

July 2015

An Interdisciplinary Approach to the Strategic Defense Initiative Debate

Scott F. March

Please take a moment to share how this work helps you [through this survey](#). Your feedback will be important as we plan further development of our repository.

Follow this and additional works at: <https://ideaexchange.uakron.edu/akronlawreview>

 Part of the [International Law Commons](#), [Military, War, and Peace Commons](#), and the [National Security Law Commons](#)

Recommended Citation

March, Scott F. (1986) "An Interdisciplinary Approach to the Strategic Defense Initiative Debate," *Akron Law Review*: Vol. 19 : Iss. 3 , Article 1.

Available at: <https://ideaexchange.uakron.edu/akronlawreview/vol19/iss3/1>

This Article is brought to you for free and open access by Akron Law Journals at IdeaExchange@UAkron, the institutional repository of The University of Akron in Akron, Ohio, USA. It has been accepted for inclusion in Akron Law Review by an authorized administrator of IdeaExchange@UAkron. For more information, please contact mjon@uakron.edu, uapress@uakron.edu.

AN INTERDISCIPLINARY APPROACH TO THE STRATEGIC DEFENSE INITIATIVE DEBATE*

by

SCOTT F. MARCH**

I. INTRODUCTION

Ensuring that space is used exclusively for peaceful purposes is one of the most important contributions which international law can make to the safe and orderly existence of all nations. Through the work of the United Nation's Committee on the Peaceful Uses of Outer Space, five significant treaties have emerged which pertain to certain activities of signatory states in outer space. Several international organizations exist, such as the International Telecommunication Union and the International Institute of Space Law, which contribute to the peaceful utilization of space resources by promoting an acceptable legal framework.

While acknowledging the important effect of international law upon spacefaring, it must be borne in mind that other factors beyond the realm of international law strongly influence national space operations. This is especially true in the more competitive and secretive area of military space activities. International law is but one element in an overall combination of factors which ultimately will determine the extent to which space is further used for military purposes. By placing the role of international law in proper perspective, a more realistic and useful debate as to the current issues of space militarization and weaponization may result.

An interdisciplinary framework in which international law is but one element is presented in this article in the hope of lending organization to the complex subject of space weaponization. Seven factors are discussed which strongly influence decision-makers in both the United States and the Soviet Union who are charged with establishing and implementing the military space policies of their respective nations. They are (1) the relationship between the militarization of earth and the militarization of space; (2) the effects of weapon technology and national defense policy upon the use of space; (3) the interrelationship of the international law-making process with national space objectives; (4) the influence of the press and public opinion upon the military space debate; (5) problems inherent with outer space arms control treaties and provisions; (6) the danger of relying upon false analogies in debating issues of spaceborne weaponry; and (7) the tendency to treat arms control and disarmament

*This article is based on a paper submitted to the 1985 International Institute of Space Law Colloquium on the Law of Outer Space.

**Attorney, Fitzgerald, Abbott & Beardsley, Oakland, California; A.B., University of Southern California; M.B.A., University of North Dakota; J.D., University of California Hastings College of Law; Member of the California Bar.

ment as the only available means to bring about peace.

This proposed framework then will be applied to help identify and analyze important elements of the debate surrounding the United States' Strategic Defense Initiative (SDI) program. SDI presently is the most debated issue in the field of military space operations. The application of an interdisciplinary approach which considers international law, technology, national defense policy and strategy, and the role of public opinion offers a practical and organized manner in which to debate the value and effects of on-going research efforts concerning a spaceborne ballistic missile defense system.

II. ELEMENTS AFFECTING THE MILITARIZATION AND WEAPONIZATION OF SPACE

Militarization of Space is Tied Inextricably to the Militarization of Earth.

There is an inherent danger in thinking in terms of "space warfare" and "earthbound warfare"; for it properly can be argued that there is only warfare. Separating a theatre of combat into discrete legal regimes may aid scholarly analysis, but it fails to reflect important practical considerations. For example, battlefield commanders continually strive for the most expeditious means to employ force against an opponent, and this traditionally has equated to "taking the high ground." Consequently, it must be realized that in seeking to ban weapons from space, the international law-makers are demanding of the generals that they sacrifice their most tactically advantageous position available; for on today's battlefield, space is the high ground.¹

Essential command, control, communication and intelligence functions presently are accomplished through the use of military satellites. Other military uses of space include navigation, missile detection and tracking, and meteorology (including target site weather forecasting).² These are all functions which can best, or only, be performed from space and it is no great jump in logic to assume that weapons delivery also can be done best from space. This raises a point that has been made by other authors; that a clear distinction should be made between the militarization of space and the weaponization of space.³ Some reasons for making this distinction include (1) space already is very militarized, but less weaponized; (2) treaty language heretofore has reflected this distinction;⁴ and (3) some militarization of space actually is

¹D. GRAHAM, *High Frontier* (1983); Smith, *Legal Implications of a Space-Based Ballistic Missile Defense*, 15 CAL. W. INTL. L.J. 52, 53-54 (1985) [hereinafter cited as Smith]; but see T. KARAS, *THE NEW HIGH GROUND* 201-02 (1983) [hereinafter cited as KARAS], which argues that space is the new military high ground only in a limited sense because neither superpower can "seize and hold" space as a strategic territory.

²G. H. STINE, *CONFRONTATION IN SPACE* 11-24 (1981); Reed & Norris, *Military Use of the Space Shuttle*, 13 AKRON L. REV. 665, 666-70 (1980) [hereinafter cited as Reed & Norris].

³See, e.g., He Qizhi, *On Strengthening Legal Measures for Prevention of Arms Race in Outer Space*, PROCEEDINGS OF THE TWENTY-SEVENTH COLLOQUIUM ON THE LAW OF OUTER SPACE 354 (1985).

⁴Some treaties have demilitarized specific geographical regions, some treaties have deweaponized regions, and some do neither. For example, the Antarctic Treaty, Dec. 1, 1959, 12 U.S.T. 794, T.I.A.S. No. 4780, 420 U.N.T.S. 71, entered into force June 23, 1961 [hereinafter cited as Antarctic Treaty] provides for the

desirable. As to this last point, it long has been recognized that early warning satellites extend the time in which a nation can assess an incoming missile attack, and more importantly for maintaining the peace, resolve a miscalculation based on human or machine error. Another example is reconnaissance satellites, which give nations some degree of confidence that arms control treaties are being observed by other signatories.⁵

As the military high ground, space should be thought of as a geographic place and not merely a legal regime governed by vague concepts such as "common heritage of mankind."⁶ The edge of space is a national border, while space itself encompasses essential lines of communication and transportation. Space also holds vast natural resources. These factors combine to pressure spacefaring nations into increasing their military presence in space, just as the United States and the Soviet Union seek to protect their ocean space access and assets by establishing a 600-ship navy and a worldwide/"blue water" presence respectively. In future space arms discussions, a fundamental objective for participants will be to ensure continued free use of and access to national space resources. A second major factor will be to ensure that national space borders are adequately protected, so that space is not used as a conduit for offensive weapons. These issues will assume paramount importance when any proposal is made to ban some specific weapon system from space. No nation can be expected to bargain away the ability to defend itself from attack in and from space.

