the ATB), Moscow may view SDI as a stepping stone toward a significant U.S. strategic advantage. This, in turn, could add to American resolve in crises, underwrite a more assertive U.S. international posture, and perhaps even encourage Washington to preempt in a sufficiently grave military showdown.

In this regard, the Soviets have repeatedly argued that ballistic missile defense (or at least an American one) favors the attacker, because it would be impossible to stop a massive nuclear onslaught yet much easier to blunt a ragged retaliatory strike by the enemy's

²This is implied in the Soviet observation that SDI represents not just a new development in U.S. hardware, but also a change in the American theory of deterrence. See, for example, V. R. Bogdanov and A. I. Podberezkin, "Notes on the Qualitative Arms Race," *SShA: ekonomika, politika, ideologiya*, No. 3, March 1984, pp. 120-127.

surviving--and undoubtedly degraded--nuclear forces. Of course, this refrain has frequently been exploited to propaganda advantage by the Soviets, but that scarcely vitiates its substantive merit. To be sure, the Soviets are probably not nearly so fearful of an increased danger of war emanating from SDI as their statements would have Western audiences believe. Furthermore, they surely understand that any *serious* effort by the Reagan administration to seek a first-strike capability would face formidable domestic and intra-NATO political hurdles--hurdles that the Soviets could easily exacerbate through a skillful "peace" campaign. It is entirely plausible, however, that they view SDI as a severe challenge to their own concept of deterrence by denial.

Even a less than leakproof U.S. BMD capability could erode Moscow's considerable investment in hard-target ICBM development.³ It would also compel the Soviets to undertake major new programs of their own to restore an acceptable image of strategic parity. Such offsetting measures could prove particularly costly should they eventually find themselves forced to deal with U.S. boost-phase intercept capabilities, for which simply MIRVing up or adding penetration aids to Soviet ICBMs will not help. These measures will necessarily mean an added burden of program and budgetary obligations that Soviet planners (to say nothing of their Party superiors) might genuinely prefer to avoid. They could also turn out to be highly stressful on an already overtaxed Soviet economy and could prove very disruptive to Soviet efforts to invest in other sectors, both within and outside the defense realm.⁴

Finally, SDI could be viewed by Moscow as the cutting edge of a threat to convert American technological superiority into a practical advantage. Whatever disdain the Soviets may harbor for the United States from an ideological viewpoint, there is no denying that they hold American technical prowess in high regard. Although they have long been

³The Soviets in their declaratory commentary have generally expressed this concern with the formula that SDI would deny the USSR the possibility of executing a *retaliatory* strike.

⁴The Chief of the Soviet General Staff, Marshal Akhromeyev, admitted in a Czech newspaper article in 1983 that the Soviet Union was only beginning at that time to emerge from "a serious economic slump." "We Must Not Allow War: The Doctrine of Aggression and the Doctrine of the Defense of Peace," *Pravda* (Bratislava), June 22, 1983.

busily at work on their own BMD program, that effort had, until the advent of SDI, gone largely uncontested. A serious U.S. campaign to validate new anti-ballistic missile concepts would mean that those countervailing Soviet efforts would now have to shoot at a fast-moving technological target. It could also threaten to leave Moscow in a distant second place in the technological competition. Since President Reagan's first articulation of his SDI vision, the Soviets have suggested in passing that they can match it with ease if need be.⁵ These too-casual-by-half asides have had an unmistakable tone of whistling past the graveyard and may reflect some abiding private Soviet fears that in fact they cannot. Although Moscow has reaped great propaganda benefits from those U.S. scientists who have insisted that SDI will never work, the remarkable outpouring of Soviet efforts to head off SDI and enlist West European support in that campaign is strong presumptive evidence of a deep Soviet fear that it will work only too well.

These sources of "real" Soviet worry about SDI (as distinct from the propaganda line) naturally raise the question of how U.S. threats to pursue a high-confidence BMD posture might affect offsetting Soviet force developments. We need to consider how variations in emphasis and effort in U.S. SDI implementation might affect the direction and tempo of Soviet R&D and deployment in the same area. Even more important, we need to know how SDI might influence Soviet offensive force development aimed at undermining its effectiveness. Answers to these questions, insofar as available evidence can take us beyond informed speculation, will have a significant bearing on the ultimate operational effectiveness of any SDI constellation that may be deployed. They can also help to inform a joint American and NATO strategy aimed at determining how (and at what price in terms of needed reciprocal concessions) SDI might be wielded to elicit more cooperative Soviet involvement in the arms control process.

⁵For example, the director of the Soviet Union's largest center for research into lasers and nuclear fusion, Nobel prize-winning physicist Nikolai Basov, asserted that the USSR would have "no scientific problem in developing lasers capable of intercepting missiles in space." Remarks at Madrid's Polytechnical University, as reported by *Agence France-Presse*, January 28, 1985.

VI. POTENTIAL RESPONSES NOTED IN OPEN SOVIET COMMENTARY

As one might have expected, Moscow's reactions since President Reagan's 1983 "Star Wars" speech have repeatedly insisted that any U.S. BMD deployment (or even development beyond the most narrowly construed "research") will meet with determined Soviet offsetting measures. For the most part, such admonitions have remained limited to general assertions that the USSR will respond "as necessary" and will not let the United States recapture strategic superiority. Yet beyond such generic warnings, there have also been more focused Soviet statements from time to time suggesting that such responses could come in the form of offensive systems, defensive systems, or both--including programs aimed at directly suppressing SDI.

On the first count, Moscow's position was initially voiced by Party leader Andropov himself in his rejoinder to President Reagan's SDI announcement, when he affirmed that the Soviet Union "will never be caught defenseless by any threat."¹ The same line was echoed shortly thereafter by Defense Minister Ustinov, who let it be known with regard to SDI that the USSR could be counted on not to "forgo its security interests or the security of its allies."² In the ensuing shuffle that followed Andropov's death, Party bosses Chernenko and later Gorbachev were also heard from in much the same vein. In a typical refrain, Chernenko noted in May 1984 that any U.S. SDI effort would naturally oblige the Soviet Union "to take measures to guarantee its security reliably."³ Reiterating this message shortly before he died, Chernenko pointed out that "if we are compelled, we shall do our utmost, as we have done more than once in the past, to protect our security and the security of our allies and friends."⁴ More recently yet, the Chief of

¹Interview in *Pravda*, March 27, 1983.

²Speech in East Germany, in *Krasnaia zvezda*, April 7, 1983.

