STRATEGIC AND POLITICAL ASPECTS OF THE STRATEGIC DEFENSE INITIATIVE: A SOVIET VIEWPOINT*

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I. GENERAL

A space-based antimissile system, even if ideal from the scientific and technological points of view, would never accomplish, as is contended by some members of the U.S. political leadership, a "turnaround" in strategic thinking to substitute the deterrence based on the concept of "mutual assured destruction," by the deterrence based on the concept of "mutual assured survival," since it would not guarantee total protection from ballistic missiles and air-based strike weapons. Therefore, all the arguments in favor of the allegedly stabilizing role of comprehensive ballistic missile defense (BMD) make no sense. It is also worth emphasizing that concurrently with the deployment of the Strategic Defense Initiative (SDI), the United States is actively pursuing a program of deployment of strategic offensive arms, nuclear medium range forces, and theater nuclear arms. Consequently, the development and deployment of a space-based BMD would only complicate the issue of mutual deterrence and would lead to a more precarious strategic balance.

Such a view of the proposed U.S. antimissile system as a way to enhance the country's first strike capabilities is also determined by the fact that the United States is not willing to commit itself not to use nuclear arms first, and continues to build up its first strike capability. One important element of this policy was the deployment in Europe of U.S. medium range nuclear armed missiles, notably Pershing II rockets.

It would be pertinent to recall in this connection that the Soviet Union, cognizant of the importance of enhancing the stability of the balance considering the tense military and political situation, announced unilaterally in June of 1982 that it would not use nuclear arms first.

Drawing on past experience, one can assume with a high degree of probability that the development of BMD would cause the deployment of a host of coun-

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termeasures to thwart the threat posed by it. One can agree with those experts who believe that as a BMD would be developed and deployed, so would the countermeasures. Also the BMD would be a strong incentive for the buildup of strategic nuclear arsenals—both delivery means and warheads—in particular of air-, sea- and ground-based long-range cruise missiles, whose deployment is, *inter alia*, hardly amenable to control by national technical means.

One of the possible countermeasures would be to use depressed trajectories for submarine launched ballistic missiles (SLBMs). This response would, in turn, be interpreted by the American side as a threat to the bomber "leg" of the strategic "triad," since this would imply shorter times for SLBMs to strike at strategic bomber bases. A comprehensive BMD would thus disturb the synergy of the triad structure of the strategic nuclear forces, which in the opinion of U.S. military planners is an important factor in the stability of these forces.

Space-based antimissile weapons can, with good reason, be viewed as having antisatellite capabilities.[1] And this is bound to undermine the balance within the macrosystem of strategic relations, since the balance is in many respects determined by the degree of faith placed by the sides in the reliability of their respective surveillance and early warning satellites.

A decision to intercept a satellite in space (using non-nuclear means, of course) is clearly easier to make than a decision to use military force directly against another country. Such an action may, however, trigger a conflict which may escalate confrontation to direct hostilities, from regional to global and from conventional to nuclear levels.

This stems specifically from the fact that antisatellite operations cannot, by virtue of the laws of astrodynamics, be localized (by the distribution of the targets and the weapons) and will immediately become global. An antisatellite operation might suddenly develop into attacks at the most vulnerable components, such as satellite communications and control facilities deployed on the ground and at sea all over the world, and these attacks could hardly be confined to conventional arms. The chain reaction of destroying the satellite systems, along with other measures of disrupting the command, control and communications systems would quickly render the situation uncontrollable, thus disrupting the links between the national leaders and the forces in the field and the nation at large, and as the uncertainties of the situation would be intensified, the probability of a fatal mistake and unwarranted response would increase. On top of that antisatellite actions would affect the space-based communications with strategic forces—the "best" way of initiating a nuclear exchange.

A systems analysis of the stability of the strategic balance with the above inputs shows that, contrary to what the SDI advocates say, should both sides have comprehensive BMDs, instability would grow, especially considering the wide variety of countermeasures and the vulnerability of BMD components.

One should emphasize that the so-called defensive space-based weapons that are planned for development in the United States could in actual fact be employed not only to strike against the Soviet Union's satellites and intercontinental ballistic missiles (ICBMs) in flight, but also as a first strike weapon against ground and air targets of an opponent. These weapons would be of special danger for

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1. *Pravda*, Sept. 17, 1985, at 1.

countries that are unable, for economic, techological or territorial reasons, to install adequate countermeasures against the threat from space, as are able the Soviet Union and its allies in the Warsaw Treaty Organization, which might enhance antagonism in the world.

The SDI program is especially dangerous because it appeals to the psychologically natural human desire to find at last some sort of protection against the awesome destructive power of modern nuclear weapons. The advocates of the Strategic Defense Initiative expertly cash in on this feeling.

The same goal is pursued by some Western strategic planners who argue that, in compliance with the dialectics of the evolution of warfare concepts, the predominantly offensive warfare of the past centuries must be replaced by a predominantly defensive warfare of the future, and nuclear weapons, which have underlined the military doctrines of the last few decades, must in turn be replaced by some fundamentally new weapons, in this case, by the directed-energy weapons.

It is worth noting here that any references to the dialectics of warfare concepts (which, by the way, has been given the best treatment by Friedrich Engels in *Anti-Düring* and by other classics of Marxism) is irrelevant in the case of a space-based ballistic missile defense. Actually, the struggle between offense and defense throughout history occurred with varying success. In the long run, the general tendency seems to have been for the civilian population to suffer ever increasingly from the horrors and destruction of wars. Recall World War I, a classic example of the predominance of defense, which predetermined its trench warfare tactics but involved a then-unheard-of scale of destruction over enormous areas in the war zone (Marne, Verdun-sur-Meuse, Galicia, etc.). Nuclear weapons stand out in this respect as weapons specially designed and first used by the United States for massive destruction of civilian population and material assets. The prospect of total destruction of peaceful civilians and devastation of enormous areas has always overshadowed any attempts of Western strategists to invent some ways of using these weapons to solve military missions, to inflict "limited" and "selective" strikes.

The SDI proponents in the United States lean heavily on the thesis that, as compared with the late 1960's and early 1970's when the U.S.-Soviet Anti-Ballistic Missile Treaty (of unlimited duration) was negotiated, there have now appeared new technologies that change the situation between offense and defense in the nuclear age. This thesis is used as a basis for far-reaching conclusions of technological, political, and military character.