Considerations of Weapon Technology and Defense Strategy in the Weaponization of Space Debate.

There appears to be a close "cause-effect" relationship between arms control treaties and technological limitations. What is less certain is whether treaties limit arms technology or, conversely, whether limited technological capability in some areas makes possible a treaty. For example, while one view

complete demilitarization of that continent in Article I, Paragraph 1: "Antarctica shall be used for peaceful purposes only. There shall be prohibited, *inter alia*, any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military maneuvers, as well as the testing of any type of weapons."

The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, 18 U.S.T. 2410, T.I.A.S. No. 6347, 610 U.N.T.S. 205 (entered into force Oct. 10, 1967) [hereinafter cited as Outer Space Treaty] partially dewaterproofs earth orbit in Article IV, which provides: "States Parties to the Treaty undertake not to place in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner." Of course, the strategic high seas are not dewaterproofed or demilitarized. See *infra* note 22.

⁵Christol, *The Common Interest in the Exploration, Use and Exploitation of Outer Space for Peaceful Purposes: The Soviet-American Dilemma*, PROCEEDINGS OF THE TWENTY-SEVENTH COLLOQUIUM ON THE LAW OF OUTER SPACE 281, 283 (1985); Kotlyarov, *Soviet Proposals on Banning Outer Space Militarization: Adequacy of Verification Measures to the Scope of Commitments*, PROCEEDINGS OF THE TWENTY-SEVENTH COLLOQUIUM ON THE LAW OF OUTER SPACE 341 (1985).

⁶For a discussion of the distinction between "space as a place" and "space as a legal regime" see Glazer, *Astrolaw Jurisprudence in Space as a Place: Right Reason for the Right Stuff*, 11 BROOKLYN J. INT'L. L. 1, 3-8 (1985) by IdeaExchange@Uakron, 1986

holds that the Antiballistic Missile Treaty⁷ (ABM Treaty) limited ABM technology and prevented a defensive arms race, a converse argument is that the ABM treaty came into existence only because existing ABM technology at that time was inadequate to justify deployment of the system. This created the potential for a highly visible, but substantively lacking, gesture of superpower arms control agreement. Supporting this latter view is the fact that the United States chose to not even build the two systems (later one) permitted it by the treaty and subsequent protocol.⁸ Likewise, one major reason that an antisatellite weapon (ASAT) treaty never came to pass was that the United States had yet to test its ASAT system, whereas the Soviet Union was well into the operational testing stage.⁹ As a result, the United States refused to codify the technological imbalance of the moment. The expired SALT I (Interim Agreement) and the unratified SALT II, however, are examples which demonstrate some actual limitations of technological development¹⁰. The point is that arms control treaties often are shaped by the existing state of technology. Technology is not always limited by arms control treaties. Therefore, any space arms control treaty will be effected greatly by the existing state of technology in such areas of ASAT and SDI. A clean slate no longer exists in space.

Post-World War II strategic arms control treaties have conformed to the doctrine of Mutual Assured Destruction (MAD). The theory of MAD is that neither superpower can launch a nuclear attack upon the other and expect to survive the inevitable counterstrike. MAD is dependent upon deterrence, and agreements such as the SALT I Interim Agreement, the ABM Treaty and SALT II have sought to preserve and protect the existing balance of terror. This is best demonstrated by the ABM Treaty in which it is agreed, in effect, that it is destabilizing to defend oneself. The reasoning is that a defensive system denies an opponent the ability to retaliate. Such a situation would give an aggressor a preemptive first-strike capability, for it can launch an attack and defend against the counterattack. Hence, destruction would not be mutual, nor assured. Any future arms control treaty must either respect the tenets of MAD or provide a suitable alternative to this doctrine. It must enhance deterrence and/or ensure that an effective defensive capability exists. This can be done from space just as it can be done from the ground. The question becomes

⁷Treaty on the Limitation of Anti-Ballistic Missile Systems, May 26, 1972, United States-U.S.S.R., 23 U.S.T. 3435, T.I.A.S. No. 7503 (effective Oct. 3, 1972); Protocol to Treaty, on the Limitation of Anti-Ballistic Missile Systems, July 3, 1974, United States-U.S.S.R., 27 U.S.T. 1645, T.I.A.S. No. 8276 (entered into force May 24, 1976). The term ballistic missile defense (BMD) appears to have superseded ABM as the more appropriate jargon in recent years.

⁸Smith, *supra* note 1, at 59 & n.41.

⁹KARAS, *supra* note 1, at 172-73.

¹⁰The Interim Agreement on Certain Measures with Respect to the Limitation of Strategic Offensive Arms, May 26, 1972, United States-U.S.S.R., 23 U.S.T. 3462, T.I.A.S. No. 7504 (entered into force Oct. 3, 1972) has expired. SALT II negotiations led to an agreement signed by President Carter and General Secretary Brezhnev on June 18, 1979. Although the United States Senate has not ratified this agreement, both parties generally abide by its provisions.

which situs is more efficient and reliable.

International Legal Efforts as a Means of Implementing National Policy.

One facade pertaining to arms control treaties which should be dispelled promptly is the belief that proposals for arms control treaties and efforts at interpretations by the superpowers are based always on objective applications of international law and custom. Instead, international law often is used as a national policy tool. Delegates from both superpowers too often cloak nationalistic positions with self-serving references to documents such as the United Nations Charter and the Outer Space Treaty.¹¹ This is best evidenced by the rhetoric surrounding the East-West split on issues such as the aborted ASAT treaty and the military characterization of the Space Shuttle.

It seems logical that if all nations objectively applied international legal principles, there would be no bloc voting pitting East against West on key issues concerning the militarization and weaponization of space. Bloc voting results from political and military posturing, not unbiased application of legal principles. Future negotiators, therefore, should guard carefully against situations in which various charters, treaties and customs are invoked as justification for advancing a nationalistic objective.

Influences of Press and Public Opinion Upon Arms Control Decision-Making and Treaties.

Of the seven factors discussed in this article which affect arms treaties, perhaps the one which is most unbalanced and most exploited by one superpower to the detriment of the other is the power of the press and public opinion upon national decision-making. The United States and the Soviet Union are at opposite ends of the spectrum in terms of governmental use and regulation of the press. In the Soviet Union, public opinion virtually has no impact upon government decision-making, *especially* in an area critical to national security such as space weaponization. Decisions generally are reached behind closed doors and the result is communicated from a (seemingly) unified front. This is not to say that disagreement does not occur, but that such arguments are not

¹¹See Russell, *Military Activities in Outer Space: Soviet Legal Views*, 25 HARV. INTL. L.J. 153, 164-65 & nn. 77-84 (1984):

In the Soviet view, international law cannot be divorced from the class struggle. In Marxist terms, international relations are part of the superstructure of society, and relations between states with different social systems constitute class relations. In this ideological context, the Soviets unabashedly place international law in the service of the Soviet state. Since law represents a class phenomenon, it becomes a weapon in the ongoing struggle for world socialism.

