HEINONLINE

Citation: Michel Bourbonniere, National-Security Law in Outer Space: The Interface of Exploration and Security, 70 J. Air L. & Com. 3 (2005) Provided by: Biddle Law Library

Content downloaded/printed from HeinOnline

Tue Mar 27 12:11:02 2018

- -- Your use of this HeinOnline PDF indicates your acceptance of HeinOnline's Terms and Conditions of the license agreement available at http://heinonline.org/HOL/License
- -- The search text of this PDF is generated from uncorrected OCR text.
- -- To obtain permission to use this article beyond the scope of your HeinOnline license, please use:

Copyright Information



Use QR Code reader to send PDF to your smartphone or tablet device

NATIONAL-SECURITY LAW IN OUTER SPACE: THE INTERFACE OF EXPLORATION AND SECURITY

MICHEL BOURBONNIERE¹

I. INTRODUCTION

THE RELATIONSHIP between law and technology is often misunderstood. It is important to realize that law never seeks to regulate technology, but rather aims to place order in the competing human interests that result from technology. International law is loyal to this premise, and so is the corpus of space law that has followed our astronauts into space, and which now regulates the access and use of outer space. Space possesses a fundamental paradoxical nature. Space exploration has its roots in the systemic competition of the superpowers during the Cold War. The Cold War produced the greatest national-security concerns our planet has ever seen. Nonetheless, it has also produced the greatest exploration project mankind has ever attempted, literally reaching for the stars. During the Cold War, the superpowers showed enlightened self-interest in producing normative instruments that now form the essence of our space law. As a result, both space national-security concerns and the dreams of space exploration for the good of humanity, were intrinsic within the genesis of space law. Although the Cold War is over, space national-security law endures, bearing this unshakeable paradox as the mark of its origins. The matrix of nationalsecurity law applicable to outer space has not only survived the Cold War, but also evolves within a new geo-political security environment. Space power, namely the ability of a state to use outer space in its civil, commercial, and military dimensions, is

¹ Legal Counsel, Canada, Department of Justice, PWGSC; Professor of Law Royal Military College of Canada, Kingston, Ontario, and at the International Institute of Humanitarian Law, San Remo, Italy; Fellow of the Centre for Hemispheric Defense Studies, National Defense University, Washington, D.C. The views, opinions and conclusions expressed in this article are those of the author alone and should not be construed as those of Canada, other individuals, or institutions.

gaining in importance.² In recent conflicts, space capabilities have proven to bring an asymmetrical advantage to military operations, irrespective of the terrain of the operation.³ This article will describe and analyze the international instruments that regulate the national-security concerns of states within outer space.

II. DISCUSSION

A. The Space National-security Legal Matrix

The international legal matrix that regulates national-security law in outer space can be divided into those normative instruments that are designed to apply during times of peace, and those that are designed to apply during an international armed conflict. The dichotomy of the public international normative matrix simply mirrors the U.N. Charter.⁴ The U.N. Charter prohibits the use of force by states within their international relations, stating that "[a]ll Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the Ünited Nations."5 Nonetheless, Article 51 of the U.N. Charter recognizes the inherent right of states to use force through selfdefense stating that "[n]othing in the present Charter shall impair the inherent right of individual or collective self-defense if an armed attack occurs against a Member of the United Nations."6

³ Air Force Space Command, *Strategic Master Plan FY06 and Beyond* (copy on file with author).

⁵ Id.

² It is interesting to note that, in discussing sea power, Admiral Mahan wrote that "the principal conditions affecting the sea power of nations [include] . . . Character of the government including therein the national institutions." ALFRED THAYER MAHAN, THE INFLUENCE OF SEA POWER UPON HISTORY, 1660-1783 28-29 (Little Brown 1939). This comment holds true for space power. For a more recent analysis of space power and liberal democratic values, see Everett Carl Dolman, Space Power and U.S. Hegemony: Maintaining a Liberal World Order in the 21st Century, in SPACE WEAPONS: ARE THEY NEEDED? 37 (John M. Logston & Gordon Adams eds., 2003).

⁴ U.N. CHARTER art. 2, para. 4.

⁶ U.N. CHARTER art. 51; see also THOMAS M. FRANK, RECOURSE TO FORCE, STATE ACTION AGAINST THREATS AND ARMED ATTACK (Cambridge University Press 2002) (analyzing legality of use of force); YORAM DINSTEIN, WAR, AGGRESSION AND SELF-DEFENCE (Cambridge University Press ed., 1994); Oscar Schachter, The Right of States to Use Armed Force, 82 MICH. L. REV 1620 (1984). Concerning self-defense in outer space, see JOHN COBB COOPER, Self Defence in Outer Space and the United Na-

The importance of this analytical dichotomy lies in the fact that, during times of international armed conflict, treaties are

tions, in EXPLORATIONS IN AEROSPACE LAW, SELECTED ESSAYS BY JOHN COBB COOPER 413 (McGill University Press 1968); Hamilton DeSaussure, et al., *Self-Defense-A Right in Outer Space*, 7 A.F.L. Rev. 38-45 (1965). More recently, Nandasiri Jasentuliyana argued that the treaty-structure encompassing "national technical means" circumscribed the right of self defense. He stated that:

While an attack on civilian satellites and space activities or on military systems protected under bilateral arms control agreements are not considered to fall within the meaning of self defence under article 51 of the Charter, there is no consensus as to whether an attack on other military systems, particularly space weapon systems, is covered under this right of self defence.

NANDASIRI JASENTULIYANA, INTERNATIONAL SPACE LAW AND THE UNITED NATIONS 102 (The Hague 1999). Nonetheless, the importance of space and space assets to the U.S. is articulated in *Department of Defense Directive* No. 3100.10 (July 9, 1999), which states at article 4.1 that:

Space is a medium like the land, sea and air within which military activities shall be conducted to achieve U.S. national-security objectives. The ability to access and utilize space is a vital national interest because many of the activities conducted in the medium are critical to U.S. national-security and economic well-being.

Id. Furthermore, the document stresses that "U.S. space systems are national property afforded the right of passage through and operations in space without interference," and then establishes the possible consequences of interference with US space assets, stating that "[p]urposeful interference with U.S. space systems will be viewed as a infringement on our sovereign rights. The U.S. may take all appropriate self-defense measures, including, if directed by the National Command Authorities (NCA), the use of force, to respond to such an infringement on U.S. rights." *Id.* art. 4.2, 4.2.1. The importance of space military operations is highlighted by the fact that the United States' decision to use force against space assets is made at the highest level of command, namely the NCA, according to the Chairman of the Joint Chiefs of Staff's instructions, stating that

"[m]ilitary or civilian space systems such as communication satellites or commercial earth-imaging systems may be used to support a hostile action" and that due to "significant political and economic repercussions, "[u]nless specifically authorized by the NCA, commanders may not conduct operations against space-based systems or ground and link segments of space systems."