Among the latest breakthroughs in science and technology that allegedly offer unprecedented defensive capabilities are mentioned advances in the hardware and software branches of computer technology (faster speeds, microminiaturization, artificial intelligence elements, etc.), sensor technology, laser technology, neutral particle accelerators, electrodynamical mass accelerators and a new generation of hefty boosters. In these and other fields of technology, substantial strides have really been made as compared with the end of the 1960's and beginning of the 1970's. It is to be stressed, however, that considering the rich variety of elements in a hypothetical BMD, advances in individual areas provide no solution to the problem as a whole.

Many U.S. sources, including the government, admit that as of now and in the foreseeable future, these achievements are clearly insufficient to create a full scale space-based BMD. Furthermore, the fashioning of a widely distributed

macrosystem, with a tangle of links, out of individual components (detection, recognition, aiming, battle management, weapons, etc.) is a fundamentally new, exceedingly complex task.

Publicizing the defense-dominated world, a world that is only possible due to the high level of sophistication of the current technologies, the sources pass over in silence the fact that the same technological capabilities might, perhaps even with more success, be used to create effective countermeasures. On the other hand, offensive capabilities have in the last ten to fifteen years grown as well, mostly due to U.S. initiatives. Worthy of special mention are multiple independently targeted re-entry vehicles (MIRVs), long range cruise missiles and new highly accurate guidance systems for delivery vehicles. The development of a new generation of SLBMs is nearing conclusion in the United States. These sea-launched missiles will be compatible with land-based ICBMs in their destructive power.

Notice that expatiating about dazzling prospects of antimissile technologies, the SDI officials "forget" to mention the prospects of development within the same time scale of offensive technologies, which could clearly make spectacular progress. These could include, as noted above, making MIRVs on ICBMs and other vehicles maneuverable, converting SLBMs to depressed trajectories, using more decoys and fast-burn boosters, and so on and so forth.

Comparison of the evolutions of defensive and offensive technologies puts into question any prospects of a defensive system gaining some advantage. Moreover, since the offensive and defensive strands are intertwined, should the SDI plans be pursued, it would become necessary, and hence possible, to develop a new class of weapons specially designed to degrade and nullify a BMD, first of all its space-based components. Many technical means suitable for solving such problems are in such high development stages in the United States itself that, according to some U.S. experts, they could be realized much faster and more cheaply than a comprehensive space-based BMD. In addition, many Western observers maintain that initiating major SDI programs in a tense international climate would spur the development of those mass destruction arms which are beyond the capabilities of a BMD. In view of this, it is apparently not by chance that, parallel with the discussion of the SDI plans, U.S. military planners raised the question of the need of working out alternative measures against a potential Soviet BMD (it has been repeatedly stressed by the Soviet government officials, including the Minister of Defense, Marshal S. P. Sokolov, that the Soviet Union does not work in this area).[2]

Of course, there are some military research and development programs in the Soviet Union, but they do not aim at developing space-based weapons. Their objectives are improving space-based early warning, reconnaissance, communications and navigation satellites.

There are no preparations in the Soviet Union to deploy a nationwide BMD based on air defense facilities, and no programs that could violate the ABM Treaty of 1972 in general are under way.

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2. *Answers of the U.S.S.R. Minister of Defense, Marshal S.P. Sokolov, to Questions of a TASS Correspondent, Krasnaya Zvezda*, May 5, 1985, at 1.

Much coverage in Western mass media was given to the construction of a radar site near Krasnoyarsk, in Siberia. It was contended that this radar is an early warning radar against ICBMs and is being constructed in violation of the Treaty.

Official Soviet spokesmen explained that the radar is designed to carry out observations of space objects. The Agreed Statements regarding the 1972 Treaty stipulate that the limitations on the potential of phased-array radars do not include the radars used "for the purpose of tracking objects in outer space or for use as national technical means of verification." Therefore, the Krasnoyarsk facility is not in violation of the Treaty.

Even if in the forseeable future U.S.-Soviet relations improve so that the American side will be prepared to negotiate mutually acceptable and equitable constraints on strategic arsenals, then even the limited presence of tested and deployed components of a space-based BMD would markedly complicate negotiations and drastically curtail the chances of achieving such agreements. That this is really so is confirmed by the practice of negotiating SALT I and SALT II. Without the ABM Treaty, they would simply have been unthinkable.[3]

Introducing into the strategic equation a further radically new and all-important component, such as a comprehensive BMD, would confuse the entire system of assessing the strategic balance and would worsen the international climate.

Things might be entangled even more, if one takes into consideration the inevitable countermeasures of the other side, including those directed against the space-based component of the proposed BMD, respective counter-countermeasures, and on indefinitely—a vicious circle so familiar to the designers of weapons.

The experience of the last decades has repeatedly proved that the Soviet Union will not allow any shifts in the balance. Whatever the U.S. moves, the balance will be restored, albeit at a higher level. The future world will thus be a world of more nuclear warheads aimed by the sides at each other, of shorter times allowed for making fatal decisions, of higher risks of nuclear war.

The development of military technologies, the "action-counteraction" cycles in the arms race, can make the course of events irreversible. Looking back at the arms race of the past decades, one cannot help regretting many "initiatives." Only some of them have been reversed, at great cost.

Can the arms race in space be prevented? There is a deep conviction on the part of the Soviet Union that there are possibilities, yet they rely on a solid foundation of international law, which contains many pertinent agreements.

One other political implication of the deployment by the United States of a space-based BMD system is the fact that it would be in the way of U.S.-Soviet cooperation in the uses of space for peaceful purposes. Scientifically and economically, this cooperation would be quite valuable, since the space programs of the United States and Soviet Union are in many respects complementary. The political importance of such a cooperation would be immense, especially for U.S.-Soviet relations and for building confidence between the peoples of the two great countries.

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3. Akhromeyev, *The ABM Treaty—A Barrier to the Arms Race in Strategic Weapons, Pravda*, June 4, 1985, at 5.

Should the world community find overhead in near-earth orbits offensive and antisatellite weapons, the "space for peace" programs, from which humanity at large could benefit enormously, would be in jeopardy.