Id. at 164.

The Soviets, however, properly point out that they do not have a monopoly on the nationalistic use of international law. Soviet author V.S. Vereshchetin, in criticizing an earlier article by American author Dr. Harry Almond, states that Dr. Almond "gives these absolutely clear and unambiguous provisions of the UN Charter his own interpretation erasing their legal content, their unconditionally binding character for states." Vereshchetin, *Against the Use of Force in Outer Space and From Outer Space*, PROCEEDINGS OF THE TWENTY SEVENTH COLLOQUIUM ON THE LAW OF OUTER SPACE 358, 359 (1985).

conducted in full public view.

The same is not the case in the United States. Weapon systems often are authorized and funded by the slimmest margin of congressional votes. The policy views of all legislators are available to those who care to know and tremendous public pressure often is brought to bear upon key "swing votes" hoping to influence the future course of United States strategic policy and hardware.

The openness of United States society presents an exploitation opportunity to the Soviet Union, whereas the United States has little direct access to the Soviet state-controlled media or general public. As a result, arms control negotiations generally are accompanied by Soviet attempts to influence the United States and Western Europe press and public in hopes of softening United States negotiating resolve and support at home.¹² Of course, the United States can and does respond by presenting the Administration position in the Western press, but is rarely allowed to use Soviet media. A distinct imbalance results in the "media theater"¹³ which accompanies arms control negotiations; and participants from the two superpowers come to the bargaining table on vastly different footing. It should be noted, however, that the media sparring was temporarily suspended during the Reagan-Gorbachev Geneva Summit of 1985, during which the militarization of space was discussed in detail.

An additional point concerning public opinion in the area of strategic weapons systems is that today's debate deals with yesterday's technology. Since much military research is classified, there is a significant lagtime between developing a certain capability and reporting it to the general public. Consequently, it is risky to state emphatically that some specific military technological feat is beyond a nation's capability merely because it has not been made public. Those who are closest to space weapons projects are the same people bound by their security clearances not to discuss research breakthroughs.

Problems in Drafting and Interpreting Arms Control Treaties.

This factor is one of the most analyzed, debated and written about of the seven considered. Questions such as what is a weapon?; what is a weapon of mass destruction?; and what are peaceful uses?; can swallow up entire conferences and colloquia. Unfortunately, the answers rarely become any clearer, notwithstanding the amount of time and effort spent in seeking these elusive solutions. Professor Gorove identified this problem in a panel discussion sponsored by the Association of United States Members of the International In-

¹²The Information Department of the USSR Embassy has purchased space in United States newspapers to promote Soviet views. See, e.g., *What Holds Back Progress at Geneva Talks?*, N.Y. Times, Aug. 13, 1985, at A-15, col. 1.

¹³Acknowledgement goes to Professor Christol for helping to popularize the term "media theater." See Christol, *supra* note 5, at 287-88. For the purposes of this paper, media theater describes the well-orchestrated press and public opinion blitz associated with arms control issues. This media theater, however, only occurs in the Western press and therein lies the imbalance (or opportunity, depending on one's point of view).

stitute of Space Law.¹⁴

One issue was the use of certain terms pertaining to arms control provisions of space agreements. Do 'weapons of mass destruction,' for example, include other than atomic, biological, and chemical (ABC) weapons? What was the meaning of "mass" — 1,500, 10,000 or more people? Were ASATs, lasers, or solar energy, weapons of mass destruction?

One answer might be that what constituted a weapon of mass destruction depended on the meaning attributed to the word 'mass' and the capability of a weapon to destroy such mass. While the precise quantity of a mass had not been determined, presumably weapons having destructive effects similar to ABC weapons could be included if the actual mass capable of being destroyed by a particular weapon met the definition.

The proposed answer, however, defines the term "mass destruction" as that which occurs when a mass is destroyed, and as Professor Gorove points out, no definition of a mass is available. Even if clear definitions for the English language terms such as "mass destruction," "weapon," and so forth were developed, they still would have to be translated into various other languages, thereby bringing about the same problem again, but in a different language. The above problem results from and/or gives rise to a certain amount of intentional vagueness in treaties. Another reason for imprecise terms is the ever present disagreement among the contracting parties as to specific treaty provisions. A well placed ambiguous word can work wonders in resolving an impasse. Vague treaty language, however, has a more sinister effect in that it can encourage noncompliance with the intent of the treaty. If a term cannot be defined with precision, then it is difficult to prove that a violation of a treaty provision controlled by that term is taking place. This can have serious consequences when the term is "weapon" or "peaceful uses."

The purpose of revisiting the well known shortcomings of agreements such as the Outer Space Treaty is to highlight the facts that vague language is endemic to arms control treaties, is often intended, and can help facilitate the intentional or negligent noncompliance with treaty provisions. More importantly, too much effort is expended in attempting to solve what may be an insoluble problem: establishing precise definitions for treaty language which probably was intended to be vague in the first place.

Beware the False Analogy.

When confronted with a new and uncharted field of law, scholars logically draw upon similar experiences in the past and use these analogies to help define the future course which the law should take in a given field. In space law,

¹⁴Comments by Professor Stephen Gorove, Chairman of the panel on Arms Control in Outer Space, held April 23, 1982, and published in the Proceedings of the 76th Annual Meeting of the American Society of International Law, at 284-85.

the analogies generally are of a territorial nature. The territory of space is compared to the high seas, Antarctica and other transnational regions on earth. For example, four authors refer to the Antarctic analogy in submitting papers under the topic "Conditions Essential for Maintaining Space for Peaceful Purposes" at the 27th Colloquium in Lausanne, while six papers invoke the Moon Treaty analogy.¹⁵ This demonstrates the extent to which analogies are utilized in discussing laws affecting certain activities in outer space.

Danger exists in overreliance upon analogies. Noted authors have advised caution in applying the maritime analogy to space law.¹⁶ Analogizing in the area of space weaponization is an especially tenuous proposition. Arguing that all weapons must be banned from space because they presently are banned from the moon¹⁷ and Antarctica¹⁸ overlooks one essential point. The moon and Antarctica have virtually no military value in preventing or conducting a conflict between the two superpowers. No strategic or tactical military disadvantage results from banning all weapons from the moon or Antarctica. There is little activity of military importance that could be done from the moon which could not be done faster and as efficiently from earth orbit, at least until such time as there are essential national assets on the moon to protect. Likewise, Antarctica (presently) is of little military value,¹⁹ since a military conflict between the United States and the Soviet Union primarily would be limited to the northern hemisphere, albeit with disastrous worldwide consequences. Manned bombers and ICBMs (but not necessarily FOBS)²⁰ must fly north from both the United States and the Soviet Union to reach their targets. Nations effectively have banned weapons from international regions which are not strategically important. The same cannot be said of areas which are strategical-

¹⁵As to the Antarctica analogy, see papers submitted by authors Bruhacs, Dekanozov, Kotlyarov, and Wulf. As to the Moon Treaty analogy for the dewatering of outer space, see papers submitted by authors Bruhacs, Christol, Dekanozov, Kopal, Piradov and Maiorsky, and He Qizhi.