National Command Authorities, U.S., Standing Rules of Engagement for US Forces CJCSI 3121.01A (Jan. 15, 2000) at C-4. The NCA is "[t]he President and the Secretary of Defense or their duly deputized alternatives or successors." See U.S., (JP 1-02) Joint Publication 3-16: Joint Doctrine for Multinational Operations (Apr. 5, 2000). In interpreting the U.N. Charter and its applicability to space, see Robert L. Bridge, International Law and Military Activities in Outer Space, 13 AKRON L. REV. 649, 659-60 (1979) (arguing that the concept of "territorial integrity" within article 2(4) "may refer not only to the land mass of a State, but also to its human and natural resources in space," and that "[i]nterference with the operation of a satellite . . . could be claimed by the owner State as the threat or use of force against its territorial integrity, giving rise to assertions of the right to act in self-defense . . . ").

generally suspended between belligerents. Publicists are, however, uncertain of the real effect of this dichotomy on space national-security law.⁷ Despite this doctrinal hesitation, the dichotomy remains nevertheless a useful analytical structure to understand the space national-security legal matrix.

1. Space National-security Peace Time Treaties

Treaties applicable to peacetime national-security in outer space can in turn be divided into three types: treaties that have been specifically designed to regulate space activities, treaties that were designed as confidence-building measures regulating peacetime military space-related activities, and treaties that regulate economic aspects of peacetime space activities.

It is far from clear how the obligations of these treaties would operate in a time of war. The question of suspension or continued operation of international legal undertakings during hostilities . . . focuses . . . on the intention of the parties . . . that is routinely not directly disclosed in the [treaties'] text or negotiating history.

David A. Koplow, Paper presented to a roundtable discussion of the Lawyers Alliance for World Security (Nov. 13, 2002) (unpublished paper available at Space Policy Institute, George Washington University).

⁷ The Vienna Convention on the Law of Treaties, May 22, 1969, 1155 U.N.T.S. 331. Article 62 recognizes that a fundamental change in circumstances can be invoked to either terminate or withdraw from a treaty. The initiation of armed hostilities is a fundamental change in circumstances between the parties. According to Professor Brownlie, although "[h]ostile relations do not automatically terminate treaties between parties to a conflict . . . in state practice many types of treaty [sic] are regarded as at least suspended in time of war [sic], and war conditions may lead to termination of treaties on grounds of impossibility or fundamental change of circumstances." IAN BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 614 (Clarendon Press 1979); see also Peter Malanchuk, AKEHURST'S MODERN INTRODUCTION TO INTERNATIONAL LAW 145 (7th rev. ed. 1997) (stating that "[o]riginally, war was regarded as ending all treaties between belligerents states, but this rule has been partially abandoned. Maybe it is not so much the rule which has changed, as the nature of the treaties between to which the rule applies"). According to the RESTATEMENT (THIRD) OF FOREIGN RELA-TIONS § 336(e) (1987), under traditional international law, the outbreak of war between states terminated or suspended agreements between them. However, not all agreements were necessarily affected. In particular, agreements governing the conduct of hostilities survived, since they were designed for application during war. However, the U.N. Charter prohibits the use of armed force between states except in limited circumstances, and was intended to outlaw war. RESTATEMENT (THIRD) ON FOREIGN RELATIONS § 905 cmt. g (1987). The consequence of these principles for the law as to the effect of hostilities on treaties remains uncertain. See Reporters' Note 4. The Vienna Convention refrains from taking a position on this question. See art. 73. On making this point concerning space treaties, Professor David A. Koplow writes that:

2005]

a. The Space Treaties

The Outer Space Treaty of 1967 ("OST") is commonly referred to as the Magna Carta of outer space and remains the fundamental treaty establishing national-security law in outer space.⁸ As a multilateral treaty, the OST establishes within its preamble a global homogeneous ethos for outer space, acknowledging the "common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes," stating that "the exploration and use of outer space should be carried on for the benefit of all peoples irrespective of the degree of their economic or scientific development," and stressing that the exploration and use of outer space shall be for "peaceful purposes."⁹

The OST codifies the fundamental freedoms of outer space in a negative libertarian perspective;¹⁰ namely, that "[o]uter space, including the moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind on the basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies," and that "[t]here shall be freedom of scientific investigation in outer space . . . and other celestial bodies, and States shall facilitate and encourage international co-operation in such investigation."¹¹ The OST prevents possible destabilizing claims of sovereignty or national appropriation in outer space, explicitly stating: "outer space, including the moon and other celestial bodies, is not subject to national appropriation."¹²

The applicability of public international law to outer space is formally codified within Article III of the OST, which states that space activities are to be conducted "in accordance with international law including the Charter of the United Nations, in the interest of maintaining international peace and security. . . .^{"13}

⁸ Treaty on the Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, Jan. 27, 1967, 720 U.N.T.S. 8843, Can. T.S. 1967 No. 19, T.I.A.S. 6347 [hereinafter OST]. According to the Committee of the Peaceful Use of Outer Space, the OST had ninety-eight State parties and had been signed by an additional twenty-seven States. *Report of the Legal Subcommittee*, U.N. GAOR, 42nd Sess., U.N. Doc. A/ AC.105/805 (2003) [hereinafter *Report of the Legal Subcommittee*].

⁹ OST, supra note 8.

¹⁰ For the difference between positive and negative liberty, see Isaiah Berlin, Four Essays on Liberty, (Oxford University Press 1967).

¹¹ OST, supra note 8, art. I.

¹² Id.

¹³ Id. art. III.

Consequently, the national-security implications of the OST must be interpreted in light of the U.N. Charter, which, a fortiori, is designed to have supremacy over subsequent treaties like the OST.¹⁴ The OST's normative deference to the U.N. Charter necessarily implies the application of Articles 2(4) and 51 to space national-security concerns; but to stop here would be a facile interpretative error. A thorough grasp of Article III of the OST requires a comparison of its terminology, combined with that of the U.N. Charter. In fact, an understanding of the words "international peace and security" within the Charter sense is a fundamental sine qua non criterion to understanding the importance of OST Article III, its function, and its relevance to national-security law in outer space. There are two reasons for this. First, the words "international peace and security" are found in the U.N. Charter.¹⁵ Secondly, the accepted interpretation of the term "security" within the U.N. Charter is that of a positive peace, presupposing the "activity which is necessary for maintaining the conditions of peace." This "necessary" military activity includes self-defense and activity that has been legitimized by the U.N. Security Council.¹⁶ Furthermore, the U.N. Charter explicitly defines the means to maintain international peace and security as the "effective collective measures for the prevention and removal of threats to the peace and for the suppression of acts of aggression or other breaches of the peace."¹⁷ Therefore, national-security law in outer space accepts military action in outer space as necessary and legitimate, whether it is pre-emptive or to maintain the conditions of peace.¹⁸ This pre-

¹⁴ See U.N. CHARTER art. 103 (containing a supremacy clause that gives it precedence over subsequent treaties).

¹⁵ U.N. CHARTER art. 1, para. 1.

¹⁶ The Charter of the United Nations: A Commentary 50 (Mosler et al. eds., Bruno Simma 1994).

¹⁷ U.N. CHARTER art. 1, para. 1.