³Reply to an appeal by U.S. scientists, *Pravda*, May 20, 1984.

⁴Interview with Cable News Network, *Pravda*, February 2, 1985.

the General Staff, Marshal Akhromeyev, cited Gorbachev's address to the April 1985 CPSU Plenum, in which the latter avowed that "we will continue to spare no effort to ensure that the USSR armed forces have everything necessary for the reliable defense of our fatherland and its allies so that nobody can take us by surprise."⁵

The Soviet Union did not lack in resources needed to back up this admonition either, at least not in the words of many a Soviet spokesman. For example, Academician Velikhov observed in *Pravda* that "the Soviet Union has repeatedly proved that its existing economic, scientific, and technical potential enables it to respond adequately and in the briefest possible time to any threat against its security."⁶ Likewise, then-Foreign Minister Gromyko assured his audience in a January 1985 domestic television interview that any U.S. effort to regain strategic superiority through SDI was bound to be fruitless: "We will not allow that. We have colossal resources, both material and intellectual, sufficient to enable us to secure our position."⁷

Moscow's avowed determination to maintain its position of "equal security" in the face of SDI was further stressed in a *Kommunist* article by Marshal Akhromeyev in early 1985, which simply noted that "the USSR will not allow the United States to achieve strategic superiority over it. No one should have any doubts on this question."⁸ Comparable statements from various Soviet sources since President Reagan's "Star Wars" speech could be marshalled at length. The essence of the Soviet line, however, was captured in a *Pravda* refrain to the effect that in its preoccupation with the various technical facets of BMD, the United States was forgetting "the main thing--the Soviet Union's inevitable

⁵"The Great Victory and Its Lessons," *Izvestiia*, May 7, 1985.

⁶Velikhov, *Pravda*, April 30, 1984. Velikhov and his anti-SDI partner Kokoshin delivered essentially the same message in *Izvestiia*, July 22, 1984, and *Mirovaia ekonomika i mezhdunarodnye otnosheniia*, April 1985.

⁷Conversation with Soviet journalists, Moscow television, January 13, 1985.

⁸Marshal S. Akhromeyev, "The Superiority of Soviet Military Science and Military Art as One of the Most Important Factors of Victory in the Great Patriotic War," *Kommunist*, No. 3, February 1985, pp. 49-63.

reaction. . . . The Soviet Union will not sit idly by."⁹ Whatever form this "inevitable reaction" might eventually take, *Pravda's* editor summed up the thrust of Moscow's message with the reminder that "every poison has its antidote. We will find the means of countering space weapons."¹⁰

Furthermore, there have been periodic allusions to the broad character those Soviet responses might assume. Most have indicated a preference for penetrating any defensive shield the United States might erect. In one of the earliest Soviet references to this counter-offensive option, Academician Velikhov suggested that any idea of a perfect defense against attacking systems was "dubious to the highest degree," because those systems "would immediately begin to be improved with the express aim of overcoming it."¹¹ Likewise, Academician Feoktistov, a deputy director at the Kurchatov Atomic Energy Institute, remarked in September 1983 that should the United States seek a comprehensive ABM capability, "the opposing side will create a quantitative superabundance of attack missiles."¹² A year later, he repeated this point, claiming that a space-based ABM would be "economically inviable at best. . . . If attack means are much cheaper, they will fulfill their mission simply by outnumbering the defensive facilities."¹³

⁹*Pravda*, March 22, 1984.

¹⁰Viktor Afanasyev, "The Lessons of the Great War," *Le Monde*, May 16, 1985, p. 2. In connection with this argument, some Soviet commentators have voiced a preference *not* to compete with the United States in strategic defenses but have pleaded that U.S. determination to press ahead with SDI leaves the USSR no practical choice--even in light of the asserted "futility" of missile defense. Academician Velikhov put it this way: "It would be good if we don't try to respond. . . . It's irrational from a military point of view, irrational from an economic point of view. But it's very difficult to resist if the U.S. spends half a trillion dollars for this crazy development." Interview in *Los Angeles Times*, July 24, 1983.

¹¹*Mezhdunarodnaia zhizn*, No. 7, July 1983. Velikhov went on to note that the Soviet Union might also seek a capability for directly suppressing any U.S. BMD system in addition to pursuing improved offensive force penetrativity: "So-called 'defensive' weapons would be followed into space by an offensive weapon. . . . The deployment of antisatellite weapons would become inevitable."

¹²Speech at a Moscow conference entitled "Scientists Against the Threat of Nuclear War," May 17-19, 1983, in *Vestnik akademii nauk*, No. 9, September 1983.

¹³Interview in *Novoye vremya*, No. 42, October 1984. As with so many

Other Soviet commentators have implied that Moscow would instead emulate any U.S. SDI effort, so as to deny Washington a monopoly in this critical area. For example, *Izvestiia*'s Alexander Bovin asserted that the USSR "cannot take a passive attitude" in the face of SDI, "so we also have to create a similar defense system."¹⁴ Finally, there have been Soviet statements implying that the USSR may respond in both offensive and defensive categories. For example, an *Izvestiia* article in early 1985 proclaimed that the USSR will be obliged to respond to any U.S. SDI deployment "either by building up its own offensive forces directly or by supplementing them with means of defense."¹⁵ Georgii Arbatov said much the same when he remarked that if the Americans "develop their defensive systems, then we must also develop not only our defensive systems but also missiles that would be able to penetrate their defense."¹⁶

In one major case (the so-called "Sagdeyev study"), the Soviets have produced a surprisingly detailed survey of counter-SDI options, going well beyond generalities and describing highly specific systems, technologies, and operational concepts. This case involves the much-publicized critique produced by the "Working Group of the Committee of Soviet Scientists for the Defense of Peace and Against the Nuclear Threat."¹⁷ That account cited the possibility of both passive and

of the Soviet Union's statements about the feasibility and problems of ballistic missile defense, this one largely echoes criticisms that have been voiced against SDI by Western opponents of the program. Academician Velikov said much the same thing earlier this year: "The ABM system will turn out to be highly vulnerable to various countermeasures. . . . There are always simpler and cheaper methods for overcoming even the most sophisticated 'defense systems.'" The Soviets never talk in much technical detail about current weapon concepts unless these have already been amply covered in the foreign press.

¹⁴Radio Moscow domestic service, July 8, 1984. This statement, however, was probably aimed at reassuring *Soviet* audiences that the United States will not be allowed to pull ahead in the defensive arena.

¹⁵*Izvestiia*, January 25, 1985.