II. THE STRATEGIC BALANCE

The modern military and political landscape is characterized by a strategic parity reached between the United States and the Soviet Union. The strategic parity is an important condition for maintaining strategic stability, especially if it provides mutual ability of both sides to launch assured retaliatory strikes inflicting unacceptable damage. Such a state of affairs has proved to possess a measure of stability, notwithstanding the significant difference in the geostrategic position of the sides, the asymmetry in the structure of their nuclear forces and the differences in the characteristics of their weapon systems.

In an attempt to break away from the nuclear blind alley and gain strategic superiority, the United States spurted ahead in the 1960's in the arms race, and in the 1970's tried repeatedly to tip the balance in its favor. Nevertheless, late in the 1960's the Soviet Union answered with an increase in its strategic arsenal and, despite the American efforts, it managed to restore parity. By the mid-1980's, owing to countersteps taken by the Soviet Union, the strategic equilibrium became more stable and balanced.[4] It is now more difficult than ever before to disrupt the parity by increasing and improving nuclear forces, or to establish supremacy of importance in military, political and diplomatic respects.

This margin of strength, inherent in the attained parity, is determined by a multitude of factors, one of them being the very nature of nuclear weapons, *i.e.*, their enormous destructive force and lethality, especially against cities, industrial objects, ports and major military bases. A relatively small number of nuclear warheads (hundreds out of the fifty thousand now in existence) are capable of killing and maiming millions of people, destroying the economies of major nations.

The stability of the balance is also ensured by the variety of complementary ingredients in the strategic forces of each side, which includes land-based ICBMs, sea-based SLBMs and strategic bomber forces. The presence of the synergy of the three legs of the strategic triads of the United States and the Soviet Union is one of the most important deterrents to first strikes capable of eliminating or markedly weakening retaliatory second strikes. Both sides are capable of launching a retaliatory strike inflicting unacceptable damage, this capability being due to adequate duplicated systems of early warning about a nuclear missile attack, and of command, control and communications; both sides' strategic forces are maintained at a high level of combat readiness.

These and other circumstances, now that the world has accumulated enormous arsenals of nuclear weapons, make the entire system of the nuclear strategic balance relatively stable despite some technical differences in the nuclear weapons of both sides. Of course, one should not overestimate the degree of stability of the balance, which is essentially the "balance of terror," both military and

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4. Arbatov, *Strategic Parity and the U.S. Policy*, [1984] POLITIZDAT (Moscow) 1 (published in Russian).

political. The stability, even with the countermeasures taken by the Soviet Union, may be undermined by the year 2000 because of the nuclear arms race enforced by the American side whose aim is to gain unilateral first strike capabilities.[5]

The balance of terror is a precarious balance. A really secure and peaceful world is only possible when both sides (and any other nations) have no nuclear arms. The world would be much safer if it were free of nuclear weapons and respective delivery vehicles, if all conflicts were tackled by negotiations, if economic, scientific and cultural international cooperation were improved and expanded.

Instead, some powerful groups in the United States, notably in the military-industrial complex, would like to offer the world at large a vicious way of ensuring safety by creating a comprehensive space-based BMD system.

The problem of protection from nuclear weapons made its appearance together with nuclear weapons, and the major difficulties here were perceived as early as in the 1940's.

In 1945 Robert Oppenheimer noted the exceptional role of nuclear weapons, the inability of the then-technology to install effective countermeasures and the need for a search for political solutions to the problem of international security.

During the past three decades, arguments more or less similar to those of Oppenheimer had in various situations been echoed by many scientists, statesmen and politicians. What then is behind the predominance of offense over defense in the nuclear age?

This stems once again from the momentous destructive force of nuclear weapons. With the advent of these weapons, the age-old confrontation of offense ("sword") and defense ("shield") reached a level beyond which offensive weapon capabilities increased by jumps, in an unprecedented manner. For the strategic forces of one side to be able to inflict unacceptable destruction on the other side in a retaliatory strike, their effectiveness, measured as the ratio of the number of warheads that reach their destinations to their initial number, can be as low as one percent or even less.

Consequently, in our day a shield capable of fending off ninety-nine percent of the accumulated nuclear arsenals makes no sense. The "leaked" one percent would be sufficient to destroy our civilization. The defensive systems must be very nearly one hundred percent effective. This unavoidable discrepancy in the required effectiveness of offensive and defensive strategic systems is independent of the level of technological progress, since both types of systems develop in the same technological medium and the advances of scientific and technological progress will be used equally in ballistic missile defenses and in offensive strategic arsenals.

The statement that in our times offensive systems inherently predominate may seem to be unproved, but it is inferred from a detailed analysis of all the hypothetical antimissile defenses suggested. There are no grounds to doubt that the advantage of offensive nuclear strategic forces will never be overcome by the new BMDs envisioned within the framework of the Strategic Defense Initiative.

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5. *See generally* SOVIET SCIENTISTS' COMMITTEE FOR THE DEFENSE OF PEACE AGAINST NUCLEAR THREAT, THE PROBLEM OF NUCLEAR ARMS FREEZE (1984) (published in Russian).

Taking into account the host of problems presented by the SDI program, we can note the following:

> 1. The new version of an ABM defense would rely on space-based elements which include both combat components and support components (detection, identification and targeting, battle management, and so on). As noted above, these components would be more vulnerable to countermeasures than ICBMs, because they would be in known orbits, there would be fewer of them than the ICBMs, MIRVs and decoys.
> 2. Even if today's ICBMs and SLBMs appear to be vulnerable to the new hypothetical weapons of the proposed BMD, then even now the main directions for modernizing offensive systems are quite apparent. Moreover, such a modernization would not require any revolutionary methods.
> 3. The development and deployment of a space-based ballistic missile defense is bound, sooner or later, to bring about a dramatic improvement and massive increase of offensive weapons on both sides.