¹⁶Diederiks-Verschoor, *Introduction to the Legal Aspects of Inhabited Space Stations*, 7 HASTINGS INT'L. & COMP. L. REV. 479, 480 (1984); Gorbil, *Orbiting Inhabited Space Stations: Selected International Legal Aspects*, 7 HASTINGS INT'L. & COMP. L. REV. 509, 518 (1984).

¹⁷Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, 34 U.N. GAOR Supp. (No. 20), U.N. Doc. A/3420 (1979).

¹⁸See *Antarctic Treaty*, *supra* note 4.

¹⁹ Although the [Antarctic Treaty] analogy is inexact, or even largely inappropriate, until the nations come to believe that space and the celestial bodies are as strategically unimportant as the Antarctic continent, the treaty regime needs some mention, in part because of the frequent use of its terms as a model for outer space.

S.H. LAY & H. TAUBENFELD, *THE LAW RELATING TO ACTIVITIES OF MAN IN SPACE* 61 (1970); see also Note, *Final Frontier: A Regime to Govern the Development of Celestial Body Resources*, 71 GEO. L.J. 1427, 1449-50 (1983). The discovery of natural resources in Antarctica and continuing efforts by certain nations to perfect their Antarctic claims promise to increase tensions when the present Antarctic Treaty is reevaluated at the end of this decade.

²⁰The Fractional Orbital Bombardment System (FOBS) is a Soviet weapons delivery system by which warheads can be launched into space to complete a partial orbit before being directed toward their targets. As a practical result of FOBS, the Soviets have the ability to strike targets within the United States from other than a northerly direction, thus complicating missile detection efforts. The Soviets tested FOBS from 1967-1971. The United States has no similar system. Reed & Norris, *supra* note 2, at 670.

ly critical, such as earth orbit²¹ and the high seas.²² As a result, the analogies actually argue *against* a comprehensive ban on all weapons from space, notwithstanding the provisions of the Antarctic Treaty and the Moon Treaty.

The Disarmament — Conflict Spectrum.

Complete disarmament is by no means the only way to achieve national security. This is well demonstrated by the fact that there has been no superpower disarmament *and* no superpower war for over 40 years. The existence of weapons need not lead to war and the ironic concept of MAD is that the existence of nuclear weapons leads to peace. As a result, the argument that we must ban weapons in space to preserve peace in space is not supported by the experience of the last four decades.

Alternatives to disarmament do exist. Assuming that total disarmament is at one end of the spectrum and that war is at the other end of the spectrum, at least two identifiable alternatives exist between these poles. One point along the continuum is arms control and another is arms cooperation. Three of these four alternatives are discussed below.

(1) Disarmament.

Placing disarmament at the opposite end of the spectrum from war makes the questionable assumption that disarmament necessarily will lead to peace. Since mankind historically has been a warlike animal, there is little data available to support or refute the claim that disarmament would bring about peace. One great advantage of disarmament is that it would make subsequent conflicts, if any developed, less violent and destructive. This must be balanced against the potentially severe consequences should one nation or organization renege on a disarmament agreement. Aside from these somewhat philosophical considerations, the greatest flaw of disarmament is that it is not practical. The well worn expression that "the genie is out of the bottle" unfortunately is an apt description. Not only is the nuclear genie out of the bottle, but so too is the space weaponization genie. Space weapons have been designed, built and tested; and there may be no more realistic chance for space disarmament than there is for a terrestrial disarmament.

(2) Arms Control

Since nations have failed at, or refused to attempt, disarmament, they devote their attention to arms control. Arms control is a limited and piecemeal form of disarmament, i.e., disarmament as to some specific place or a limita-

²¹See Outer Space Treaty, *supra* note 4.

²²One example of language which neither dewaterproofs nor demilitarizes the high seas is found in Article 141 of the Third U.N. Convention on the Law of the Sea, which provides: "The Area shall be open to use exclusively for peaceful purposes by all States, whether coastal or land-locked, without discrimination and without prejudice to the other provisions of this Part." A/Conf. 62/122 (Oct. 7, 1982).

tion on some type of weapon system. Occasionally, arms control efforts have had an impact by resulting in a treaty or other agreement. However, these limited arms control successes have not stopped the trend; and the trend is the most massive peacetime military build up by any two nations in the history of the world. Arms control agreements are products of the competition between the superpowers for national security and preeminence. The dominant factor in superpower relations has been competition; and arms control efforts become less significant when one considers the overall trend.

(3) Arms Cooperation.

Another rational position along the spectrum is arms cooperation. (The irrational alternative of war will not be considered.) Arms cooperation is the situation in which the superpowers work in collaboration toward the enhancement of mutual security. Stated differently, the superpowers engage in open and affirmative steps which contribute to the prevention of conflict. Instead of agreeing to *refrain* from some act, the superpowers agree to *perform* certain verifiable activities. Examples of arms cooperation do exist and more have been proposed. One concrete example is the Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War.²³ This bilateral agreement between the United States and the Soviet Union calls for affirmative steps to guard against the accidental or unauthorized use of nuclear weapons; creates a duty to notify the other party as to incidents involving a possible detonation of a nuclear weapon; and requires notification of missile launches which will extend beyond national borders.

A proposal also has been made to establish "nuclear risk reduction centers" in Moscow and Washington.²⁴ The centers would be staffed by personnel of the host country, but liaison officers of the other side would be permitted some degree of access. The centers would seek to prevent and minimize the effects of nuclear incidents through close communications and cooperation between diplomatic and military personnel of the United States and the Soviet Union.

Arms cooperation between the superpowers is analogous to the more prevalent examples of joint efforts in space exploration and exploitation. In 1979, American astronauts and Soviet cosmonauts met in space as part of the Apollo-Soyuz Test Project. Other less well-known but more scientifically

²³Agreement on the Prevention of Nuclear War, June 22, 1973, United States-U.S.S.R., 24 U.S.T. 1478; T.I.A.S. No. 7654. The United States and the Soviet Union reaffirmed and broadened this treaty recently by agreeing to notify each other in the event of a nuclear explosion or threat by a third party. This is significant in that it is a departure from the dogmatic superpower preoccupation with one another and signifies a growing awareness of possible threats which may emanate from nonsuperpowers. *U.S. and Russia Agree on One Nuclear Issue*, San Fran. Chron., July 6, 1985, at 1, col. 4.