¹⁶G. A. Arbatov, interview with Angelos Stangos, *Ta Nea* (Athens), January 31, 1985.

¹⁷The full title of this document is "The Strategic and International Political Consequences of Creating a Space-Based Antimissile System Using Directed-Energy Weapons." It appeared in both Russian and English and was signed to the press on April 21, 1984. For

active countermeasures against space-based weapons. As for active measures, it included:

- Fast-burning missiles with high thrust-to-weight ratios for direct-ascent intercept of BMD systems in orbits of 1500 to 2000 km.
- Placement of space mines in orbits adjacent to BMD targets.
- Use of high-powered ground-based lasers, which are not constrained by many of the limitations (such as those governing mass, size, and power) faced by space-based lasers.
- Obstacles placed in the orbital paths of space-based BMD platforms.
- Use of deceptive missile launchings or decoys to force BMD stations to deplete their firepower before the real missiles are launched.

Passive measures noted in the Soviet "study" included these examples:

- Camouflaging missile launchings through the use of smoke screens.
- Use of multilayered booster casings and ablative coatings (as well as highly reflective coatings) to provide missile hardening against lasers.¹⁸

key excerpts, see *Selected Soviet Statements on Countermeasures Against SDI*, Special Memorandum (Foreign Broadcast Information Service, February 1985), pp. 7-9; and "Space-Based Defenses: A Soviet Study," *Survival*, March-April, 1985, pp. 83-90. See also Dusko Doder, "Soviets See U.S. Deception," *Washington Post*, January 7, 1985; and Fred Kaplan, "Ploy or Warning, Soviet Study Stings," *Boston Globe*, January 13, 1985.

¹⁸These were referred to also by Velikhov a month later, who spoke of "the hardening of ICBM boosters" as a likely countermeasure to SDI and added that it was "highly probable that there will emerge a weapon intended to neutralize these systems"--another public reference to direct suppression of SDI. "Effect on Strategic Stability," *Bulletin of the Atomic Scientists*, May 1984, pp. 12-15 of a special supplement.

The report also mentions the tactic of manipulating the timing of ICBM launches to force the defense to shoot randomly at all sectors of the target area. It claims that countermeasures such as those outlined above can be fielded, even in the near term, with currently available technology and at a cost of perhaps as little as 1 or 2 percent of that of the defense. Finally, it notes in passing such options as increasing the number of delivery vehicles (especially cruise missiles) and warheads.¹⁹

Although this document, produced under the leadership of a prominent Soviet scientist, Roald Sagdeyev, has been heralded in some Western circles as an "authoritative" reflection of Soviet thinking, there is good reason to regard its motivations with skepticism. For one thing, it merely repeats counter-SDI options that have been widely noted in the Western press. Furthermore, the level of detail it embraces on such supremely operational matters as the techniques and tactics of ballistic missile defense is unprecedented in open Soviet public commentary on military matters. The Soviet leadership would hardly have permitted its release unless some purpose other than communicating straightforward technical analysis was intended (even if the document is not in basic technical error as far as it goes). Finally, many members of the group that endorsed it bear questionable credentials to render such technical judgments. For example, the principal co-author, Andrei Kokoshin, nominally the Deputy Director of the Institute of the USA and Canada, has been one of the leading Soviet propagandists against SDI and

¹⁹Other concepts, more in the form of propaganda artistry than reflections of serious Soviet thinking, were offered in Valentin Falin's references to such notions as "rocket bases on the moon" and filling space with "a mass of garbage that will liken a sophisticated detection and identification system to a bloodhound forced to follow a trail dusted with a mixture of tobacco and pepper." *Izvestia*, December 14, 1984. Except for the Sagdeyev "study" and occasional comments by bona fide technicians such as Velikhov, Soviet statements on SDI countermeasures have uniformly emanated from people like the Arbatovs with no obvious basis for knowing anything about actual Soviet options planning. For that matter, there is good reason to wonder whether even the Sagdeyev "study" represents authoritative Soviet military thinking, rather than merely a parroting of SDI countermeasures commonly discussed in the Western media.

is reportedly a KGB officer.²⁰ Another member, Alexei Arbatov of the Institute of World Economy and International Relations, likewise has no technical background and is mainly a specialist in U.S.-Soviet relations.

A final aspect of Soviet commentary on SDI has been a recurrent series of remarks--apparently prompted by a statement by Defense Minister Sokolov in May 1985--that the USSR will not be driven down any military investment path laid out for it by the United States. In an apparent bid to scotch any U.S. hopes that Moscow might accept the logic of a defense-dominated strategic environment, Marshal Sokolov repeated the familiar line that the Kremlin's response to any SDI deployment could involve both defensive and offensive counters. He further insisted that any such Soviet choices would be made solely with reference to Soviet security interests, rather than out of consideration for any American strategic preferences.²¹

The same point was echoed by the General Staff's principal front man on arms control, General Chervov, in an interview with two American reporters: "We are not going to take the path that the U.S. administration is trying to force us into. . . . We have made it clear that we will not ape the United States in spending billions on space weapons."²² In language almost identical to Sokolov's, yet a third military spokesman wrote that the USSR's responses could entail measures "in the sphere of both defensive and offensive arms," but that "needless to say, the USSR will choose the methods of action most consonant with the interests of its defense capability rather than those which Washington figures would like to persuade it to choose."²³ Most

²⁰See "The KGB's Peacenik," *Foreign Report*, July 25, 1985.

²¹TASS interview, reported in *Krasnaya zvezda*, May 5, 1985. Although novel in the context of SDI, this refrain has a precedent in general Soviet strategic commentary. For example, civilian defense analyst Henry Trofimenko observed in 1983 that "in giving an effective answer to Washington's military program . . . the USSR is not going to match the U.S. in development of every new system of weapons, nor is it going to imitate it." Quoted in Stephen Shenfield, "Soviets May Not Imitate Star Wars," *Bulletin of the Atomic Scientists*, June-July 1985, p. 38.

²²Jim Hoagland and Dusko Doder, "Moscow Won't 'Ape' SDI, Top Soviet General Says," *Washington Post*, June 9, 1985.