¹⁸ Professor Cooper cogently argues for the applicability of the concept of preemptive self-defense in outer space beyond state territory by applying the Carolina case conditions, establishing "a necessity of self-defense, instant, overwhelming, leaving no choice of means and no moment of deliberation." COOPER, *supra* note 6, at 416. Pre-emptive use of force in space is advocated in recent USAF doctrine, stating, "[d]enying adversary access to space capability and protecting U.S. and friendly space capability may require taking the initiative to pre-empt or otherwise impede an adversary." *Counterspace Operations*, Air Force Doctrine Document 2-2.1, dated Aug. 2, 2004, at 31. The exercise of a unilateral right of preemptive strike is a cornerstone of the Bush doctrine. There is an important distinction to be made between the pre-emptive use of force, as described in the Carolina case, and pre-emptive use of force within the Bush doctrine. The Bush

mise underlies any correct discussion of national-security law in outer space.¹⁹

The Security Council has explicit authority to determine the existence of any threat to the peace, breach of the peace, or act of aggression.²⁰ The Security Council may then recommend or decide measures to be taken in accordance with Articles 41 and 42 of the U.N. Charter. Article 41 of the U.N. Charter allows measures not involving the use of armed force. This includes the possible interruption of "radio and other means of communication," which may include space assets.²¹ Under Article 42 of the U.N. Charter, the Security Council should first decide that Article 41 measures have proven inadequate before justifiably engaging in armed force.²² Under Article 39, a threat or breach of peace does not presuppose the use of force.²³ The Security Council, thus, has the ability to determine what could be a threat or breach of the peace in outer space.

Article 42 of the U.N. Charter lists possible measures that the Security Council may consider, including "demonstrations, blockade, and other operations by air, sea, or land forces of

¹⁹ Dr. Edward C. Welsh, the former Executive Secretary of the National Aeronautics and Space Council, commented on space and national-security in reference to the National Aeronautics and Space Act of 1958 disposition that "activities in space [should be devoted] to peaceful purposes for the benefit of all mankind" in the following terms:

That is a sound policy for any vigorous, peace-loving nation. Even though it is sound, however, I know also that it is sometimes misinterpreted. It does not mean that space has no military or defense uses . . . Nothing is more essential for peace than the capability to discourage or deter attack. In my view, we do not have a division between peaceful and non peaceful objectives for space. Rather, we have space missions to help keep the peace and space missions to help increase our ability to live well in peace.

See COOPER, supra note 6, at 415.

doctrine advocates the use of force "to prevent any possibility of a future attack, even where no prior attack has occurred and there is no certainty that a definite armed attack has been planned for the future." Christian Henderson, *The Bush Doctrine: From Theory to Practice*, 9 J. CONFLICT & SECURITY 3, 24 (2004). The Carolina case places the threshold for use of force at a much higher level than the Bush Doctrine by requiring an imminent and irresistible use of force, leaving the victim state with no other option. Although cloaked in "Carolina"-type vocabulary, the Air Force Doctrine Document appears to refer more to the Bush doctrine vision of pre-emption.

²⁰ U.N. CHARTER art. 39.

²¹ Id. art. 41.

²² Id. art. 42.

²³ Id. art. 39.

[70]

Members of the United Nations."24 Notably, "space" is absent from this list. Does this mean that the Security Council may not consider space military measures? Such a restrictive interpretation of Article 42 would probably be considered by most as *je*june. Considering that the sentence begins with "may include," one can proffer that the text presupposes that the list is indicative rather than exhaustive.²⁵ Consequently, the Security Council could consider space military measures. Lastly, the Members of the United Nations agree to accept and carry out the decisions of the Security Council, which could include performance of space military operations.²⁶ In addition, the words "threat to peace" are sufficiently broad so as to imply possible preemptive measures to protect either access to space, the space-medium, or space assets.²⁷ Considering the importance of the space-medium and of space assets to both military operations and to the global economy, preemption aimed at securing access to space and the use of space assets gains importance.²⁸

An important caveat must be stressed in the discussion of the right to the preemptive use of force in space. The right of preemption is akin to the double-edged sword of Damocles and could be used to justify strikes against U.S. space assets.²⁹ A preemptive strike in space, which would strictly adhere to the threshold on the use of force as imposed by the Carolina case, could arguably be justified. Nonetheless, it is difficult to conceive that an American unilateral strike in space, in accordance with the Bush doctrine, aimed at preventing a future attack where no prior attack has occurred, or where there is no cer-

²⁴ Id. art. 42.

²⁵ Id. Professor Lee has cogently analyzed the interface of the OST and the UN Charter and proffered that, unless the restrictions on space military activities established in the OST can be proven to be norms of *jus cogens*, the Security Council, under Article 42 of the Charter, has the power to override the OST restrictions on space military activities. See R.J. Lee, The Jus ad Bellum in spatialis: The exact content and practical implications of the Law on the Use of Force in Outer Space, 29 J. Space L. 93-119 (2003). Nonetheless, despite the correctness of Professor Lee's argument, it must be noted that from a practical perspective, given the voting history of certain Security Council members such as Russia, France, and China within both the UNGA and the Conference on Disarmament (CD), concerning the prevention of an arms race in outer space, the probability is to say the least weak, that the UNSC would override the OST restrictions on space military activities.

²⁶ Id. art. 25.

²⁷ Id.

²⁸ Id.

²⁹ Id. art. 51.

tainty or imminence of such an attack, could be in the national interest of the United States, or of its allies.³⁰ The applicability of such a right in space can only destabilize the delicate geopolitical balance. Thus, expansive interpretation of the U.N. Charter, which would justify such actions in space, should be discouraged. It is also important to note that, unlike Articles 39, 41 and 42 of the U.N. Charter, Article 51 rights are subject to a condition-precedent of an armed attack, or at least an imminent armed attack for anticipatory self-defense.³¹

Specific military activities are explicitly prohibited in outer space. Article IV of the OST codifies these restrictions through the establishment of a formal undertaking by States not to "place in orbit around the earth any objects carrying nuclear weapons or any kind of weapon of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner." It is important to note that Article IV does not ban the technology to "place in orbit," "install," or "station" such weapons,³² but only bans the act of doing so. Furthermore, Article IV suffers from definitional lacunae. The terms "nuclear weapon" and "weapons of mass destruction" are not defined. The technological evolution in space weaponry has created an interpretative polemic surrounding the interpretation of these terms.

Publicists, U.N. documents and State-practice all appear to constantly interpret the term "weapons of mass destruction" to include biological, radiological, and chemical weapons.³³ How-

While there is no indication in the treaty as to how many people must be affected to constitute a weapon of mass destruction, a group of 20 to 30 or less probably would constitute such a mass. If on the other hand, bacteriological and chemical weapons were to be used, even against a small group, then these weapons would seem to fall under the category of weapons of mass destruction.

Stephen Gorove, Arm Control Provisions in the Outer Space Treaty: A Scrutinizing Reappraisal, 3 GA. J. INT'L & COMP. L. 114, 115-16 (1973); Robert Bridge writes that "[t]he generally accepted view is that weapons of mass destruction include nuclear, chemical, and biological weapons." Bridge, *supra* note 6. The United Nations Commission for Conventional Armaments, resolved that "[w]eapons of mass destruction should be defined to include atomic explosive weapons, radioactive material weapons, lethal chemical and biological weapons and any weapons developed in the future which have characteristics comparable in destructive effect to those of the atomic bomb or other weapons mentioned above." G.A.

³⁰ Henderson, *supra* note 18, at 10.

³¹ U.N. CHARTER art. 51.

³² OST, *supra* note 8, art. IV. This normative lacuna was to be addressed between the U.S.A. and U.S.S.R. later in the *SALT II* and *START I* treaties.