²⁴A *Proposal to Reduce Risk of Nuclear War*, San Fran. Chron., Sept. 16, 1985, at 8, col. 5.

rewarding projects followed in a wide range of fields.²⁵

These examples show that the Soviet Union and the United States can cooperate in military affairs and space affairs. The same should be true with respect to space weaponization. Arms cooperation is a means by which the Soviet Union and the United States can learn more about each other and cease a costly arms race. It is a practical concept in that it can enhance the prospects of peace without threatening entrenched military interests. Instead of competing for security, the superpowers could just as well cooperate for security.

III. APPLYING THE INTERDISCIPLINARY FRAMEWORK TO THE SDI DEBATE

The section will apply the seven factor framework discussed previously in the general context of arms control agreements to the specific debate surrounding SDI. It should be stressed that SDI is a research program only. No actual decisions have been made as to the basing mode or method of operation. To ensure that some commonality of understanding exists in using the term SDI, a few words are in order.²⁶

The SDI defense would provide the United States with a means of destroying ICBMs and submarine launched ballistic missiles (SLBMs). It must be understood that, at present, the United States possesses no antiballistic missiles, nor any other defensive weapon system capable of stopping even one hostile missile. Some of the presently envisioned SDI systems would be unable to destroy enemy bombers or cruise missiles due to the low altitudes at which these delivery systems operate. Their low altitude provides them with a thick, shielding layer of atmosphere which dissipates the effects of the spaceborne SDI equipment. Whether SDI could destroy intermediate range ballistic missiles (IRBMs) or tactical missiles is another gray area at present. Thus, SDI would not render nuclear war impossible. Instead, it is intended only to remove the primary threat posed by strategic missiles.

SDI could be, for example, an unmanned spaceborne weapon system comprised of "layers" of satellites operating in earth orbit.²⁷ Each satellite could be capable of destroying several missiles during the boost phase, coast phase, or terminal portion of the missiles' course, but preferably prior to the time that the missiles release reentry vehicles (RVs) containing the nuclear warheads. RVs are small, hardened targets difficult to destroy, as opposed to a relatively slow moving ICBM in upward flight. The specific method by which SDI might destroy missiles is an ongoing debate. Leading proposals are the kinetic-kill

²⁵For detailed reviews of Soviet-American space cooperation agreements and projects, see Office of Technology Assessment, *U.S.-Soviet Cooperation in Space* (1985); Friedman & Sagan, *US/USSR Cooperation in Exploring the Solar System* (1985) [an internal report of the Planetary Society].

²⁶The following two paragraphs have been reprinted with minor modifications from March, *The Strategic Defense Initiative: Looking Beyond MAD*, 1 J. ASTROLAW 4-5 (1985). A copy of this issue of the J. OF ASTROLAW is on file with the AKRON LAW REVIEW.

²⁷*U.S. Explains How Star Wars Would Work*, San Fran. Chron., Nov. 4, 1985, at 1, col. 5.
Published by IdeaExchange@UAKron, 1986

method and directed energy method.²⁸ The kinetic-kill method includes metal objects fired at or exploded near the missile. The directed energy method includes particle beams and lasers fired at the target. In either case, an object or energy would be directed by an orbiting satellite toward a hostile missile.

SDI Must Be Considered as Part of the Overall Military Balance.

SDI, if ever deployed, would be an integral part of United States strategic forces and would have a direct impact on the U.S.-U.S.S.R. military balance. For these reasons, the SDI debate cannot be artificially separated from the overall arms control and arms cooperation debates merely because it operates in space and not on the ground. Placing the SDI weapons platform in space is indicative of the military's historical preoccupation with taking the high ground. Academicians, in reiterating the legal distinction between earth and space, are in direct competition with the military planners who relentlessly compete for every advantage over a potential adversary. Given the relative positions of academicians and military planners in both the Soviet Union and the United States, the prospect for expecting a comprehensive ban on all space weaponry appears remote.

It is difficult to support the claim that a nation should not be permitted to better deter against or defend itself from an attack from space. SDI is a non-nuclear defensive system designed to intercept an ICBM/SLBM attack; an attack *from space*. Space arms control advocates already have failed in the Outer Space Treaty to ban the primary threat to peace from space, the ICBM, since ICBMs are not *orbital* weapons of mass destruction. Now efforts have turned to banning the defensive answer to the offensive problem which was left unresolved by the Outer Space Treaty.

Interrelationship of International Law, MAD and SDI.

The few arms control treaties which exist to date have endorsed and codified the policies of MAD.²⁹ This is somewhat curious in that arms control treaties and MAD have the same goal, but seemingly inconsistent methods. Both seek to prevent conflict, but arms control treaties limit the quality and quantity of weapons, while MAD dictates that the capability of mutual assured destruction, i.e., efficient offensive weapons guaranteed to work, must exist and remain unthreatened. Under MAD, the germane question is whether SDI would contribute to or detract from mutual deterrence.

On the "pro SDI" side of the debate is the fact that a SDI system would have a great deterrent effect since it increases uncertainty in planning a preemptive strike. An attacker would not know which of its missiles would

²⁸ *Id.*

²⁹ See *supra* notes 7-10 and accompanying text.

reach their targets. Therefore, SDI need not be 100% effective to be a strong deterrent. SDI also would be of a non-nuclear defensive nature, must necessarily be a cheaper deterrent than offensive systems,³⁰ and would employ destructive force only against offensive military targets operating in or near space. On the “con” side are destabilizing effects of SDI, since the effectiveness of offensive missiles is called into question. Other “con” factors include cost, technological feasibility, and the possibility of a new round, albeit defensive, in the arms race. It also is argued that SDI would “extend the arms race into outer space,” but this is a somewhat specious argument since the present global mutual hostage situation of MAD respects no geographical borders and makes no legal status distinctions between earth and space. Space already is the primary medium of mass destruction and stationing weapons in space does not alter this fact.

The above pro and con arguments of SDI effects on MAD assume that MAD will remain a viable strategic policy well into the future. This is far from certain. The “M” in MAD stands for “mutual,” i.e., bilateral interaction between the United States and the Soviet Union. This two superpower situation is eroding rapidly due to the proliferation of nuclear weapons and delivery systems throughout the world.³¹ The People’s Republic of China, Great Britain, France and India are included in the nuclear club.³² Various other nations, some headed by dictators-for-life or martyrs-to-be, eventually will have the ability to threaten both Washington and Moscow with instant annihilation. As a result, Mutual Assured Destruction will be replaced by the even more ominous situation of “Multiple Assured Destruction,” in which various alliances and individual states attempt to deter one another from initiating a nuclear attack. Leaving one’s cities open to attack in such a situation would be a reckless course of action which only can be prevented by a *defensive* system.