Even some of the SDI advocates are forced to admit the momentous, unparalleled technical problems that would be encountered by the developers of a BMD. This is also obvious from the changed tenor of their statements. Whereas in President Ronald Reagan's speech of March 23, 1983, which marked the beginning of the SDI, and in some other subsequent reports, the deployment of comprehensive BMD was viewed as an alternative to the world of mutual deterrence, in the latest statements of SDI advocates one more often sees recognitions that in the foreseeable future nuclear weapons will coexist with antimissile weapons, and the strategic balance will still rely on the "mutual assured destruction" concept. At the same time, it is recognized to some degree that the most important conditions of the development of a comprehensive BMD system are its survivability and cost-effectiveness. These ideas in particular are reflected in statements made by Paul Nitze, one of the key authorities on military and political issues among high-level advisers in the U.S. government. Says he, "The criteria by which we will judge the feasibility of new technologies will be demanding. They must produce defensive systems that are reasonably survivable. . . . New defensive systems must also be cost-effective at the margin, that is, it must be cheaper to add additional defensive capability than it is for the other side to add the offensive capability necessary to overcome the defense."[6]

And whereas the earlier statements of the SDI proponents held that the deployment of antimissile weapons would automatically result in curtailing offensive nuclear weapons, the later publications are not so optimistic. They note, specifically, that a BMD could only be effective if significant constraints were imposed on the number and characteristics of offensive systems and potential countermeasures. What is more, some of the Western experts have now come up with some specific suggestions as to such constraints, for example:

> —Limit the deployment in low orbits of means threatening the space-based components of ballistic missile defenses;
> —Ban the development of new ballistic missiles with a shorter boost phase.

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6. *Strategic Defense Initiative Offers Hope of Greater Security*, U.S. Embassy, Moscow, U.S.S.R., Official Text No. 21, at 12 (1985).

Judging by some Western reports these considerations had played a major role in United States putting forward a ban on mobile ICBMs at the Geneva talks on nuclear and space weapons. According to some estimates the deployment of such systems, which feature a higher survivability of the ground-based component of the strategic forces in case of a nuclear strike, can be regarded as one of the many countermeasures to the space-based BMD system.

It is paradoxical enough, but also remarkable, that hard-line proponents of unilateral decisions in military and technological spheres, who reject any mutually acceptable political arrangements aimed at strengthening security and arms limitations, are forced by the inexorable logic of the current strategic balance to appeal to political and legal arguments to protect their concepts.

The above considerations engender serious doubts concerning the feasibility not only of an "absolute" BMD eliminating the threat posed by strategic nuclear missiles, but also of the various limited versions of a BMD (area and point defenses), which, according to some SDI advocates, make the nuclear deterrence policy more reliable.

The critique of the SDI concept from the viewpoint of its implications for the strategic equilibrium includes, apart from those considered above, a number of other substantial arguments put forward both by Soviet and Western scientists and military planners.[7] It should be emphasized that the many forms of a space-based BMD that do not claim to be "absolute" can be thought of by both sides as a defense against a weakened retaliatory nuclear strike.

Each side, which in its assessment of possible military conflicts proceeds from the "worst case" analysis, will view the opponent's BMD as a threat to its retaliatory capabilities. And to thwart this threat this side will develop its countermeasures and develop its offensive forces. It will be recalled that both MIRVs and decoys made their appearance precisely as countermeasures to the other side's potential ABM systems.

The higher antiretaliatory capabilities of a BMD give its possessor a strong incentive to launch a first strike.

These arguments, which became apparent back in the 1960's, were some of the direct reasons for signing the ABM Treaty of 1972, which was then considered to be a requisite instrument in the set of treaties to ban nuclear arms.

These considerations are sufficiently serious so that one could regard the SDI program as a manifestation of the desire to establish military superiority, to acquire first strike capabilities with impunity, and to do away with any bans on offensive strategic forces. These apprehensions appear to be even more justified in the context of the steadily worsening political international climate of the last decades and of the well established, inflexible (and hence dated) views of the many SDI advocates.

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7. SPACE RESEARCH INST. OF THE ACADEMY OF SCI. OF THE U.S.S.R., A SPACE-BASED ANTIMISSILE SYSTEM WITH DIRECTED ENERGY WEAPONS: STRATEGIC AND POLITICAL IMPLICATIONS 19 (1984) (published in Russian); SOVIET SCIENTISTS' COMMITTEE FOR THE DEFENSE OF PEACE AGAINST NUCLEAR THREAT, OFFENSIVE SPACE WEAPONS AND INTERNATIONAL SECURITY 66 (1985) (published in Russian); Shabanov, *What Stands Behind the "Technological Thrust" in Space?, Izvestiya*, Jul. 24, 1985, at 5; *see also* R. SAGDEYEV & O. PRILUTSKI, STRATEGIC INITIATIVE AND STRATEGIC STABILITY (1985) (published in Russian).

But even if one forgets about the political realities of today's world, believes unreservedly in the peaceful rhetoric of the SDI advocates and sets out to deploy a parallel BMD, even then a number of serious consequences lowering the stability of the strategic situation would follow.

As noted above, the immense destructive power of nuclear arms levels off, to a certain degree, the differences in the characteristics of the elements of both sides' offensive strategic forces. This allows a measure of destabilization in the political and military climate while peace is still preserved, an example of which was the mid-1980's chill in U.S.-Soviet relations.

The strategic equilibrium will be upset by the addition of space-based weapons. The efficiency of antimissile systems is, to a significant degree, dependent both on their technical performance (the accuracy of sensors, detection and targeting systems, the reliability of computer complexes of battle management systems, the brightness of space or ground-based lasers, etc.), and on the geographical arrangement of the offensive strategic forces of both sides. In addition, it will be difficult to verify many characteristics of the hypothetical defensive weapons not only by national technical means, but also by on-site inspection.

Hypothetical treaties, which some SDI proponents think will ensure that space-based ballistic missile weapons will be deployed step by step and that during this deployment the strategic balance will be maintained, would have to include a much wider range of issues than treaties limiting and curtailing offensive strategic forces. A historical analysis of U.S.-Soviet arms control talks tells us that a solution of these questions is highly unlikely, both politically and technologically.

The promises to share BMD technologies given by Washington, which are aimed at providing gradual progress in the simultaneous deployment of BMD systems by both sides and at maintaining needed stablility, cannot of course be taken seriously because of these technologies being exceedingly sensitive both for antimissile systems and for other key sectors of military technology, including first-strike and countermeasure antimissile capabilities.

These considerations again show that one side is sure to lag behind in the process of antimissile system deployment, which poses a serious threat to the stability of the strategic balance.