³³ According to Professor Gorove:

ever, uncertainty has been expressed within doctrinal works as to how the term "weapons of mass destruction" applies to the new technologies involved in space weaponry.³⁴

Furthermore, although publicists generally agree on the applicability of the term to nuclear weapons in the classical sense, a doctrinal polemic also subsists concerning the applicability of the term to weapons which simply use nuclear power to generate their effects.³⁵

On another issue, according to OST Article IV (2), the "moon and other celestial bodies shall be used by all states parties exclusively for peaceful purposes."³⁶ Furthermore, Article IV (2) forbids the "establishment of military bases and installations, the testing of any kind of weapons, and the conduct of military maneuvers on the moon and other celestial bodies." Furthermore, the OST does not consider planet Earth as a celestial body.

³⁴ On the issue of sophisticated weapons Nandasiri Jasentuliyana comments: It would appear that Article IV does not prohibit laser and other directed-energy weapons that are discriminate in character. These weapons have very narrow and precisely directed beams to attack very specific targets, such as ballistic missiles in flight, and therefore are not weapons of mass destruction. While this argument may hold true for the laser and particle-beam weapons and small homing devices currently being studied as components of space-based BMD systems, there is disagreement as to its applicability to x-ray lasers, an important element of some of the plans for ballistic missile defence.

JASENTULIYANA, *supra* note 6, at 104. It is interesting to note that during the hearings on the OST at the Senate Foreign Relations Committee, then-Deputy Secretary of Defense Cyrus R. Vance stated, when questioned by Senator Cooper on the meaning of weapons of mass destruction, "I believe it would include such other weapons system as chemical and biological weapons, sir, or any weapon which might be developed in the future which would have the capability of mass destruction such as that which would be wreaked by nuclear weapons." See Bridge, *supra* note 6, at 656.

³⁵ JASENTULIYANA, *supra* note 6, at 104. Concerning the use of nuclear weapons, *see also Declaration on the Prohibition of the Use of Nuclear and Thermonuclear Weapons*, Res. 1653 (XVI), U.N. GAOR (1961).

³⁶ OST, *supra* note 8, art. IV (2).

Res. 18.8.48, U.N. GAOR, at 32, U.N. S/C.Doc. 3/32/Rev.1. (1948). However, on commenting the U.N. document Professor Bin Cheng offers a caveat, writing that "it should however be remembered that this was only a working definition and recommendation, and cannot be regarded as a binding definition of the expression under general international law, and still less an authoritative or authentic interpretation of the 1967 Space Treaty." BIN CHENG, STUDIES IN INTERNATIONAL SPACE LAW 530 (Clarendon Press 1997) [hereinafter CHENG STUDIES]; see also W.T. Mallison, The Laws of War and the Juridical Control of Weapons of Mass Destruction in General and Limited Wars, 36 GEO. WASH. L. REV. 308 (1967).

According to the OST, State Parties are required to undertake appropriate international consultation before proceeding with any activity or experiment should the State Party have reason to believe that such activity or experiment which is to be carried on in outer space by the State of its nationals would cause potentially "harmful interference" with the "peaceful exploration and use" of outer space by other State Parties.³⁷ The term "harmful interference" is not defined in the OST. Could the term "harmful interference" be interpreted to encompass space weapons? Such an expansive interpretation of the term would most probably be considered incorrect, as the limitation of space weaponry is specifically dealt with in Article IV. In accordance with a "lotus" type analysis, space-capable weaponry is not specifically prohibited in Article IX and a fundamental premise of international law is that what is not specifically prohibited is permitted.³⁸ Could the term be interpreted as covering belligerent rights and the effect of space weapons? Although the term "activity" can, from a grammatical perspective, be interpreted as encompassing belligerent rights, such an interpretation would most probably be considered as *jejune*, as the OST was not meant to change the law governing the means and methods of warfare. Nonetheless, it is reasonable to argue, and most would probably agree, that the term could encompass effects that may result from the testing of space weapons in outer space. Thus, should a State Party have "reason to believe" that the testing of such weapons "would cause potentially harmful interference," the State Party would likely have to undertake appropriate international consultations before proceeding with the tests.³⁹ However, because the concept of "harmful interference" is not defined, states have somewhat of discretionary latitude in their actions. It can also be cogently argued that the obligation to proceed with consultations presupposes a reciprocal duty to cooperate on the part of the affected State Party. At the very least, the affected State Party likely has, to a degree, a duty to respond to the consulting State Party.⁴⁰

The adjective "appropriate" further qualifies the "international consultations" to be held.⁴¹ Thus, one may ask what are

³⁷ Id. art. IX.

³⁸ Steamship Lotus (France v. Turkey) P.C.I.J. (Ser. A) No. 10 (1927).

³⁹ OST, *supra* note 8, art. IX.

⁴⁰ Concerning the duty of response in negotiations, see North Sea Continental Shelf, 1969 I.C.J. 3, at 47 (Feb. 20).

⁴¹ Id.

"appropriate international consultations" when the discussion concerns military activities?⁴² Military activities affecting national-security are usually shrouded with a penumbral veil of secrecy and discussed only with allies.⁴³ The OST remains silent on this issue. The OST does not require bilateral or multilateral consultations; it also does not require all State Parties to the OST be consulted, it is only the State Party whose space activites are affected that must be consulted.⁴⁴ Briefly stated, State Parties are free to determine the form and manner of the consultations which remain an *ad hoc process*.

From a historical perspective, the duty to consult can be seen as an attempt by the two two major Cold War protagonists to improve communications in order to reduce international tension and the possibility of conflict. The duty to consult created a regime of preventative diplomacy in outer space, and considering the importance of the space medium, must be exercised in good faith.

Article IX of the OST is not the only dispute resolution mechanism applicable to outer space. Should Article IX preventative diplomacy fail, State Parties remain bound through Article I of the OST to seek a peaceful resolution to their dispute in accordance with Article 2(3) and Chapter VI of the UN Charter. A dispute in outer space may conceivably escalate. Should there be a dispute in outer space, the continuance of which would likely endanger the maintenance of international peace and security, the parties to the dispute, in accordance with Article 33 of the UN Charter would first of all have a duty to seek a solution by negotiation, inquiry,⁴⁵ mediation, conciliation, or judicial settlement. Should the mechanism of Article 33 of the UN Charter fail to peacefully resolve the dispute, the institutional

14

⁴² Id.

⁴³ Id.

⁴⁴ Id. Consultations in a bilateral setting are relatively easy to achieve. On the otherhand, consultations in a multilateral environment should perhaps be institutionalized. It is also difficult to clearly determine the extent and respect of a duty to consult. As one publicist astutely observed, "in the Lake Lanoux case the tribunal noted that it is a delicate matter to decide whether such an obligation (consultation) has been complied with . . . If consultation is to be compulsory . . . the circumstances in which the obligation arises, as well as the content need careful definition, or allegations of failure to carry out the agreed procedure may itself become a disputed issue." J.G. MERRILS, INTERNATIONAL DISPUTE SETTLEMENT 6 (3d ed. 1998).