²³Major General A. Fedorov, "What Lies Behind the Publicity? The Truth About the U.S. Program for the Militarization of Space," *Krasnaya*

recently, Georgii Arbatov propounded the same line. In response to a question about Soviet willingness to entertain deep cuts in offensive forces, Arbatov reiterated the now-stock refrain that any such possibility would be precluded by a continuation of SDI. In the latter event, he said, "we have to increase our armaments, and we won't go the way the Americans want us to go, spending just as much money as you do on nothing in a mirror image of your efforts. We will work on weapons to counter this SDI."²⁴

zvezda, July 2, 1985. Similar remarks appeared later that month in Soviet comments expressly intended for Western consumption. In a letter to the editor, Soviet "press correspondent" Alexander Malyshkin insisted that "we in the Soviet Union don't exactly eat soup using our shoe for a spoon. Our national industry is capable of producing all types of weaponry which the U.S. has now or is going to have in the future. . . . The USSR will choose methods of action that are most in the interests of its defensive capacity, not those that the U.S. administration would like to steer it toward." *Los Angeles Times*, July 22, 1985. The same day, Lieutenant General Konstantin Mikhailov, deputy chief of the General Staff's Organizational Department, stated much the same thing in an interview with a German reporter. He also added that instead of copying SDI, the Soviet Union could increase the number of its ICBMs, and concluded: "Even if SDI were to be 95 percent effective, the United States would not have gained anything," because the United States could be destroyed by only 5 percent of the USSR's warheads. *Frankfurter Rundschau*, July 22, 1985, p. 2. This last point, of course, echoes a flawed argument commonly made by uninformed Western critics of SDI, who assume that 100 percent (or even a large fraction) of Soviet warheads would be targeted against U.S. cities in the first place. For a useful corrective to that fallacy, see Fred Hoffman, "The SDI in U.S. Nuclear Strategy," *International Security*, Summer 1985, p. 16.

²⁴Quoted in Robert Scheer, "Arms Freeze Possible at Summit, Soviet Aide Says," *Los Angeles Times*, September 27, 1985.

VII. FACTORS BEARING ON MOSCOW'S RESPONSES TO SDI

A useful way of considering how the USSR may actually deal with SDI once the time comes is to think in terms of short-term and longer-term responses. By short term, I mean the immediate policy context associated with the ongoing superpower arms control dialogue. By longer term, I mean that period out to about 1995, during which time any now-foreseeable Soviet technical counters to SDI will be in a position to register at least the beginnings of deployment. (Any attempt at this stage to contemplate responses beyond that horizon would be purely speculative in light of the absence of any indicators of likely Soviet development preferences beyond those program commitments that have already been made.)

Defined as such, the short-term Soviet response has really been under way almost from the day SDI was announced and has involved a determined effort to kill it politically through a variety of divide-and-conquer tactics before it gains enough momentum to become a tangible military threat. This campaign, already discussed, has featured a twofold assault aimed at driving a wedge between the United States and its allies and at fomenting domestic opposition to SDI both within and outside the U.S. defense community.

On the first count, the Soviets have sought to erode the allies' support for SDI by playing on their fears of nuclear war, of being left "exposed" by a U.S. defensive umbrella that would offer them no protection, and of having their "good relations" with the Soviet Union jeopardized by associating themselves with SDI.¹ This campaign has reached well beyond NATO Europe to address other friendly countries as diverse as Japan and Israel. It has also pressed into service some of the highest officials of the Soviet elite (including Gromyko,

¹As an example of this sort of browbeating, then-Foreign Minister Gromyko personally informed his West German counterpart in early 1985 that the Kremlin would view the Bonn government as an "accomplice" in violating the ABM Treaty if it helped the United States with SDI. See "Kremlin Warns Bonn Against Role in U.S. Star Wars Project," *Los Angeles Times*, March 5, 1985.

Shevardnadze, and Gorbachev), who have repeatedly taken to the hustings against SDI in visits to Western capitals over the past two years.

On the second count, Moscow has targeted the American media and those opinion elites with preexisting biases against SDI in a calculated effort to erode whatever popular consensus may now underlie SDI. This effort has drawn on such ammunition as the Sagdeyev "study" to help feed doubt about the feasibility of a space-based BMD system. It has further exploited the natural yearning of Americans for arms control by playing to the grandstands with a variety of tantalizing force reduction "proposals," while maintaining a Sphinx-like silence in the negotiating arena in the hope that the administration's position on SDI will be forced to yield under the pressure of public opinion.²

In this latter connection, Moscow has again sought to cash in on the public diplomacy it first discovered during the latter years of Brezhnev's rule, principally reflected in its earlier unsuccessful effort to undermine the introduction of Pershing II and GLCM into NATO's nuclear posture. This activity suggests that Moscow's arms control posturing remains in a highly tactical phase, with the Kremlin's last word on offensive force reductions very much yet to be heard. Yet it also testifies to Moscow's appreciation that democracies like ours are uniquely vulnerable to such disruptive influences aimed at programs that require sustained support over multiple administrations to achieve full operational capability.³

²Without a doubt the most spectacular (and most successful) display of this Soviet effort to manipulate American popular attitudes toward the "arms race" was the lengthy interview granted by Gorbachev in *Time*, September 9, 1985, pp. 22-28. That interview held out a basis for Western optimism about Soviet negotiating tractability that has clearly not been matched in Soviet diplomatic conduct behind closed doors. According to U.S. participants in the workups to the 1985 Geneva summit, "There has been a pattern of Soviet inflexibility inside the conference room, coupled with hints of flexibility outside." Don Cook, "Geneva Arms Talks Reopen, Focus on Summit," *Los Angeles Times*, September 20, 1985.

³A notable example of Moscow's effort to reach U.S. opinion came in the form of an elegant, multicolored pamphlet entitled *Star Wars: Delusions and Dangers*, published by the Soviet Defense Ministry and widely circulated in the United States (see Bill Gertz, "Soviets Acknowledge Space Weapons Research in New 'Star Wars' Booklet," *Washington Times*, August 22, 1985). Moscow's dissemination of that tract prompted the U.S. Defense Department shortly thereafter to counter with its own pamphlet summarizing U.S. knowledge about Soviet

Should this political campaign fail to halt SDI, the Soviets will then have to turn to more tangible responses of a programmatic nature, alternatives whose feasibility and cost are almost surely being debated intensely within the Kremlin today. How these options will evolve and which may see the light of day are impossible to predict in the abstract. However, one can certainly identify at least some of the factors that will bear most heavily on whatever choices the Soviets ultimately adopt.