Should one side deploy, if only partially, a defense system against weakened retaliatory capability of the other side, the other side can regard this as violation of conditions of mutual nuclear deterrence. And the other side can express its concern in a number of ways, from active and passive countermeasures to placing its reliance on the automatic "launch on warning" strategy.

A BMD will of course be more effective when used against a weakened retaliatory strike than against a massive first strike, which is especially dangerous because in a crisis this will tip the balance of the strategic equilibrium. In a critical situation between two possessors of ballistic missile defenses, each side will be better off by striking first. Moreover, a BMD will contribute to strategic instability because the so-called "defensive" space weapons can be used as offensive weapons, which for a start could knock out a counterpart BMD on the other side (having spent only an insignificant part of its resources).[8]

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8. Sagdeyev, *With Scientific Consistency, Pravda*, Nov. 2, 1985, at 5.

It should be noted that the instabilities of a transitional period and the special instability of the strategic balance in a crisis are characteristic even for an idealized situation, ignoring the real problems to be encountered by the developers of ballistic missile systems and measures against them, including the offensive weapons.

Studies have shown that space-based ballistic missile defense itself is so unbalanced that it would be safe to say that, should it be deployed, the macrosystem of the strategic balance would have no stability reserve at all.

III. LIMITED BMD AND THE STRATEGIC BALANCE

Following the early discussions in 1983, the emphasis now seems to have shifted from plans and feasibility of the nationwide ballistic missile defense designed to cover the entire United States and the territories of its allies to the ideas associated with the feasibility of limited BMDs, namely area and point defenses.

One cannot ignore the staggering costs and complications, as well as the potential responses of the other side, which make President Reagan's "Star Wars" program unrealistic.

A number of studies undertaken by both Soviet and American scientists support the conclusion made by Soviet academicians in their *Appeal to All Scientists of the World* of April 1983. They stated that antimissile weapons can give practically nothing to a country becoming a target of a sudden massive nuclear attack since they are unable to protect the overwhelming majority of that country's population. It was noted with good reason that, taking into account the countermeasures installed by the other side, such a system would also be unable to prevent a retaliatory attack.

These obvious inferences fall on the deaf ear of SDI officials, who are currently engaged in developments that would eventually make the course of events irreversible. They put forward various arguments in favor of partial forms of a BMD that they do not even claim to be effective.

They declare that even a BMD of limited capabilities, functions and scale could be created before the year 2000 and would have a "stabilizing effect" on the political and strategic climate in the world. As for the global BMD, it would be with us all right, although this is a matter of long-term planning. Limited forms of the defense system are still considered by many members of powerful groups in the U.S. government to be at an interim stage. Remarkably enough, there is no mention now of any constraints on using nuclear weapons in the hypothetical antimissile systems, even in limited ones. An official document of the U.S. State Department of June 4, 1985, reads: "We will continue to explore the promising concepts which use nuclear energy to power devices which could destroy ballistic missiles at great distances."[9] Influential U.S. experts, apart from these who advocate the nuclear-bomb-pumped X-ray laser, are actively discussing the need to use nuclear arms for antimissiles of the planned BMD against the other side's ICBMs in the terminal phase of their trajectories.[10]

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9. *The Strategic Defense Initiative*, U.S. Embassy, Moscow, U.S.S.R., Official Text No. 33, at 9 (1985).
10. U.S. CONG. OFF. OF TECH. ASSESSMENT, BALLISTIC MISSILE DEFENSE 158 (1985).

The intermediate, less-than-perfect ballistic missile defenses are being justified, among other things, by the need to protect U.S. territory from "third countries," *i.e.*, nations that might acquire nuclear arms in the near future and that could, as is believed by some Western experts, blackmail with their nuclear weapons even the great powers. It is also maintained that a limited BMD, although unable to handle a massive nuclear attack—neither a first nor a second strike—on city targets and industrial areas, would nevertheless be able to shield the country from accidental, unauthorized ICBM launches.

A limited BMD, it is maintained, would be a factor of deterrence simply owing to the heightened uncertainties in the strategic planning of the sides.

Some high-ranking spokesmen of the U.S. government consider that it would be desirable and feasible to deploy in the foreseeable future a number of antimissile complexes (above all, ground- and air-based) for the point defense of ICBM launch sites, which become ever more vulnerable to the ever more accurate and powerful warheads.

These arguments do not hold water. Following the normal logic of politics and strategy, one can see that a more effective way to protect nations from nuclear blackmail, and even more so from the use of nuclear weapons, would be to strengthen the nonproliferation regime, to ease international tension overall and in those regions where there are near-nuclear states. Of course, in doing so the United States and other nuclear powers would have, following the Soviet lead, to demonstrate in practice to other nations their willingness to limit and cut their respective nuclear arsenals, in full accordance with article VI of the Non-Proliferation Treaty.

Other useful measures would be some steps in the direction of reducing the probabiltiy of a nuclear war in the spirit of the bilateral Agreement on the Prevention of Nuclear War signed in 1973.[11]

During the Geneva summit, an agreement was reached for experts to study the question of founding U.S.-Soviet nuclear risk reduction centers.[12] In this connection the following would seem pertinent. In a special study performed by the U.S. Strategic Air Command (on order from U.S. Senators Sam Nunn (D-Ga.) and John Warner (R-Va.), who are currently looking into the issue of joint centers aimed at reducing the threat of an accidental nuclear war), nine potential means of delivery of nuclear weapons by "third countries" are listed (including terrorist groups).[13] Analysis of these means against the background of any, even ideal, capabilities of future antimissile weapons suggests that none of them could be intercepted or neutralized by a BMD, wherever the component is based—in space, in the air, or on the ground.

As regards the uses of a BMD to protect against accidental, unauthorized launches of nuclear-armed missiles, this may appeal to some superficial observers. But those advocating this idea make a point of overlooking the fact that, on the technological side, such launches might be countered by some simpler means,

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11. *Pravda*, June 15, 1985 at 5.
12. *U.S.-Soviet Summit, Geneva, Nov. 19-21, 1985*, [1985] POLITIZDAT (Moscow) 14 (published in Russian).
13. *Nuclear Risk Reduction: Hearings Before the Senate Comm. on Foreign Rel.*, 98th Cong., 2nd Sess. 6 (1984).

which would also be not so destabilizing from military and political standpoints, for example, by improving the reliability of the self-destroying devices in strategic delivery vehicles with on-board guidance systems, which would enable the vehicle (but not the nuclear warhead) to be exploded on command from the control center with minimal damage to the population and environment.