⁴⁵ For inquiries, see The Hague Conventions and Declarations of 1899 and 1907 41 (J.B. Scott ed., 1915).

responsibility of the UN vis-à-vis a space dispute could be initiated. In accordance with Article 33 of the UN Charter, the United Nations Security Council (UNSC) could decide to investigate any dispute or situation in outer space which might lead to international friction or give rise to a dispute in order to determine whether the continuance of the dispute or situation is likely to endanger the maintenance of international peace and security. Such an investigation by the UNSC likely would have a binding effect upon the State Parties in accordance with Article 25 of the UN Charter. Furthermore, in accordance with the "implied powers" doctrine, although less binding in effect, both the United Nations General Assembly (UNGA) and the Secretary General (SG) could also investigate.⁴⁶

Lastly, it must be noted that a State Party which has "reason to believe" that its peaceful use and exploration of outer space may be subject to potentially harmful interference may request consultation concerning the activity or experiment.⁴⁷

Although the OST is a brilliantly written document, its silence is equally conspicuous. In addition to its definitional taciturnity, the OST never mentions space debris, which is an important issue to space national-security.⁴⁸ Nonetheless, the OST does contain norms applicable to space debris, such as Article III in its reference to "exploration" and "use," Article VII in reference to state liability, Article VIII in reference to ownership of "component parts," Article IX with "harmful interference," and, finally, Article XI which calls upon the states to "inform the Secretary General of the U.N." of "the nature, conduct, location and results" of its activities.⁴⁹ Although not part of the OST, it is interesting to note that the Inter-Agency Space Debris Coordination Committee ("IADC"), a non-military international governmental forum, produces voluntary guidelines for the mitigation of space debris.⁵⁰

The concept of "peaceful purposes" is one of the most important principles established within the OST.⁵¹ It is also a concept

⁴⁶ See Simma, supra note 16, at 515.

⁴⁷ Id.

⁴⁸ OST, supra note 8.

⁴⁹ Id. arts. III, VII, VIII, IX, XI.

⁵⁰ Inter-Agency Space Coordination Committee, *IADC Space Debris Mitigation Guidelines* (Oct. 15, 2002), *at* http://www.iadc-online.org/index.cgi?item=docs_pub (last visited Aug. 30, 2005).

⁵¹ From a historical perspective, McDougall notes that President Eisenhower was one of the first and highest officials to use the expression "peaceful" to mean "non-military." In a letter sent to the Soviet Premier, President Eisenhower pro-

that has been besieged by a multi-dimensional interpretative polemic. The interpretative problem with the expression "peaceful purposes" lies in the fact that the expression is only found in the text of the treaty in Article IV as it relates to the moon and other celestial bodies, and that it is only referred to otherwise in the preamble of the OST. The first dimension of the polemic lies in the interpretative scope that is to be applied, namely, whether an expansive or a restrictive interpretation is to be given to Article IV. Under a restrictive interpretation, the concept of "peaceful purposes" would only be applicable to the moon and other celestial bodies and not to "outer space."52 On the other hand, an expansive interpretation would enlarge the scope of "peaceful purposes" to apply to outer space. The practice of States indicates that an expansive interpretation is to be applied.⁵³ The second dimension of the interpretative polemic lies in the meaning of "peaceful purposes." Within this second interpretative dimension, the point at issue is whether the adjective "peaceful" describes the means or the ends sought by the space activity.⁵⁴ The practice of States indicates that the adjec-

⁵² Richard A. Morgan, Military Use of Commercial Satellites: A New Look at the Outer Space Treaty and "Peaceful Purposes," 60 J. AIR L. & COM. 237, 239 (1994).

⁵³ See GENNADY ZHUKOV & YURI KOLOSOV, INTERNATIONAL SPACE LAW 53 (Praeger 1984) (arguing that the Outer Space Treaty requires "total neutralization and demilitarization of celestial bodies and [only] partial demilitarization of outer space").

⁵⁴ See Ivan A. Vlasic, The Legal Aspects of Peaceful and Non-Peaceful Uses of Outer Space, in PEACEFUL AND NON-PEACEFUL USES OF SPACE PROBLEMS OF DEFINITION FOR THE PREVENTION OF AN ARMS RACE 37, 39 (Taylor & Francis 1991) (indicating that Soviet publicists preferred to interpret "peaceful" as meaning "non military," and that they had never deviated from this argument. C.Q. Christol provides an excellent description of the drafting history of the OST with the possible interpretations of "peaceful purposes" and the various proposals of the U.S.A. and U.S.S.R. See CARL QUIMBY CHRISTOL, THE MODERN INTERNATIONAL LAW OF OUTER SPACE 22-26 (Pergamon Press 1982). Professor Christol also cogently asserts that Article IV of the OST "did not invalidate the inherent right of national self-defense pursuant to customary international law and Article 51 of the U.N. Charter." Id. Professor Bin Cheng has critically analyzed the interpretation of "peaceful" as meaning non aggressive. See Bin Cheng, The Legal Status of Outer Space and Relevant Issues: Delimitation of Outer Space and Definition of Peaceful Use," 11

posed that the U.S.A. and U.S.S.R. "agree that outer space should be used only for peaceful purposes... Both Soviet Union and the United States are now using outer space for the testing of missiles designed for military purposes. The time to stop is now." McDougall then argues that "[t]his statement rather clearly implies from its reference to the 'testing of missiles designed for military purposes,' that Mr. Eisenhower was using the term 'peaceful' in supposed contradistinction to 'military uses' of space." *See* MYRES S. McDOUGAL ET. AL., LAW AND PUBLIC ORDER IN SPACE 395 (Yale University Press 1963).

tive "peaceful" qualifyies as the ends sought rather than the means used, thus referring to non-aggression.⁵⁵ In concluding

⁵⁵ From a historical perspective, the U.S. has consistently asserted that "peaceful" means "non-aggressive." The U.S.S.R. had also initially argued that the use of surveillance satellites was an aggressive use of outer space. Surveillance satellites were viewed by the U.S. as non-aggressive. Verification in future treaties, such as SALT and the ABM Treaty, settled this dispute, establishing the legitimacy of surveillance satellites through the concept of "national technical means." See Bridge, supra note 6, at 658-60. For an excellent review of certain U.S. military spy flights, such as the U-2 incidents, or the RB-47 and their implications in international law, see CHENG STUDIES supra note 33, at 577. See also Michel Bourbonniere, Espionage and Overhead Imagery, 8 CARIBBEAN L. REV. 287 (1998). Furthermore, the U.S. position is clearly stated in the National Aeronautics and Space Act of 1958, which established U.S. policy in these terms: "The Congress hereby declares that it is the policy of the United States that activities in space shall be devoted to peaceful purposes for the benefit of all mankind." 42 U.S.C. § 2451(a) (1988). In addressing Congress on the establishment of NASA, President Eisenhower stated that the "concern of our Nation that outer space be devoted to peaceful and scientific purposes." See Walter D. Reed & Robert W. Norris, Military Use of the Space Shuttle 13 AKRON L. REV. 665, 674 (1979). Reed and Norris further cite the May 11, 1978, Presidential Directive establishing U.S. space policies, wherein President Carter stated the U.S. "is committed to the exploration of outer space for peaceful purposes and the benefit of all mankind." The Directive also provided that the U.S. will use space for self-defense and to support certain military uses. See also P.G. Dembling, The Evolution of the Outer Space Treaty 33 J. AIR L. & COM. 419, 434 (1967). Dembling argues that "any military use of outer space must be restricted to non-aggressive purposes in view of Article III, which makes applicable international law including the Charter of the United Nations." China's position on interpreting the OST is as follows:

According to the 1967 [OST], outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means. 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. The establishment of military bases, installations and fortifications, the testing of any type of weapons, and the conduct of military manoeuvres on celestial bodies is forbidden.