THE PROMISE OF SOVIET TECHNOLOGY

Assuming that SDI runs the course and obliges Moscow to react the hard way, the options available will necessarily be bounded by the possibilities and limitations of Soviet technology. For the period running out to about the middle of the next decade, any Soviet programmatic response will very likely draw on concepts and capabilities that are already in hand. For the following decade, of course, the menu of options will be broader. But even then, the Soviets will be constrained by technologies and design concepts generated by development choices that will be made in the next few years. One of the problems posed for the Kremlin by the multilayered defense scheme envisioned by SDI is that the Soviets will have to react not only to a demanding technological challenge but also to a highly multifaceted one. By simultaneously exploring a broad spectrum of boost-phase, mid-course, and terminal intercept configurations, SDI will force Moscow to concentrate its resources against negating *all* of these schemes if it wishes to preserve the offensive advantages it currently enjoys. Obviously, that will stress Soviet R&D far more than would the need simply to counter a single U.S. BMD component.

In this connection, it seems especially vital that in doing our own "threat response" modelling (that is, in trying to anticipate potential Soviet countermeasures), we exercise care to use realistic

involvement in SDI-related programs, in the latest round of what has now become a regular U.S.-Soviet competition in strategic "brochuremanship." On the latter document, see "Soviet Star Wars," *Time*, October 14, 1985, p. 28.

extrapolations of what the Soviets are likely to come up with, based on known intelligence about Soviet design practices and engineering strengths and weaknesses, rather than building our SDI architecture against worst-case projections of the countermeasures our *own* technology might produce in an ideal world. Otherwise, we will face the needless complication of designing defenses against near-perfect counters, rather than against the substantially less elegant ones we are more likely to encounter in the real world. In the long run, adherence to excessively demanding performance specifications could easily be the downfall of SDI.⁴

THE POLITICAL DURABILITY OF SDI

Although Moscow faces many technical hurdles in trying to counter a determined U.S. SDI effort, this difficulty may be somewhat eased by the fact that the United States has not shown a particularly impressive record of sustaining military programs requiring the support of multiple leaderships and multiple budget cycles to achieve full fruition.⁵ There is, for example, a precedent for American involvement in home defenses during the 1950s and early 1960s that, for its time, was as long on technological wizardry as SDI is today--but in the end proved to be much shorter on programmatic and doctrinal durability. In the offensive realm, the B-1 and MX have been exceptionally slow to come on line for many of the same reasons and, at best, will attain a level of deployment falling well short of that initially planned for these two weapons. Surely Soviet planners will be mindful of this history as they contemplate the relative urgency of the requirements that SDI presents to them.

⁴I have outlined the logic for this assertion at greater length in my "Pitfalls in Force Planning: Structuring America's Tactical Air Arm," *International Security*, Fall 1985, pp. 84-120. Although the technologies involved are very different, the broad principles outlined there regarding the need to bound the threat in fighter force development are equally applicable to the BMD business.

⁵This fact has scarcely gone unnoticed by SDI's domestic critics. See, for example, William H. Kincade, "Star Wars May Not Survive Time, Technology, and Money," *Los Angeles Times*, May 19, 1985.

Even if Moscow's current campaign to kill SDI politically ultimately founders, the Soviets will retain the option of waging a continued rear-guard action against Western opinion, at the same time that they find themselves increasingly obliged to move along with programmatic counters of their own. After all, they surely must know that future U.S. administrations may not share the same enthusiasm for SDI as the present one does. They also understand that the Gramm-Rudman-Hollings amendment and other budgetary constraints down the road may eventually cause SDI to go the way of such other abortive U.S. programmatic efforts as the B-70. Taking advantage of these possibilities is an activity in which the USSR commands a substantial competitive edge, given the many political and societal asymmetries between the two countries.

Yet any such hope must leave the Soviets with cold comfort, in light of the remarkable persistence that SDI has shown since the President first announced it three years ago. Unlike so many other U.S. "initiatives" (such as the multiplicity of basing schemes for MX that have come and gone over that program's troubled history), SDI is almost certainly not regarded as anything like the "flavor of the week" in Soviet perceptions. On the contrary, it has generated a large bureaucratic following, an impressive budget (particularly for what will remain for some time a pure research endeavor), and the unambiguous backing of the President, who has personally taken the lead--in almost unprecedented fashion for a defense program--in giving SDI direction and vitality. It also entails a variety of technologies and concepts that could eventually have at least as great an effect on prevailing deterrence strategies as the advent of survivable retaliatory forces and MIRVed missiles. Even if the current vector of SDI should become diverted, whether by Soviet interference or whatever technical or budgetary problems it might encounter, a more modest development of just a few of its associated technologies now under investigation could still generate severe problems for Soviet planners--and perhaps in mission areas only remotely connected to intercontinental nuclear warfare.

THE OUTCOME OF THE ARMS CONTROL PROCESS

Clearly Moscow's responses will be partly determined by the extent to which the United States allows SDI to become a bargaining counter in the Geneva arms talks. Although an unrestrained SDI could place unendurable stresses on the Soviet military-technical establishment, a U.S. BMD program moderated in return for Soviet concessions on other fronts might substantially ease those pressures and allow Soviet planners to redirect their energies toward other important mission needs.

For the moment, the avowed position of the U.S. government is that SDI research and testing permitted by the ABM Treaty will not be held out as a bargaining chip, regardless of whatever offers the Soviets might bring up at START in the coming months. Yet the Reagan administration must appreciate the enormous potential of SDI to help drive Soviet strategic programs away from directions uncongenial to U.S. security interests, as amply attested by the intensity of the Soviet Union's reactions to date.⁶ It is not inconceivable, therefore, that after stonewalling long enough to smoke the Soviets out in the START arena, the administration may become more disposed to entertain certain SDI limitations as a necessary price for achieving an arms control breakthrough that imposes reciprocal constraints on the most disturbing trends in Soviet ICBM development (such as improved accuracy, increased MIRV fractionation, and the ability to evade U.S. verification through concealment and land mobility).

In the absence of any way to anticipate these limitations, assuming they come to pass at all, there is no telling other than by informed guessing how the arms control process will affect Moscow's responses to SDI. Whatever comes of the present U.S. government attitude regarding SDI as bargaining currency in the arms control arena, however, Soviet planners will be very interested in the course and outcome of the START

⁶Almost never before has the Soviet Union shown itself willing to trade Soviet capabilities in the field for only *potential* U.S. capabilities. Usually, the situation has been the other way around, with the *Soviet Union* being the country unwilling to give up a bird in the hand for one in the bush.

dialogue as they go about framing their reactions to SDI in the decade ahead.