It is also necessary to weigh the risks of an accidental launch, not only in terms of military, political and economic costs of the deployment of a BMD, but also in terms of the hazards of the BMD self-activating as a result of an error in the detection and identification system or in the battle management system of the BMD. It was estimated that the probability of an error or a failure in the battle management system would be much higher than the probability of a random launch, especially if the nuclear arsenals of both sides were cut drastically in accordance with equitable agreements (provided, of course, that the ratio of the number of warheads of one side to the number of units in the strategic forces of the other side be the same), and if the reliability of the early warning and control systems were to be steadily improved.

Also contrary to the dialectics of the interplay of strategic forces as a complicated macrosystem is the notion that was fostered by some representatives of the Reagan Administration, that a limited BMD will introduce greater stability into the strategic calculus on both sides owing to the mounting uncertainties of the first-strike outcome.

First, the advocates of this thesis make a point of deliberately ignoring the unilateral obligation of the Soviet Union not to use nuclear weapons first, which, by the way, dictates even more severe control measures to prevent an accidental launch of a nuclear missile. If the United States and its allies followed suit, the world would become more stable and secure, a world with a lower probability both of a planned first strike and of accidental missile launches.

Second, the present-day strategic situation has inherent in it a sizeable measure of uncertainty determined by a multitude of different factors. Such uncertainty, within certain limits, of course, could play a stabilizing role. Lower uncertainties, for example in respect to a devastating first strike, would play an apparent destabilizing role. On the other hand, the escalation of uncertainties above some level that has been established in recent years seems to be quite dangerous as well. This additional uncertainty, taken into account by the strategic planners of one side, is bound to affect the uncertainties in the planning by the other side, which in turn would lower the stability of the current strategic balance and increase the threat of a nuclear war.

According to many knowledgeable experts, the uncertainties in the planning of a devastating first strike are still too high under modern conditions. To be sure, in the longer run the probability of such an attack could increase due to the U.S.-initiated buildup of warheads, improvements in their accuracy and higher yield, and also as a result of the deployment of novel means of strategic antisubmarine warfare. But this goes to prove that there is an urgent necessity to take definite measures to overcome the situation in which a first strike becomes ever more attractive.

Nuclear weapons freeze, both quantitative and qualitative, would be a really effective measure aimed at preventing the buildup of first-strike capability. This is to be regarded as the first step in the direction of nuclear arms reduction

aimed at their complete elimination by the year 2000. Another important step would be the total ban and cessation of all nuclear explosions. Specifically, such actions of the sides would reduce the number of high-accuracy nuclear weapons in their arsenals, *i.e.*, weapons that would destroy hard targets and command centers. It is also necessary to undertake agreed actions to limit antisubmarine operations, which also undermine the strategic stability. There are also a number other measures that could reduce the probability of a devastating first strike. Suggestions to this effect are being put forward persistently by the Soviet Union. These suggestions take into account the security interests of both sides and the constructive ideas proposed in the West.

Lastly, a BMD system designed to protect ICBM launch sites in the United States beyond the limits stipulated by the ABM Treaty of 1972 and the Protocol thereto of 1974, as a key element of the U.S. military doctrines of "protracted" and "limited" nuclear wars, would have a destabilizing effect as well.

The Washington strategists are toying with the idea of "limited" or "controlled" exchange of nuclear strikes against ICBM fields without damaging industrial and administrative centers and without enormous casualties among civilian populations, these exchanges terminating the hostilities on conditions favorable to the United States. Soviet military doctrine, which is based on realistic views of the nature of nuclear war, rejects the idea of its "limitedness" as unsound and unrealistic, and hence exceedingly dangerous.

Nonetheless, the Soviet Union and its allies are forced to take into account these concepts of U.S. political and strategic thinking, however unrealistic they may be.

In the prenuclear era, if a nation followed unrealistic warfare schemes, this in the first place meant that the probability of that nation being defeated in the war increased. In a way, from a purely military point of view, this played into the hands of the nation's potential opponents. But nowadays one has to approach this differently. Leadership that is guided by doctrines and concepts that fail to reflect the real nature of war and the systems character of the strategic balance, leadership that believes in the possibility of "controlled" and "limited" warfare using weapons of mass destruction, is heading for a war with an unpredictable course of events, which would be bound to force it to use such means that would eventually lead to a world catastrophe.

IV. BMD AND EUROPEAN SECURITY

The military and political implications of the deployment of a space-based antimissile system would, for the most part, affect the situation in Europe, as one of the most important regions of the world.

U.S. government spokesmen have tried to persuade the Western European members of the North Atlantic Treaty Organization (NATO) that by installing their antimissile "shield" the United States would be able to protect not only itself but also its allies. It is often stressed in U.S. official documents that the United States continues to honor its commitments to President Reagan's program whose goal is to create an "absolutely leak-proof defense" for the United States and its allies.

Moreover, as noted by the former head of the Strategic Defense Initiative Organization, Lieutenant General James Abrahamson, the U.S. "concept of an

effective defense is one which protects our [American] allies as well as the United States."[14]

Is it possible in principle to provide for such a "leak-proof" defense for the allies using the American antimissile "umbrella"?

The very concept of the proposed space-based ballistic missile defense is based on the assumption that each layer and component of the defense is less than perfect, and so even theoretically it cannot ensure reliable defense. Each defensive layer is called upon to stop the "leakage" through the previous layer, *i.e.*, to destroy the remaining warheads.

Bringing American allies under the BMD "umbrella" would imply protecting them from nuclear vehicles other than ICBMs. Characteristic of the European theater are medium range ballistic missiles with depressed trajectories, shorter flight times, and so on.

These and other factors strongly suggest that it would be impossible to apply all the layers of the proposed space-based ballistic missile defense system to protect Europe.

The reports published by the study teams sponsored by the Reagan Administration (*i.e.*, Fletcher, Hoffman and others) referred to the possibility of the advent of fast-burn boosters as a serious countermeasure. But unlike ICBMs, medium range missiles, and even more so theater missiles, have boost phases much shorter than the above lower limit required for a boost-phase interception layer to engage them.