J. SPACE L. 89, 104 (1983) (stating that "aggressive' acts are contrary to international law and the Charter of the United Nations, particularly Article 2(4) of the Charter, not only on the moon . . . but also anywhere in the universe. . . [and] would therefore, be prohibited in outer space as a whole."). See also CHENG STUD-IES, supra note 33. See also JASENTULIYANA, supra note 6, at 104 (stating that the OST ". . . left open the possibility of the placing in outer space of weapons other than nuclear weapons and . . . chemical and biological weapons. The gap thus left has recently acquired practical importance in view of the development of anti-satellite (ASAT) weapons and research into directed-energy weapons. . . either for anti-satellite purposes or for ballistic missile defence."). See also G. Lafferanderie, La notion d'utilisation pacifique dans le droit de l'espace Rev. fr. dr. aérien 427 (1985).

the section dealing with the OST, it is important to note that the OST has received wide accession by the international community.⁵⁶

The Registration Convention⁵⁷ codifies a practice of recording space objects launched into earth orbit or beyond. The

Indeed, the 1967 Outer Space Treaty did ban placing all the kinds of WMDs in space and on celestial bodies, but today there are no legal barriers whatsoever to the placement in orbit round the Earth of any other weapons... It goes without saying that "military" outer space has a right to exist to the extent that it serves the aim of maintaining and consolidating strategic stability and is being used in the first place as an instrument ensuring a reduced nuclear war risk and control over the implementation of disarmament agreements. We, naturally, take into account the circumstance that space technology achievements are being actively used for auxiliary military purposes such as communication, navigation, and global positioning systems. But this does not at all mean that military activities in space should be used for the achievement of force superiority.

Press Release, Ministry of Foreign Affairs of the Russian Federation, Interview with Alexander Yakovenko by Interfax (July 3, 2002), *available at* http://www.ln. mid.ru/brp_4.nsf/0/64579c113723652b43256beb00522a2e?OpenDocument (last visited Aug. 30, 2005).

⁵⁶ It has been argued that the following principles, which originate from the OST, have been so widely accepted that they are generally regarded as constituting binding customary international law, even for non-parties to these agreements:

- Space is free for exploration and use by all nations. It is not subject to national appropriation by claim of sovereignty, use, occupation, or any other means;
- 2) Activities in space shall be conducted with due regard for the interests of other states;
- 3) Space activities are subject to general principles of international law, including the U.N. Charter.

See U.S. Department of Defense, Office of the General Counsel, An Assessment of International Legal Issues in Information Operations (May 1999) (unpublished).

⁵⁷ Convention on the Registration of Objects Launched into Outer Space, Jan. 14, 1975, 1023 U.N.T.S. 15, 28 U.S.T. No. 8480. CTS 1976/36, T.I.A.S. 8480 [hereinafter Registration Convention]. According to the Report of the Legal Subcommittee, *supra* note 8, the Registration Convention had forty-four State Parties and had been signed by an additional four States.

. .

18

See Nuclear Threat Initiative, Letter from the Permanent representative of China to the Conference on Disarmament addressed to the Secretary-General of the Conference transmitting a Working Paper entitled "China's Position on and Suggestions for ways to address the Issue of Prevention of an Arms race in Outer Space at the Conference on Disarmament" (Feb. 9, 2000), available at http://www.nti.org/db/china/engdocs/cparoswp.htm (last visited Aug. 30, 2005). Alexander Yakov-enko, the Official Spokesman of Russia's Ministry of Foreign Affairs, recently stated that

practice was initially established in a 1961 UNGA resolution.58 Registration is done with the Secretary General of the United Nations who maintains such a register.⁵⁹ The registry records indicate the launching State or States, the appropriate designator of the space object or its registration number, the date and territory or location of launch, basic orbital parameters, and the general function of the space object.⁶⁰ States enjoy a great deal of latitude as to the timing of the registration, which is to be completed "to the greatest extent feasible and as soon as practicable." This latitude in the timing of the registration is useful for certain military or classified satellites. Article III(2) ensures the public accessibility to these records, requiring "full and open access in this Register." Furthermore, launching states must also maintain a national registry of space objects launched into earth orbit or beyond.⁶¹ The practice of having launching states register foreign payloads has been mixed.⁶² In an effort to clarify the practice, and believing that states should implement their obligations under the convention, the United States State Department does not register payloads either owned or controlled by another State's private or governmental entities, and launched from U.S. territory.63

The Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space ("Rescue Agreement") articulates within its preamble the duty of States for the "rendering of all possible assistance to astronauts in the event of accident, distress or emergency landing, the prompt and safe return of astronauts, and the return of objects launched into outer space."⁶⁴

Given the nature of the obligations established within the Rescue Agreement, its application between belligerents is problem-

⁵⁸ U.N. Res. 1721, U.N. GAOR (XVI) B. Establishing the United Nations Registry of Launchings (adopted Dec. 20, 1961).

⁵⁹ Registration Convention, *supra* note 57, art. IV.

⁶⁰ These are the nodal period, inclination, apogee, and perigee of the orbit.

⁶¹ Registration Convention, *supra* note 57, art. II.

⁶² United States Criteria for the Registration of Space Objects (Nov. 2002), (on file with author).

⁶³ In the case of a non-U.S. payload, the owner/operator should ensure that its payload is included on the registry of a state party to the convention other than the United States.

⁶⁴ Agreement on Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space, Apr. 22, 1968, T.I.A.S. 6599, CTS 1975/6 [hereinafter Rescue Agreement]. According to the Report of the Legal Subcommittee, *supra* note 8, the Rescue Agreement had eighty-eight State Parties and had been signed by twenty-five additional States.

atic. Perhaps the easiest solution to the conundrum of applying the Rescue Agreement between belligerents is simply the suspension of the Rescue Agreement between belligerents. On another level, it can be cogently argued that, during an international armed conflict, the Rescue Agreement is bifurcated along a functional line.⁶⁵ Under a functional interpretation, the Rescue Agreement can be seen as applicable to civil space activities but not to military actors or to civilians who actively take part in hostilities. Thus, the Rescue Agreement would not affect belligerent rights. In other words, the Rescue Agreement would not impinge upon the rights of a belligerent, such as the right to capture space assets or astronauts, nor would it affect the status of prisoners of war as defined in the Geneva Conventions, or the belligerent right of angary.⁶⁶ The right of angary is defined as "a right of belligerents to destroy, or use in case of necessity, for its purpose of offense and defense, neutral property on their territory, or on enemy territory, or on the open sea."⁶⁷ Considering the applicability of the right of angary on the "open sea," the right of angary could certainly be invoked in outer space, which has a similar legal status to that of the high seas.

Article 2 of the Rescue Agreement stipulates that if "owing to accident, distress, emergency or unintended landing, the personnel of a spacecraft land in territory under the jurisdiction of a Contracting Party, it shall immediately take all possible steps to rescue them and render them all necessary assistance."⁶⁸ Furthermore, in case of such event, the Contracting Party must notify both the launching authority and the Secretary General of the United Nations of the steps it is undertaking and its progress. The Launching Authority is also required to assist in these matters.

In cases occurring on the high seas, or in any other place not under the jurisdiction of any State, those Contracting Parties that are in a position to extend assistance shall do so. The assisting Contracting Parties must also inform both the launching au-

⁶⁵ Rescue Agreement, *supra* note 64.

⁶⁶ Id.