SOVIET INSTITUTIONAL POLITICS

Although the Soviet Union lacks many of the bureaucratic and other domestic influences that make defense politics a messy business in pluralistic societies such as ours, there will certainly be numerous constituencies with competing interests in the outcome of whatever decisions the Soviet leadership may eventually reach regarding SDI countermeasures. To be sure, the presence of a strong General Staff able to impose central direction on Soviet weapons acquisition will tend to minimize the sorts of tugging and hauling over programs and budgets that have long characterized interservice rivalries in Western countries (the United States included).⁷ Nevertheless, one might reasonably expect contention between, for example, the Strategic Rocket Forces and the Soviet air defense establishment over the question of whether it would be wiser to emulate or negate SDI. Even with regard to counteroffensive options, there will undoubtedly be competition for limited resources among various R&D entities within the Soviet defense nexus as they vie to design the program of choice for maintaining Soviet offensive force penetrativity. Here as well, the leadership will probably manage to suppress the more extreme manifestations of such infighting in order to minimize the institutional turmoil that will inevitably be generated by the need to counter SDI. Yet notwithstanding the moderating influence of the General Staff, it is still likely that those countermeasures ultimately selected will at least partly reflect the clout of the various services with the greatest interests at stake.

⁷Unlike most Western military establishments, the Soviet armed forces are organized under a system of powerful top-down supervision, in which centralization of functions in all arenas (air, sea, land, and space) is a standard operating practice. In this system, the main concern is less over which service predominates in any given mission area than over whether the mission gets satisfactorily performed.

SOVIET DOCTRINAL PREDISPOSITIONS

Soviet military doctrine promises to influence Moscow's response to SDI not only by shaping the operational preferences of the High Command, but also by coloring the way the Soviets read our own motivations for pursuing SDI. To take the latter case first, it is characteristic of their political style for the Soviets to project their own worst impulses onto their adversaries as a technique for legitimizing their external behavior. Given their natural paranoia, they will probably feel strong compulsions to interpret American program developments through their own doctrinal filter.

Whatever rationale the President or any other U.S. official might attach to SDI the Soviets will be inclined to view it just as they have viewed their *own* homeland defense efforts over the past two decades-- namely, as an adjunct of a broader damage-limiting strategy aimed at underwriting Soviet national survival in the event of nuclear war. Although much of their rhetoric in this regard against SDI has been unabashed propaganda, it probably reflects a substantial underlying belief as well. After all, a similar motivation has driven the Soviet Union's own efforts in BMD since the signing of the ABM Treaty. Why, then, a Soviet planner might ask, should the Americans act any differently? Insofar as this interpretation has merit, it suggests that Moscow will meet SDI with the full determination appropriate to countering a perceived U.S. effort to acquire a unilateral strategic advantage, whatever the actual purpose of the American program may be.

As for the connection between Soviet military doctrine and future Soviet responses to SDI, the point that matters here concerns the prospect of the Soviet Union's acceding to any agreement (whether through direct negotiation or tacitly) that seeks to replace the current nuclear standoff with a new arrangement dominated by defenses on both sides. Quite apart from the fact that the Soviet Union has never shown much enthusiasm for subjecting its security to joint "legislation" by the active involvement of the adversary, such a cooperative venture seems unlikely simply by virtue of Moscow's apparent commitment to making the best of its *existing* military doctrine. It has been suggested by some that the U.S. government's desired transition to a

defense-dominated world should be rendered that much easier by the "natural" preeminence of the home defense mission in Soviet military thought. Unfortunately, this expectation reflects a fundamental misreading of the role of strategic defense in Soviet military planning. Although Soviet military theory has long placed great weight on strategic defense, far more than has been the case with American military policy, that emphasis has typically occurred within the context of a *continued parallel stress on the indispensability of overwhelming offensive forces.*⁸

Whatever credence one may ascribe to the Soviet Union's putative doctrinal tradition of "defensive-mindedness," the offensive remains the conceptual linchpin of Soviet strategy, and it is only through well-endowed offensive forces that Soviet planners contemplate surviving any war they may have to fight in the wake of a catastrophic deterrence failure. In this outlook, active defenses are seen merely as a backstop for what remains essentially a counterforce-oriented strategy. They certainly are not seen as a *substitute* for offensive forces or as suitable guarantors of Soviet security in and of themselves.

⁸At the time the pre-SALT I exploratory probings on a possible ABM freeze were first getting under way, a Soviet military writer entered a strong plea for continued Soviet attention to offensive force modernization. He began by observing that "weapons and military-technical equipment . . . affect the methods and forms of conflict not immediately, but only after they have been accumulated on an adequately large scale." He then highlighted the continuing dialectic between offense and defense as "the axle around which the development of military affairs turns. . . . Attack and defense are two opposite types of military action. But they are opposites that are organically linked and that are dependent on one another." Finally, he stressed the primacy of the offensive as the only way to "achieve the routing of the enemy and establish victory" in modern war. Colonel S. Krupnov, "On the Development of the Methods and Forms of Armed Conflict," *Krasnaia zvezda*, January 7, 1966. A similar view was expressed more recently in Marshal Ogarkov's injunction that although Soviet "strategic doctrine has a strictly defensive orientation, it also envisages, in the event of an attack by an aggressor . . . resolute actions by the Soviet armed forces, which have full mastery of the art of waging not only defensive, but also modern offensive operations on land, in the air, and at sea." Marshal N. Ogarkov, "Guarding Peaceful Labor," *Kommunist*, No. 2, 1981, p. 86.

It is not inconceivable that out of a common-sense desire to avoid worse alternatives the Soviets might eventually recognize the wisdom of joining in a cooperative effort with the United States to alter the existing foundations of nuclear deterrence. They found it convenient enough to sign the ABM Treaty when doing so served their perceived security interests, notwithstanding the powerful (and persistent) injunctions of their military doctrine on the matter of active defense, which tended to point in the opposite direction. Yet in all likelihood, any serious Soviet willingness to participate in a joint transition to a defense-dominated strategic environment will most likely require their acceptance of a different security paradigm than the one that currently seems to undergird their force modernization. We could wait forever for Moscow to embrace the logic of defensive emphasis within the context of its existing doctrinal proclivities.