Subsequent layers would also function within unrealistic time limits, since the total flight time of medium-range ballistic missiles (MRBMs) is two or three times shorter than that of ICBMs. The task of the subsequent layers would also be made more difficult because the attack could not be weakened markedly by the previous BMD layers.

Since MRBMs fly at a lower altitude than ICBMs in their midcourse phase, this excludes or at least limits the uses in the European theater of many laser types due to substantial atmospheric absorption of laser beams. Using lasers whose beams penetrate the atmosphere would be hindered by the typically overcast skies over Europe. In addition, low flight altitudes would require more space-based BMD components to be constantly on station there, since the ranges of the weapons would be shorter.

Additional demand would be imposed on kinetic energy weapons. The altitude of an orbit of a space-based battle station is selected depending on the total number of carriers and its active service life in orbit. The lower trajectories of MRBMs and their shorter exoatmospheric flight times would call for either longer ranges of the antimissile projectiles (and hence, more sophisticated designs) or lower orbits for the stations with all the implied consequences, the most crippling one being the need to shorten the in-orbit life of the station.

In short, the proposed American BMD would be even less effective for overpopulated Europe (which would suffer badly in any case) than for the United States itself.

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14. *Strategic Defense and Anti-Satellite Weapons: Hearings Before the Senate Comm. on Foreign Rel.*, 98th Cong., 2nd Sess. 13 (1984).

It is also worth noting that destroying from space many nuclear weapon delivery means deployed in the European theater seems infeasible in general. This applies to bombers, cruise missiles (ground-, air-, and sea-based), "nuclear artillery" and some other vehicles, which together account for thousands of units of nuclear weapons, including theater weapons.

The evolution of the tasks of the SDI program (its initial goal was to protect the territory and population of the United States) has led to a renewal of interest in area and point BMD complexes for Europe as well. Emphasis on these ABM defense complexes would imply the predominant development of what is called the terminal interception layer of a BMD. There is a significant measure of similarity between the technical means of an area and a point ABM defense system and the terminal interception layer of a comprehensive space-based BMD.

It is often held that for Europe the best form of antimissile system is limited BMD, since the terminal velocity of warheads of MRBMs and other similar vehicles is much lower than that of ICBMs. However, one should not overlook the fact that, as a result of other characteristics of their trajectories, the flight time from the beginning of the selection of decoys to the target is practically the same due to atmospheric effects.

As with a comprehensive space-based BMD, local BMD could be thwarted by a set of relatively cheap countermeasures which might, for example, easily deceive the sensors of battle management systems.

Should relatively efficient point BMD be deployed to protect, say, ballistic missile silos primarily against MRBMs, one possible countermeasure could be to saturate the defense with targets.

The concept of limited (area or point) defense is, as a rule, associated with the defense of and area on which some important strategic installation is located. Selection of an area should be guided by some criteria. But in Europe, because of its dense population and concentration of industry, it would be hardly possible to single out certain regions of special importance. Also, there are no ICBM fields here whose protection would warrant a BMD complex.

Admittedly, for a certain offense-to-defense ratio local BMD complexes could reduce local devastation, but overall this does not contradict the thesis that for Europe a comprehensive space-based antimissile system would be ineffective in a full-scale nuclear conflict.

But there is more to it than this. According to the ABM Treaty of 1972, the United States undertook "not to transfer to other States and not to deploy outside its national territory ABM systems or their components" (article IX). It follows thus that any joint activities of the United States and its allies to implement the SDI plans would eventually be a direct violation of the Treaty. The same is true of the point ABM defense, which is claimed officially to be an MRBM defense, although it can also be used as an ICBM defense, which is a violation of article VI of the ABM Treaty.

This, however, does not stop certain groups in the United States and in some of its allied countries from joining forces in developing a space-based antimissile system.

Now the SDI program supporters appeal for stronger integration of the United States and its Western European allies in the political, military and economic spheres. The U.S. government is looking forward to gaining from such cooperation by augmenting its technological, economic and manpower resources,

even without actually bringing them in from other countries, with overseas research and development organizations simply carrying out American contracts.

Representatives of the U.S. government explore every avenue to draw into the SDI program governmental and private organizations in Western Europe. Some countries have already agreed to participate in SDI efforts. The SDI officials are confident that many European firms, whatever the official stand of their respective governments, will be unwilling to lose major contracts and will join the SDI program. One of the incentives for such firms may be fears of not gaining access to American technologies in the course of the SDI work. These fears, by the way, also predetermine the nature of discussions in the govermental, industrial and academic circles of some European countries. For their part, Reagan Administration spokesmen, in their attempts to lure European private firms, lavished promises upon these firms of billion-dollar contracts concerning SDI.

The wide involvement of Western European business in implementing U.S. plans for militarizing space is pregnant with hazards of destabilizing the international situation. If involved in the Star Wars program, Western European firms in the various sectors of business would, for one thing, give a mighty impetus to the work, and for the other, would become a powerful SDI lobby in Western Europe. In consequence, by involving Western European private business the U.S. government would be able to make European countries more dependent on U.S. policy—another contribution to international tensions.

Much in the position of the Western European allies of the United States stems from their false views and false ambitions. For example, the desire of the Federal Republic of Germany to get a finger in the SDI pie is explained, if only partially, by the fact that, being a NATO member and a possessor of significant economic potential, this nation has no nuclear weapons, and so, according to some of its leaders, it cannot play a fitting role in world policy. The West German leadership is thus looking forward, through the country's participation in the Star Wars program, to gaining indirect access to nuclear arms. Some high-ranking politicians in that country state that only by participating in the SDI could West Germany and other European countries increase their influence in the international community.

But these illusions are dangerous and senseless—the international prestige of any country has nothing to do with its military might. Also illusionary are the hopes of acquiring some defensive superweapons. Western Europeans will only be "entrusted" with secondary and, obviously, isolated projects. The United States is not interested in strengthening its allies in such an important sphere and will never reconcile itself to the possibility of undermining its own security through possible leakages of sensitive military information abroad.