⁶⁷ OPPENHEIMER, INTERNATIONAL LAW 365 (David McKay Co. Inc. 1958); see JAMES MOLONY SPAIGHT, AIR POWER AND WAR RIGHTS 463-65 (Longmans, Green & Co. ed., 1924) (arguing that "[t]he right can only be exercised in face of an absolute necessity for the use of the neutral property for the belligerent's purposes, and in all cases the neutral owner must be fully indemnified").

⁶⁸ Rescue Agreement, *supra* note 64, art. 2.

2005]

thority and the Secretary General of the United Nations of their efforts and progress. Upon the request of the launching authority, objects launched into outer space or their components must be returned.⁶⁹ Expenses are to be borne by the launching authority.

A further parsing and deconstruction of Article 2 of the Rescue Agreement reveals additional arguments supporting the applicability of the functional bifurcation interpretation premise. Within the plain and ordinary meaning of the term "accident" is an unfortunate incident, which happens unexpectedly and unintentionally by chance, or without apparent cause. Similarly, the term "distress" is the state of being in a dangerous situation or circumstance resulting from a technical malfunction or "accident."⁷⁰ It can be argued that both of these terms, by definition, exclude incidents or situations that result from the deliberate and legitimate exercise of a belligerent right, such as the targeting and shoot-down of a satellite or spacecraft. The scope of the Rescue Agreement can thus be reasonably limited to civil "accident, distress, emergency or unintended *landing*" rather than military objectives.

It can also be proffered that the Rescue Agreement does not negate the right of an astronaut to ask for asylum. Should an astronaut request asylum, elementary considerations of humanity should prevail over the treaty obligation to return the astronaut to the launching authority.⁷¹

The Convention on International Liability for Damage Caused by Space Objects⁷² establishes a normative regime for state liability pertaining to national activities in outer space. Article I limits the possible damages recoverable under this treaty to damages for "loss of life, personal injury or other impairment of health; or loss of or damage to property of States or of persons, natural or juridical or property of intergovernmental orga-

⁶⁹ Id. art. 5.

⁷⁰ Id.

⁷¹ Corfu Channel Case (Merit's), 1949 I.C.J. 4 (Apr. 9, 1949). It is to be noted that elementary considerations of humanity are more stringent in peace time than during times of international armed conflict.

⁷² Convention on International Liability for Damage Caused by Space Objects, Sept. 1, 1972, U.N.T.S. 187, Can. T.S. 1975 No. 7, 24 U.S.T. 2389, T.I.A.S. No. 7762. [hereinafter Liability Convention]. According to the Report of the Legal Subcommittee, *supra* note 8, as of Jan. 1, 2003, the Liability Convention had eighty-one State Parties and had been signed by twenty-six additional States.

nizations."⁷³ It is important to note that economic damages, such as loss of revenue, are not recoverable.

Article II codifies a regime of strict liability, stating that "[a] launching State is absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight."⁷⁴

Article III codifies a liability regime based on fault or negligence, stating that "[i]n the event of damage being caused elsewhere than on the surface of the earth to a space object of one launching State, or to persons or property on board such a space object by a space object of another launching State, the latter shall be liable only if damage is due to its fault or the fault of persons for whom it is responsible."⁷⁵

Article V creates joint and several liability in the case where two or more states jointly participate in the launching of the space object.⁷⁶ Article VI establishes a possible exoneration from the absolute liability, should there be gross negligence, or from an act or omission done with intent to cause damage on the part of the Claimant State.⁷⁷ Furthermore, Article VI prevents exoneration from liability, should the damage result from activities which are not in conformity with international law, including the U.N. Charter and the OST.

The applicability of the Liability Convention between belligerents is also problematic. During an international armed conflict, a belligerent does not pay compensation for damages caused by legitimate military objectives. It can be argued that the Liability Convention is incompatible with the exercise of belligerent rights and would most probably be considered suspended between belligerents. The scope of applicability of the Liability Convention to damages caused by legitimate military operations to space assets belonging to neutral states is a complex issue and remains debatable. On this issue, it is important to note that the exonerations outlined in the Liability Convention are not exhaustive and do not preclude a state from invoking generally-accepted defenses, or excuses from liability, such as consent, self-defense, counter-measures, force majeure, distress and necessity. The liability concerning the erroneous

⁷³ Id.

⁷⁴ Liability Convention, supra note 72, art. II.

⁷⁵ Id. art. III.

⁷⁶ Id. art. V.

⁷⁷ Id. art. VI.

targeting of a satellite under the jurisdiction and control of a neutral State remains a complex issue. In the past, States have paid compensation for erroneously targeting assets of a neutral state.⁷⁸ However, State practice on this matter appears to lack the necessary *opinion juris* to create a legal obligation to pay damages. The practice appears to be one more of comity.⁷⁹

The evolution in the use of outer space, in both the commercial sector and the military sector, is also challenging the liability structure of this convention. For example, in dealing with concerns on the commercial use of GPS signals, legal publicists do not agree on the applicability of the Liability Convention to aviation accidents caused by erroneous satellite navigation signals.⁸⁰

79 See Articles 20-25 of the ILC's Articles of State Responsibility. In the case concerning the Gabeikovovo-Nagymaros Project (Hung. v. Slovk), 1997 I.C.J. 92 (Sept. 25, 1997), Article 33 of ILC's Draft Articles on State Responsibility was said to reflect customary international law. Commenting on state liability, Louis Henken stated, "[a] lawful measure of self defense may also involve conduct contrary to an international obligation. If self-defense is in accord with the U.N. Charter, it would preclude a finding of wrongfulness." LOUIS HENKEN ET AL., INTERNATIONAL LAW CASES AND MATERIALS, 566 (West Group 3d ed., 1998). See also The International Commission of Inquiry Between Great Britain and Russia Arising of the Norts Sea Incident, 2 Am. J. INT. L. 929 (1908) (describing how Russian warships erroneously targeted British fishing vessels, mistakenly believing them to be Japanese Torpedo boats). The Commission did not find any wrongfulness on the part of the Russian Admiral. Nonetheless, the Russian Government paid damages of \$300,000.00. See THE HAGUE COURT REPORTS, [1st]-Series 403 (James Brown Scott ed., Oxford University Press 1916). The defense of necessity poses problems when compared to international humanitarian law, or the law of armed conflict. Professor Marco Sassoli cogently points out that the defenses or excuses cannot preclude the wrongfulness of a violation of peremptory norms of international law, and that law of armed conflict is considered to be peremptory. Marco Sassoli, State Responsibility for Violations of International Humanitarian Law, 84 ICRC 401, 413 (2002). More specifically, on the liability of states in outer space, Jonathan Epstein comments that "[w]hile essentially establishing strict liability for the launching state, neither the convention language, deliberations on the treaty, or commentators indicate that this convention was meant to cover anything other than direct physical damage at the earth's surface caused by a malfunctioning launch vehicle." Jonathan M. Epstein, Comment, Global Positioning System (GPS): Defining the Legal Issues of its Expanding Civil Use, 61 J. AIR L. & COM. 243, 285 (1995).

⁸⁰ See Stephen Gorove, Some Comments on the Convention on International Liability for Damage Caused by Space Objects, in PROCEEDINGS OF THE SIXTEENTH COLLOQUIUM ON THE LAW OF OUTER SPACE (U.C. Davis School of Law ed., 1973) (indirect damages were intentionally omitted from the recovery scheme and are therefore not covered); Jiefang Huang, Development of the Long-term Legal Framework for the Global

⁷⁸ See Roman Boed, State of Necessity as a Justification for Intentionally Wrongful Conduct, 3 YALE HUM. RTS. & DEV. L.J. 1 (2000) (noting that the defense of necessity "does not necessarily protect the State from being asked to make compensation for the injurious consequences of its action").