THE MOUNTING DEFENSE BURDEN ON THE SOVIET ECONOMY

Perhaps the single most important factor that will determine Moscow's response to SDI, after all allowances are made for technical wherewithal and the inevitable disputes that will arise over allocation priorities, involves the total availability of fiscal resources that the Kremlin will be able to mobilize against the problem. Among the many cliches that abound concerning the Soviet Union today, one of the most common is that the Party leadership--after two decades of sustained force modernization--is finally having to confront the looming presence of real limits to further military growth. Economic reform is not only one of the most urgent priorities of the Gorbachev regime; it is imperative if the Soviet Union intends to remain a competitive superpower in the 21st century. Although the military's share of total expenditure has risen steadily each year since the beginnings of the buildup in 1965, there has been a growing decline in the *rate* of military investment--more or less in lockstep with the general decline in the rate of annual Soviet economic growth (now at around 2 percent, down from 6 percent in the 1950s and 4 percent just a decade or so ago).

SDI would have come as bad news for the Soviet leaders in any event. But there are even further problems posed by competing demands for Soviet resources *within* the military sector. Before SDI, the Defense Ministry was already grappling with the thorny question of how to fund many increasingly pressing mission needs that promised to stress the Soviet defense budget mightily. For one thing, there was the growing hard-target challenge to Soviet ICBMs posed by MX and D5. Beyond that, the already permeable Soviet air defense net was becoming even more penetrable with the specter of cruise missiles, the B-1B, and the Advanced Technology Bomber. Finally, Moscow's traditional long suit in Europe--its overwhelming dominance in conventional forces--was increasingly coming to feel heat from a variety of nested U.S. enhanced-technology counters in the reconnaissance-strike area, along with associated command, control, and data fusion systems able to convert this sophisticated technology into an effective denial of Moscow's long-standing conventional escalation dominance.⁹ It was on top of these and other *preexisting* tradeoff dilemmas that the Kremlin leadership was presented with SDI and its implied threat to open up a whole new dimension of superpower arms competition.

Some in the United States have cited this evidence of Soviet economic duress to argue that now may be a good time to try to "spend them into the ground" by means of SDI. Unfortunately, history has not been kind to the United States with regard to such efforts. Unlike most of their Western counterparts, the Soviet leaders do not consider defense spending to be an unavoidable form of social overhead. On the contrary, they enjoy the comparative luxury of not having to regard such spending as a "burden" until and unless they define it as such. The ability of the regime to discipline its people to accept hardship requires no documentation. Although he was plainly exaggerating for effect, the chief editor of *Pravda*, Viktor Afanasyev, was not far off

⁹Evidently it was concern over this last trend that led Marshal Ogarkov to speak out loudly enough on the subject to cause him, at least in part, to lose his job as Chief of the General Staff. See William J. Eaton, "Rift Hinted in Removal of Soviet Marshal," *Los Angeles Times*, September 8, 1984.

the mark when he asserted to an Austrian reporter in early 1985 that "if necessary we will eat only once a day" in order to help field an effective counter to SDI.¹⁰

The Soviets have reacted with great indignation to Western intimations that they lack the technical and economic wherewithal to endure a determined SDI competition. Much of Moscow's current uncooperativeness in the arms control forum can be directly traced to this visceral discomfiture over being portrayed as anything less than an "equal" to the United States. That Soviet resource constraints have been exacerbated by SDI can be said with total confidence. Just how acutely the Soviet leaders feel those constraints and may be disposed to entertain cuts in their own ICBM posture in order to ameliorate them, however, are questions that will have to await better evidence about the kinds of SDI deployments they might have to counter, barring an agreement that would render such counters unnecessary.¹¹

In a reflection on the hard choices that this resource dilemma has presented before the Politburo, Robert Conquest has ventured the appealing proposition that the Soviets may find themselves in a truly impossible situation should SDI lead to promising technologies and result in a large-scale deployment program. In such an event, he has suggested, they might feel driven to accept a temporary pause in the strategic competition while, in a characteristically Leninist quest for a "breathing spell," they redirected their energies toward some of the increasingly pressing problems of their own economy, domestic polity, and empire. Yet however attractive this prospect may appear to be from a self-interested American point of view, it is one the Soviet leaders will exert every effort to avoid.¹² Accordingly, the United States should probably not place great hopes on it.

¹⁰Interview in *Die Presse* (Vienna), January 29, 1985.

¹¹More detailed cost and "burden" assessment will have to await the development of a baseline set of probable Soviet SDI countermeasures. Even then, its conclusions will necessarily be limited by the many uncertainties and problems of evidence that constrain such research.

¹²Conquest recognizes this in pointing out that any such admission of defeat by the Soviets would require a U.S. arms deployment policy "of a consistency and clarity which it is perhaps unreal to expect." Indeed, he notes, "the whole of Soviet foreign policy vis-à-vis the West has, since 1965, been based on working to ensure that the 'imperialists'

Moscow's agitation seems sufficiently rooted in real concerns about the resource issue that the United States can hardly go wrong by continuing to play its SDI card closely, pending a more confident assessment of just how much the Soviets might be willing to pay to head it off. In combination with other trends in U.S. nuclear and general-purpose force modernization, SDI has placed the United States in perhaps a stronger bargaining position with regard to the Soviet Union than at any time since the Kennedy-McNamara buildup of the early 1960s. In light of the compound difficulties that this development has put before the Soviet leadership, an important challenge now facing the U.S. government is to develop a measured strategy that brings SDI into parallel with our diplomacy toward the Soviet Union so that we might elicit the maximum political leverage from it, even as we continue to press for a validation of the multiple concepts it is exploring as a necessary hedge against Moscow's securing a technological monopoly or actual breakout advantage in the BMD area.¹³

do not in fact deploy their economic and technological superiority." Robert Conquest, "The Soviet Succession Problem and Foreign and Arms Policies," paper prepared for a conference on "Domestic Influences on Soviet Foreign Policy," University of California, Los Angeles, October 11, 1985, p. 17.

¹³A powerful case for this argument, which holds that SDI is "primarily a strategic and political instrument" whose greatest value lies in its ability "to gain a measure of control over the behavior and planning of the USSR," is offered in Roger P. Main, "Moscow and the Strategic Defense Initiative," *Soviet Analyst*, March 20, 1985. See also James R. Schlesinger, "Rhetoric and Realities in the Star Wars Debate," *International Security*, Summer 1985, pp. 3-12.

VIII. LOOKING TO THE FUTURE

Although the returns are not yet in, some interesting interim conclusions are suggested by Moscow's comportment regarding SDI thus far. Clearly the Kremlin has accepted SDI as a challenge it cannot allow to go unanswered. It remains an interesting question to what extent Soviet R&D trends (in both offensive and defensive technologies) have shown anything approaching the beginnings of an actual programmatic response to SDI.¹ But there is no doubt that the Soviets are determined to maintain the moral high ground in blaming the United States for provoking another needless round in the "arms race." They are also striving to put the United States on notice that they will not accommodate to American "rules" in responding to SDI. Granted, much of what the Soviets have said about their possible responses merely repeats points frequently raised in the Western debate about SDI, including the notion that they will not be suckered into countering SDI with a reply in kind.² To this extent, Moscow's public professions may bear only a distant connection to the private deliberations of the Soviet leadership.