Introduction of a new element into the nuclear calculus in Europe, just as in the world at large, will appreciably complicate and entangle the assessments of the actual capabilities of the sides and will hinder the search for objective criteria of parity and the observation of the principle of equality and equal security. One cannot help agreeing with those Western researchers who note that a BMD will "leave Europe as vulnerable as before."[15]

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15. HAWKS, DOVES & OWLS 88 (G. Allison, A. Carnesale & J. New eds. 1985).

The attitude of Western European countries to the SDI program becomes a touchstone in inter-European relations. So, already now we witness one of the most serious complications of the last decades in French-West German relations caused by the differences in the two countries' attitudes to the SDI. Whereas West Germany endeavours to get from the United States a separate package of projects within the SDI framework, France suggests the Western European *Eureka* project, which is counterposed to the American project and is meant as a way to cement Western Europe by stimulating the development of science and technology on the continent. The results of the research and development projects could be used for military purposes as well. This could not but influence the political climate of Europe as a whole.

Attempts to involve Western European countries in SDI create well-founded concerns in realistically thinking Europeans about the fate of the ABM Treaty of 1972 and about the future of *detente* on the continent. Security cannot be strengthened by one side's attempts to create a superior system of arms (even if called defensive). The inclusion of the Europeans would only increase the number of people having delusions concerning the true purposes and real possibilities of the SDI, would result in a great deal of time and resources wasted, would undermine the Western European economy and would raise the level of risks on the European continent.

Some of the American proponents of SDI believe that if both the United States and the U.S.S.R. had BMDs, this would do away with some of the problems of the strategic balance between East and West owing to the devaluation of the French and British nuclear forces. But this is a mistake, at least because one could hardly expect that France and the United Kingdom would remain passive observers if confronted with such a course of affairs. It is quite obvious that the many countermeasures, including the modernization and buildup of offensive nuclear weapons and some active countermeasures, would be available in each of the two nations, let alone in a wider Western European union.

Overall, many things suggest that the arguments of the American (or NATO) "shield" to protect Western Europe are attractive for some Europeans. The above analysis leads one to conclude that the real goal of U.S. strategists is to use the shield in a crisis to protect the United States from a retaliatory strike, and to use Europe as an arena in which the battle might be fought out. This conclusion is supported by the fact that the United States did not undertake not to use nuclear weapons first, which for Europe, with its strategic geopolitical position, is an especially ominous sign.

The national leaders of those Western European countries which plan to contribute in some form or another to the SDI effort try to influence the public opinion of their countries by arguing that they are only planning to participate in the research and development work and, as for the actual deployment of a BMD system, this is going to be the subject of separate talks with the United States. But by the time of those talks, Western Europeans will be head over ears in SDI projects which, as noted above, will produce a powerful lobby including military industrialists and related politicians that will push through the deployment of space-based BMD.

What is more, the talks between the United States and its allies can simply be used as a cover, as was really the case before the deployment of American

medium range missiles in Europe, when the so-called "double track" decision was taken.

In fundamental matters, when handling the issue of the expediency of antimissile systems, the United States often just "forgot" the interests of its allies. For Western European political leaders, official statements of the U.S. government about its plans with respect to the deployment of a BMD for the most part came quite unexpectedly. Recall the beginning of 1967, when President Lyndon B. Johnson promulgated his plans to deploy ABM defense systems and submitted to the U.S. Congress a request to allocate the required $375 million. The Nixon Administration behaved similarly in 1969, when it decided to revise in principle the structure of the planned ABM defense system and switch from its planned "thin" defense based on the Sentinel missiles to an ABM defense based on launch sites for the Safeguard missiles. Also out of the blue for the allies came President Reagan's March 23, 1983, speech, which gave a fresh impetus to the development of a comprehensive ballistic missile defense.

There are no grounds for believing that when dealing with further stages of the development of the SDI plans the U.S. leadership will provide more information to its allies and consult with them about its plans. There will, of course, be exceptions, in situations like the present one, when the United States itself needs support for its program (in a wide variety of forms) from its allies. This warrants the inference that, in addition to the allies' resources, another interest the United States seeks in Europe is to enlist political support for the SDI program.

According to official documents of the U.S. Department of Defense, both sides will acquire their space-based BMD's in a more favorable international climate than currently exists. It is stated that "a deployment of defensive systems would most usefully occur in the context of a cooperative, equitable, and verifiable arms control environment that regulates the offensive and defensive developments and deployments of the United States and Soviet Union." If the American side really thinks so, it would perhaps be more logical to expedite now the development of agreements to this effect, all the more so since, even from the viewpoint of SDI proponents, the program would be hard to realize otherwise. Clearly, the Soviet Union will never sign a treaty with the United States that does not meet the conditions of equality and equal security. These arrangements would be better safeguards of peace, for Europe too, than those that, in the opinion of the United States, could provide for any form of BMD. It would also be of importance that this approach would prevent a senseless waste of enormous funds and brainpower.

The inclusion of Western European countries in the U.S. Star Wars program may be seen as a victory of adventurism in Western European policy; it would imply a new round of arms race destabilizing the strategic balance instead of reducing arms in Europe.

Real security on the European continent cannot be achieved through the militarization of space or the deployment of new weapons on the ground. A major landmark on the path to a stable Europe was the realization of the proposals made by General Secretary Mikhail S. Gorbachev in his statement of January 15, 1986, to ban completely Soviet and American medium range missiles in Europe, both ballistic and cruise. To this end, the United States must undertake

not to supply American-made strategic and medium range missiles to other countries, and the United Kingdom and France not to build up their respective nuclear arsenals. The Soviet Union will do the same. The realization of the further stages of the plan as proposed by the Soviet Union will completely free Europe of nuclear arms.[16]

V. CONCLUSION

To sum up, should the United States go on with its plans of developing and deploying one or another of the versions of the proposed space-based ballistic missile defense, this would erode the macrosystem of the strategic balance. A combination of antimissile weapons, developed and deployed beyond what is allowed by the ABM Treaty of 1972, and offensive nuclear weapons makes the strategic equilibrium less stable than without the BMD. Even if the U.S.S.R. installs its countermeasures to restore strategic parity, the military and political balance will in reality be less stable, if one takes into account those factors of instability which are inherent in the comprehensive space-based ballistic missile defense system.

16. U.S. DEP'T OF DEFENSE, REPORT TO THE CONGRESS ON THE STRATEGIC DEFENSE INITIATIVE 9 (1985).