With or without MAD, SDI would provide a nuclear shield against accidental or unauthorized launch of a missile by any party. The warning provided under the U.S.-U.S.S.R. bilateral agreement³³ of such an incident is of little use without a means to destroy the errant missile. United States’ missiles cannot be recalled following launch and, presumably, neither can those of the Soviet Union. In 1979, and twice again in June of 1980, United States strategic forces were placed at a high state of readiness due to computer errors at the United States Air Force Cheyenne Mountain complex. These situations pro-

³⁰A strategic defense system must be *survivable* and *cheaper* than offensive countermeasures. If not, it would promote an offensive weapons build-up. Talbott, *Upsetting a Delicate Balance*. TIME, March 11, 1985, at 17.

³¹*Nuclear Proliferation Worsening, Report Says*, San Fran. Chron., Nov. 29, 1985, at 32, col. 1. The increase in the proliferation of nuclear weapon-grade material and technology is even more ominous when one considers the simultaneous increase in terrorist activity. See *Increase in Terrorism Forecast for Year 2000*, San Fran. Exam., Dec. 1, 1985, at A-17, col. 1.

³²Perlman, *The Clouds Covering the Nonproliferation Treaty*. San Fran. Chron., Aug. 28, 1985, at A1, col. 1.

³³See *supra* note 23.
Published by IdeaExchange@UAKron, 1986

vided the author with first-hand experience concerning certain shortcomings of offensive nuclear weapons technology and operating procedures.³⁴ The Soviet Union also has had its share of mishaps in handling weapon systems. In January, 1985, an apparently unarmed Soviet naval cruise or target drone missile was fired accidentally toward Norwegian territory and subsequently crashed in Finland.³⁵ Such an episode must not be repeated with an armed ICBM. SDI would have the capability to destroy errantly launched nuclear-tipped ICBMs and SLBMs.

Assuming MAD remains an accepted policy in the future, the pertinent issue is whether SDI-type systems of the United States and the Soviet Union would enhance or detract from deterrence. More importantly, the usefulness of SDI-type systems must be considered in light of the fact that MAD soon may be an unacceptably reckless policy in a world full of nuclear weapon-possessing leaders having various degrees of rationality.

SDI and International Law Fora.

To many observers,³⁶ the central issue which must be addressed in applying existing international law agreements to the SDI debate is the effect of the ABM Treaty upon SDI deployment. Suffice it to say that the Reagan Administration has tendered some tenuous arguments explaining why it believes that SDI would not violate the spirit of the ABM Treaty. As the cited observers properly point out, the whole issue could be dissipated by the stroke of a pen should the United States choose to abrogate the Treaty as provided in Article XV.³⁷ This, of course, would create a tremendous propaganda opportunity for the Soviet Union, and favorable propaganda is the initial objective which is presently sought in international law fora with respect to SDI.

The superpower competition in space weaponry is more exemplified than regulated by the international law-making process. The SDI research program, which could not possibly lead to an operational antimissile capability for at least a decade, is not seen so much as a national security threat by the Soviet

³⁴On both occasions in 1980, the author was serving as commander of a Minuteman ICBM complex near Minot, North Dakota, at the time of the false alarms. These incidents help demonstrate that human and machine error can occur in missile operations. Having been well trained for such contingencies, however, the situation was not critical and built-in procedural safeguards worked as planned to prevent an unwarranted launch of missiles.

³⁵*Soviet Missile Over Norway*, San Fran. Chron., January 3, 1985, at 1, col. 6.

³⁶Smith, *supra* note 1, at 59-68; Meredith, *The Legality of a High-Technology Missile Defense System: The ABM and Outer Space Treaties*, 78 AM. J. INTL. LAW 418 (1984); Note, *Star Wars Meets the ABM Treaty: The Treaty Termination Controversy*, 10 N.C.J. INTL L. & COM. REG. 701 (1985).

³⁷The termination provision of the ABM Treaty, *supra* note 7, provides in part:

Each Party shall, in exercising its national sovereignty, have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme interest. It shall give notice of its decision to the other Party six months prior to withdrawal from the Treaty. Such notice shall include a statement of the extraordinary events the notifying Party regards as having jeopardized its supreme interest.

Union as it is an opportunity to lambast the United States in international fora. The Soviet Union's rhetoric that space must be free of weapons should be tempered by the facts that the Soviet Union pioneered the military uses of space³⁸ and has had its own sophisticated antiballistic missile program for years.³⁹ When the Soviet spaceborne ballistic missile defense program begins to bear fruit, the propaganda opportunity will diminish. At that point, realistic and rational debate can commence between the superpowers, most likely in a bilateral setting, as to what type of SDI treaty is practicable. Just as the Soviet Union scored propaganda points in international law-making fora with the perceived military uses of the Space Shuttle (before testing its own shuttle prototype and softening its anti-Space Shuttle rhetoric), so too will the Soviets play out the SDI propaganda opportunity before settling down to meaningful debate.

The SDI Media Theater.

International law fora are not the only theaters in which propaganda opportunities exist. Other important propaganda avenues include the highly competitive and largely unregulated Western press. The Soviet Union stands to gain much more by influencing the Western press and public concerning the SDI debate than it does by arguing in legal and academic circles, since negative public opinion or a change of Administrations in the United States can end SDI research more quickly than any negotiated agreement. An obvious imbalance exists since the Western press invites and publishes diverse opinions on SDI, while views in opposition to Soviet state policy are not permitted to be aired in the Soviet state-controlled media. This was especially evident during the 1985 Reagan-Gorbachev Summit, when Soviet representatives appeared on all three major television networks in the United States "to offer official wisdom on topics ranging from ICBMs to Soviet Jews."⁴⁰ By comparison, President Reagan's picture appeared on page 1 of *Pravda* for the first time in his presidency during the Summit.⁴¹ Attempts to manipulate and/or benefit from public opinion are factors only in the West; for only in the West can public opinion halt military research and development.

The Reagan Administration has easy access to the United States press in

³⁸Sputnik I established the precedent of "outer space overflight" and was launched by a military launch vehicle, clearly demonstrating a global nuclear strike capability. The Soviets reaffirmed this capability by testing FOBS. See *supra* note 20. The Soviet Union also has the only operational ASAT capability (at the time of this writing) and the world's only operational ABM system.

³⁹Aside from a ground-based ABM system near Moscow, the Soviets have aggressively pursued other ballistic missile defense programs, some of which are claimed by the United States to be in violation of the ABM Treaty. For example, the SA-12 surface-to-air missile has apparent ABM capability. In addition, the Soviet phased-array tracking radar near Krasnoyarsk also violates the ABM Treaty according to the United States. *Reagan: Soviets Cheating*, San Fran. Exam., Dec. 22, 1985, at A-16, col. 1; see also United States Department of State Bureau of Public Affairs, *SDI: The Soviet Program* (1985) [text of address by Paul Nitze, Special Advisor to the President and the Secretary of State on Arms Control Matters, before the Chautauqua Conference on Soviet-American Relations, Chautauqua, New York, June 28, 1985.]

⁴⁰Kelly, *Filling Up the Empty Hours*, TIME, December 2, 1985, at 36.