¹SDI has been on the books for only three years and still remains entirely a concept development effort, so one might not expect much evidence to have presented itself yet that would suggest the start of a Soviet programmatic response (even assuming we could correctly identify such evidence if we saw it). However, the USSR is now starting out on its latest Five-Year Plan, which includes a substantial defense component. The Kremlin is accordingly at the point at which new program commitments have only recently become solidified; therefore now is a propitious time for the intelligence community to begin taking hard looks for such indicators of an emerging response pattern.

²For example, MIT Professor Stephen Meyer was prominently quoted as believing that "it's not going to be a race between our 'Star Wars' and their 'Star Wars,' but a race against our system and their efforts to overwhelm or neutralize it." Charles Mohr, "What Moscow Might Do in Replying to Star Wars," *New York Times*, March 6, 1985. In a later essay, Meyer supplanted that point of view with a new argument maintaining that any Soviet SDI counters would most likely be both offsetting and emulative. See his "Soviet Strategic Programs and the U.S. SDI," *Survival*, November-December 1985, pp. 274-292.

Through the vehicle of the Sagdeyev "report" mentioned earlier, the Soviets have been uncharacteristically open in discussing a menu of possible response options whose implementation still lies far in the future. Normally, the Soviets make it a practice not even to hint at military development programs they actually have under way. This suggests that if and when SDI comes to fruition, the response (or set of responses) actually chosen by the Soviets may embody few of the characteristics mentioned in Moscow's public accounting. It also suggests that the proximate Soviet concern over SDI is far more political than technical. After all, the Soviet leaders are well aware that SDI is on less than firm footing in the American domestic arena despite the determined rhetoric of President Reagan. At best, it promises to be technically problematic, extraordinarily expensive, disruptive of the ABM Treaty, and uncertain as to its ultimate prospects for deployment.

The American *threat* to deploy SDI trades heavily on the promise of a variety of technologies in which the United States is widely acknowledged to maintain a commanding lead. In this regard, it is remarkable how quickly the Soviets--who, at least in one interpretation, signed the ABM Treaty in the first place with the express intent to cheat at the margins, while using it as a means to buy time for their own BMD effort--have now come to be such vigorous proponents of strict construction of that Treaty under the pressure of SDI.³ As a case in point, the Chief of the General Staff, Marshal Akhromeyev, signed an article in 1985 in defense of the ABM Treaty whose detail and intricacy of argument suggested for all the world that it was an advocacy brief put together by a clever Kremlin lawyer.⁴ Shortly thereafter, Gorbachev

³As for the Kremlin's original motivations, recall that the Soviet Defense Minister at the time, Marshal Grechko, was quick to justify Moscow's signing of the ABM Treaty to the Supreme Soviet with the assurance that the accord imposed "no limitations on the performance of research and experimental work aimed at resolving the problem of defending the country against nuclear-missile attack." Quoted in Hedrick Smith, "Nitze Details U.S. Charges Soviet Has Own Star Wars," *New York Times*, July 12, 1985.

⁴"The ABM Treaty Is an Obstacle in the Path of the Strategic Arms Race," *Pravda*, June 4, 1985.

himself followed suit in urging that the United States show its commitment to stability by formally "reaffirming" the ABM Treaty--a negotiating point that continued to dominate Soviet public diplomacy right up to the Geneva summit and beyond.⁵

Insofar as the Soviets recognize this American advantage (and indeed harbor disproportionate respect for American technological prowess), their real short-run concern is that SDI may deprive the considerable Soviet nuclear offensive posture of much of its *political* utility. Indeed, the more knowledgeable and astute Soviet Americanologists may be privately advising their Kremlin bosses to continue a high-visibility public stance of indignation against SDI, but otherwise to keep their deeper fears under control in light of the continuing possibility that SDI could die a natural death at the hands of the American budgetary process--with perhaps some generous assistance from Soviet propaganda and covert action.

For the longer run, obviously, Moscow's responses will depend heavily on the bureaucratic and technical fortunes of SDI. Perhaps the worst outcome of all would be one in which the domestic consensus behind SDI collapsed *after* enough momentum had gathered to drive the Soviets into vigorous offsetting measures that could not be easily turned off--and that indeed might assume *heightened* attractiveness to Soviet planners in the absence of an opposing U.S. BMD capability. In that case, we would have a Soviet response to a U.S. nonprogram, much as we saw with the SA-5 and MiG-25, both of which were conceived in the late 1950s as answers to the abortive U.S. B-70. The difference would be that although the SA-5 and MiG-25 are not of great concern today to U.S. planners responsible for assuring B-52 mission effectiveness, a substantially expanded Soviet offensive posture (including greater numbers of warheads, bombers, and cruise missiles), along with a more capable Soviet BMD system, could give Moscow precisely what we originally sought to deny it through SDI--a credible first-strike capability that could be invoked with great coercive effect in a crisis.⁶

⁵William J. Eaton, "Soviets Urge U.S. to Affirm ABM Treaty," *Los Angeles Times*, July 6, 1985.

⁶A more discomfiting illustration than that provided by the B-70 cancellation can be seen in the adverse consequences ensuing from our

Barring that, and assuming that SDI does lead to a deployed first-generation system, the Soviets will be driven to respond within the limits of their technical and budgetary resources. Any effort to anticipate this response must start with a cataloguing of options that are technically feasible, intuitively reasonable, and consistent with past Soviet practice. But that is fairly straightforward compared with the far more daunting task of predicting what they *will* do. The latter calls for a forecast in the presence of compound uncertainty not only regarding *Soviet* concerns, motivations, and intentions, but also regarding what the *United States* eventually does in the SDI realm.

failure to proceed with an orderly deployment of MX. Had the United States remained on course with the original plan to field 200 of these weapons in a survivable MPS basing mode, we might today be confronting the Soviets with a hard-target threat much like the one with which they present us by means of the SS-18 and SS-19. Moreover, we would enjoy a renewed lease on the survivability of our ICBM leg of the triad to match that provided the USSR by the land-mobility of the SS-24 and SS-25--both of which were apparently inspired by MX.

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