⁴¹Blum, *H. Played in Pravda*, TIME, December 2, 1985, at 36.

pushing for its SDI program, but a significant amount of coverage has been given to persons outside of the Warsaw Pact who oppose SDI as well. For example, one group of scientists has received much attention for espousing the view that a workable SDI system is technologically impossible to build and is not in the interests of world peace.⁴² A panel of arms control experts, including members of the Reagan Administration, also advised sharp cuts in SDI research.⁴³ Even two former secretaries of defense have criticized SDI openly in the press.⁴⁴ Despite this, 1985 polls have shown that the majority of United States citizens who have followed the SDI debate support the research project.⁴⁵

The SDI media theater within the United States has had mixed results, but one unfortunate general effect is that the impassioned media debate has tended to polarize issues instead of facilitating educated discussion. The extensive media coverage also will help intensify future congressional battles over SDI long before the two superpowers could ever hope to reach the stage of SDI negotiations. The opponents of SDI in Congress and in subsequent administrations will force various compromises and cutbacks in SDI research. If United States and Soviet negotiators ever meet in the future to attempt to draft a SDI treaty, SDI will be a vastly different program from that now envisioned by the current Administration. However, public opinion cuts both ways. Assuming that some SDI agreement eventually is negotiated between the superpowers, public and congressional opinion could prevent ratification, as was the case with SALT II following the Soviet invasion of Afghanistan.

Public opinion and the power of the free press are volatile tools which affect only one side of the SDI debate. More importantly, propaganda should not be confused with actual superpower positions.⁴⁶ When the hollow rhetoric

⁴² *700 Scientists Oppose Work on Star Wars*, San Fran. Chron., May 31, 1985, at 28, col. 1; *but see* Fossedal, *Star Wars and Scientists*, Wall St. J., June 14, 1985, at 24, col. 3, who argues that many anti-SDI scientists are engaging in political debate, not scientific analysis: "Of course, when one says 'scientists,' one means chiefly theoretical physicists at MIT or Cornell. The typical Boeing engineer or applied-electronics man in Silicon Valley — who probably has more expertise in this area than, say, Carl Sagan — supported Star Wars all along." (quoting James Fletcher.)

⁴³ Perlman, *Arms Experts Urge Cutback in Star Wars*, San Fran. Chron., March 15, 1985, at 1, col. 5.

⁴⁴ *Ex-Defense Chiefs Veto Star Wars*, San Fran. Exam., May 2, 1985, at A-20, col. 1.

⁴⁵ *Majority in Poll Backs "Star Wars" Weapons*, San Fran. Chron., February 25, 1985, at 1, col. 4; Gerstenzang, *Public Backs "Star Wars," Hopes for Arms Control*, L.A. Times, Nov. 19, 1985, at 1, col. 5.

⁴⁶ The distinction between a stance for propaganda purposes and an actual bargaining position was explained well by former Soviet leader Khrushchev in a conversation with Soviet diplomat (turned defector) Arkady N. Shevchenko:

'Never forget the appeal that the idea of disarmament has in the outside world. All you have to do is say, "I am in favor of it," and that pays big dividends.' Admitting with a grin that he neither expected the West to disarm completely nor contemplated such a course of action for the Soviet Union, [Khrushchev] added, 'a seductive slogan is a most powerful political instrument. The Americans don't understand that they only hurt themselves in struggling against the idea of general and complete disarmament. What they are doing is as futile as Don Quixote's fighting the windmills.'

ceases, meaningful negotiations may commence.

Problems Inherent in Attempting to Draft a Treaty Banning SDI from Space.

Should a treaty banning SDI from space be signed, problems in its interpretation most likely will be similar to those which for many years have surrounded the Outer Space Treaty and the ABM Treaty. This certainly does not mean that the nations will forego the perceived benefits of an SDI agreement simply because imprecise language could exist. Instead, the drafters might draw from the experience provided by these two previous treaties in anticipating specific problems which eventually may arise under an SDI treaty.

Classic definitional problems of space law will affect any SDI treaty. An agreement to ban a spaceborne ABM system depends upon the definition of "outer space."⁴⁷ A clear, concise definition has eluded scholars for years and future technology will only confound the situation. The Space Shuttle was one of the first steps in the technological blurring of the airspace/outer space demarcation line.⁴⁸ The United States Air Force Scientific Advisory Board presently is studying concepts for a transatmospheric vehicle which could take off and land like an aircraft, yet operate in space as a weapons-carrying platform.⁴⁹ Such a vehicle eventually could diminish the need to place SDI hardware permanently in orbit and, thus, could circumvent a ban on space based SDI systems. Likewise, one SDI proposal calls only for the placement of mirrors in orbit which would direct energy originating from earth toward a target.⁵⁰ This raises a second longstanding space law issue: What constitutes a weapon? Would an orbiting mirror which directs a laser beam at ICBMs be considered a weapon or even a weapon of mass destruction?

It also should be reiterated that SDI primarily is a *research* program. It would be virtually impossible to verify a ban on SDI research. A research ban was not attempted in the ABM Treaty and the Soviet Union has acknowledged the futility of attempting to prohibit SDI research for similar reasons.⁵¹ A SDI treaty could only pertain to operational testing and deployment.

If political and national security factors do permit meaningful SDI talks following the current "propaganda stage," negotiators will be confronted with the same unresolved space law questions, but in a new technological setting. SDI research cannot be limited by treaty and instead is primarily dependent upon domestic political and funding considerations. If SDI research eventually

⁴⁷S.H. LAY & H. TAUBENFELD. THE LAW RELATING TO ACTIVITIES OF MAN IN SPACE 36-51 (1970).

⁴⁸Sloup, *The NASA Space Shuttle and Other Aerospace Vehicles: A Primer for Lawyers on Legal Characterization*, 8 CAL. W. INT'L L. REV. 403, 435-52 (1978).

⁴⁹Canan, *Space Plan 2000*, A.F. MAG., July, 1985, at 70-73.

⁵⁰B. BOVA. ASSURED SURVIVAL 118-19 (1984).

⁵¹*Russia May Alter Stance on "Star Wars" Research*, San Fran. Chron., July 9, 1985, at 8, col. 4. At the time of this writing, the Soviet position calling for an absolute ban on all SDI research appears to have eroded even more.

does lead to an operational capability, the system need not be positioned permanently in space and this could circumvent a weapons ban in space. Such a system, whether ground based or spaceborne, might be banned by the ABM Treaty, but only if the signatories choose to keep the treaty in force; a decision which ultimately will be dictated by national security needs.

A Proposed Analogy for the SDI Debate.

The locational approach to the SDI debate, in which outer space is compared to the high seas or Antarctica, has serious drawbacks. The distinction between earth and space, assuming a line can be drawn, has much less meaning for national security purposes than it does for legal purposes. Past experience shows that nations have been unsuccessful in prohibiting weapons from areas of strategic importance and space is the most strategically advantageous location which exists. A locational analogy also fails because SDI need not be based in space, so a treaty banning weapons in space may not prohibit SDI. A better type of analogy for SDI is the weapon system approach. Stated differently, the SDI debate should be compared to another recent debate on a specific weapon system intended for use in space; the ASAT. The ASAT example is analogous to SDI in the following ways:

(1) Both SDI and ASAT are specific purpose weapon systems designed for use in space. Whether or not the weapon is "stored" in space before actual use is of some military importance, but of great political importance.

(2) The two superpowers have ongoing programs both in SDI-type systems and ASATs. These programs are at different stages of development, thus creating an imbalance which works against the conclusion of a treaty.

(3) Each weapon system has been the subject of well orchestrated propaganda battles waged in the Western press.

(4) With regard to the United States ASAT and SDI programs, the real limiting factors at the initial stages will be congressionally imposed and will not result from a U.S.-U.S.S.R. or multilateral treaty.

The factors cited above are the issues which must be addressed as part of SDI talks. The key factor will not be the physical location of the equipment. By focusing only on the basing mode of SDI, misleading territorial analogies become tempting and the proper focus of debate is lost.

SDI as a Means of Arms Cooperation.

Arms cooperation in the field of strategic missile defense between the United States and Soviet Union provides a realistic alternative to the placing of all reliance on arms control efforts as the means to ensure that outer space will be used exclusively for peaceful purposes. The example of ASAT shows that arms control efforts often leave a great deal to be desired. Bilateral cooperation

in the area of SDI-type systems could be effective because it would call for affirmative, verifiable steps taken by both nations to strengthen, not bargain away, national defense capability.

SDI arms cooperation between the United States and the Soviet Union might work in the following manner. Both nations would continue their research into spaceborne ballistic missile defense systems, since no agreement preventing such classified research could be verified. Concurrent with these research programs would be dialogue on finding a replacement for MAD. Both nations obviously acknowledge the present MAD policy, since they have built powerful retaliatory forces, yet have left their cities open to attack pursuant to the ABM Treaty. A central theme in this MAD-replacement discussion should be an analysis of the shortcomings of MAD in a multipolar nuclear power world; a world in which the prospects for nuclear accident and terrorism would be much higher than at present. Additional benefits of these discussions could be superpower realizations that (1) both the United States and the Soviet Union have the unfortunate and hazardous status of being nuclear hostages; and (2) MAD could be phased out by working to defend cities instead of working to assure their destruction.

If research into SDI-type systems proves that such a system is feasible, the United States and the Soviet Union could enter into a SDI deployment treaty. The deployment treaty could call for the orderly placement of United States SDI and Soviet ballistic missile defense satellites into pre-selected orbital slots. Again, such a treaty would be verifiable as the nations would affirmatively act in a conspicuous manner. As the defense satellites become operational, economic and political pressure to retire the decreasingly useful offensive systems would mount, *assuming a cheaper offensive system is not developed to overcome SDI*. It is essential that defensive weapons technology overtake and stay ahead of offensive weapons technology, in terms of both economy and effectiveness.

Older heavy ICBMs, such as the Titan II and the Soviet SS-18, could be used to place some of the defensive satellites into orbit. Using offensive missiles as launch vehicles would accomplish two objectives simultaneously. It would help build a mutual defense network in space, while reducing the nations' offensive weapons delivery capability. This corresponds to the more general philosophy behind SDI; a reduction of offensive forces and an increase in reliance on defensive technology. Utilizing these non-reusable boosters for peaceful, albeit military, purposes constitutes an affirmative, verifiable means to reduce their numbers.

The process of using ICBMs to place defensive satellites into orbit has other more subtle benefits. First, such an agreement to slightly reduce the missile force of each nation in a relatively productive manner could pave the way for more extensive agreements in the future, such as expending former

alert force ICBMs to launch purely scientific payloads into outer space. Second, it would convince the rest of the world that the superpowers are working toward replacing MAD with a mutual, rational defense policy.

It should be noted that two other problems exist in the deployment treaty scenario, aside from the threat of cheaper offensive systems which could flood the defensive system. The first problem is the instability which would exist as defensive weapons technology approaches, equals, and begins to surpass offensive weapons technology. This transitional period would be dangerous, since reliance on the traditional deterrent of offensive systems would be reduced and eventually replaced by a defensive shield. Once the shield is in place, however, the constant threat of nuclear strike from space, whether intended or accidental, whether from superpower or a terrorist nation, would be reduced greatly.

A second problem is the possibility that one defensive shield also could be used as an offensive weapon to destroy its counterpart. For example, if SDI could destroy Soviet ICBMs in space, presumably it could destroy the Soviet defensive satellite fleet as well and render the Soviet Union open to attack, whereas the United States would continue to be protected by SDI. Such a preemptive attack could occur in seconds. This problem has been studied in detail by the World Security Council in San Francisco, which has proposed a "non-trust" joint operation of SDI-type satellites by the United States and the Soviet Union.⁵² Such a non-trust system would give both nations control over all satellites, thus preventing a surprise, preemptive strike against the defensive satellites of any one nation.

Arms cooperation in the form of a deployment treaty would be consistent with the military philosophy of taking the high ground to enhance national security. It would also lead to the safer and more sane situation in which defensive weapons technology is superior to offensive weapons technology. In forty years, adversarial negotiations in the guise of arms control efforts have failed to deweaponize any strategic area and have failed to end the arms race. Arms cooperation, on the other hand, has been successful in the few instances in which it has been attempted. Expanding upon these efforts to deal with the problem and potential of spaceborne ballistic missile defense could end MAD, promote defensive systems as opposed to offensive systems, and promote a non-nuclear means for national defense.

IV. CONCLUSION

Arms cooperation between the Soviet Union and the United States is a realistic and practical means by which the peaceful nature of outer space can be

⁵²The purpose of the World Security Council (WSC) is to promote a militarily acceptable agreement preventing war in space. WSC supports an international coordinated system of interlocking communications satellites, safeguard systems, inspection teams and controlled deployment of defensive satellites to maintain peace in space.

maintained. A proposal to completely dewaterouter space is psychologically pleasing and has great propaganda value, but it ignores the basic facts that space is presently the best location from which to defend one's nation, that space weapons already exist, and that space weaponization is inextricably tied to earth weaponization. Even if an agreement to dewaterouter space were drafted, verification of this strategically crucial agreement virtually would be impossible, thereby promoting additional distrust between the superpowers.

Arms cooperation in developing defensive weapons technology would allow the superpowers to satisfy their national security needs in a more orderly and controlled way. If both superpowers had an effective and verifiable defensive shield in space, offensive weapons eventually would approach obsolescence. Arms cooperation does not rely on superpower trust or altruistic spirit. Instead, arms cooperation is wholly consistent with the hard realities of military strategy and national security, factors which heretofore have been in a strained coexistence with arms control efforts.