It is to be noted that the only incident invoking the Liability Convention was the Cosmos 954 incident, where a Soviet satellite crashed in the Canadian north.⁸¹ Finally, the question can be raised as to the applicability of the Liability Convention to an act of aggression in outer space, which is necessarily in violation of the U.N. Charter, and a violation of the peaceful purposes principle.⁸²

Navigation Satellite System, 22 ANN. AIR & SPACE L. 585, 586 (1997). For the opposing view, see Paul B. Larsen, Legal Liability for Global Navigation Satellite Systems, in PROCEEDINGS OF THE THIRTY-SIXTH COLLOQUIUM ON THE LAW OF OUTER SPACE 12 (U.C. Davis School of Law ed., 1993).

⁸¹ On Jan. 24, 1978, Cosmos 954, a Soviet nuclear-powered maritime surveillance satellite, crashed in the Northwest Territories of Canada. The satellite had been launched into space on Sept. 18, 1977. The Secretary General of the United Nations had been officially informed of the launch on November 22, 1977. See U.N. Doc. No. A/AC.105/INF.368 (1997). The U.S.S.R. had failed to give Canada notice of the possible re-entry of the satellite into the earth's atmosphere Canadian territory, and, subsequently, of the imminent re-entry of the satellite. The crash scattered a large amount of radioactive debris over a 124,000square-kilometer area in northern Canada, stretching southward from Great Slave Lake into northern Alberta and Saskatchewan. The government of Canada informed the Secretary General of the United Nations of the discovery of debris from the satellite. See U.N. Doc. No. A/AC.105/214 & 214/Corr.1 (Feb. 8, 1978); A/AC.105/217 (Mar. 6, 1978); A/AC.105/236 (Dec. 22, 1978). The intrusion of Cosmos 954 into Canada's air space, and the dispersion of hazardous radioactive debris from the satellite on Canadian territory were considered by Canada violations of its sovereignty. Canada established this violation by the mere fact of the trespass of the satellite within its airspace, the harmful consequences of this intrusion. International precedents recognize that a violation of sovereignty gives rise to an obligation to pay compensation. See Canada v. U.S.S.R. (1979), 18 Int. Leg. Mat. 899; see also National Space Development Agency of Japan, Settlement of Claim between Canada and the Union of Soviet Socialist Republics for Damage Caused by "Cosmos 954" (Apr. 2, 1981), at http://www.nasda.go.jp/lib/space-law/chapter_3/3-2-2-1_e.html. The claim was settled in the following way:

Negotiations towards a settlement did not begin for almost a year. Finally after three sessions in February, June, and November 1980, a three million dollar settlement that did not expressly acknowledge legal liability was concluded in Moscow on April 2, 1981. It took the form of a protocol signed by the Canadian Ambassador and the Soviet Deputy Minister of Foreign Affairs.

HUGH M. KINDRED ET. AL., INTERNATIONAL LAW CHIEFLY AS INTERPRETED AND AP-PLIED IN CANADA, 530 (Edmond Montgomery 5th. ed., 1993); see also P. G. Dembling, Cosmos 954 and the Space Treaties 6 J. SPACE L. 29 (1978); Stephen Gorove, Cosmos 954; Issues of Law and Policy 6 J. SPACE L. 137 (1978); B. Schwartz and M.L. Berlin, After the Fall: An Analysis of the Canadian Legal Claims for Damages Caused by Cosmos 954, 27 McGILL L.J. 676 (1982).

⁸² See Resolution on the Definition of Aggression, U.N. Res. 3314 (XXIX) (1974), G.A.O.R. 29th Sess., Supp. 31, at 42 ("Aggression is the use of armed force by a State against the sovereignty, territorial integrity or political independence of an2005]

The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies is the least important of the major space treaties and has not received wide accession within the international community.⁸³ Under this treaty, the moon is to be used exclusively for peaceful purposes. Under Article 3.2, "any threat or use of force or any other hostile act or threat of hostile act on the moon is prohibited. It is likewise prohibited to use the moon in order to commit any such act or to engage in any such threat in relation to the earth, the moon, spacecraft," and "the personnel of spacecraft or man-made space-objects."84 Furthermore, Article 3.3 explicitly prohibits weaponizing the moon, stating: "State Parties shall not place in orbit around, or other trajectory to or around the moon objects carrying nuclear weapons or any other kinds of weapons of mass destruction or place or use such weapons on or in the moon."85 Under Article 3.4, "the establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military maneuvers on the moon" is prohibited.⁸⁶

b. Confidence Building Treaties

Considering the strategic importance of outer space and the immense destructive capacity of weapons that use space technology, the two major space powers negotiated a series of treaties affecting the use of military space technology.⁸⁷ These treaties are primarily aimed at reducing international tensions between the two major space powers. These are treaties that may either increase transparency of action, or regulate arsenals through arms control or arms reductions.

i. Increased Transparency

The two major space powers entered into a series of treaties in order to increase transparency and predictability concerning

⁸⁵ Id.

⁸⁶ Id.

⁸⁷ Id.

other State, or in any other manner inconsistent with the Charter of the United Nations, as set out in this definition.").

⁸³ Agreement on the Activities of States on the Moon and Other Celestial Bodies, Dec. 5, 1979, 18 I.L.M. 1434 [hereinafter Moon Agreement]. According to the Report of the Legal Subcommittee, *supra* note 8, as of Jan. 1, 2003, the Moon Agreement had ten State Parties and had been signed by five additional States. France is the only major space power to have signed this agreement.

⁸⁴ Id.

the use of their military space assets. The commonality of these treaties lies in the method used to attain this goal—improving the communication between the Cold War protagonists. Certain treaties dealt with improving the communication systems, while others established communication protocols. The number of these treaties highlights the importance that the major Cold War actors placed on improved communications as a necessary aspect of national space-security law and, consequently, on international-security as a whole.

ii. Communication Infrastructures

The Cuban missile crisis of October 1962 eloquently displayed the importance of prompt, direct communication between Moscow and Washington. In 1963 the superpowers signed a Hotline Agreement and a Hotline Expansion Agreement.⁸⁸ The system was then improved with The Hotline Modernization Agreement Between The United States of America and The Union of Soviet Socialist Republics on Measures To Improve the U.S.A.-U.S.S.R. Direct Communications Link.⁸⁹ Since January 1978, two satellite communications circuits are operational. The original radio circuit established under the 1963 agreement has been terminated. Nonetheless, the original 1963 wire telegraph circuit is maintained as a backup.⁹⁰ The Russian federation is now the successor-state to the Soviet Union for this Agreement.

The Agreement between the United States of America and the Union of Soviet Socialist Republics on the Establishment of Nuclear Risk Reduction Centers was also an important confidence-building document concerning space-capable assets and secure communications.⁹¹ Again, the Russian federation is the

⁸⁸ See Memorandum of Understanding between the United States of America and the Union of Soviet Socialist Republics Regarding the Establishment of a Direct Communications Link, at http://dosfan.lib.uic.edu/acda/treaties/hot line.htm (last visited Aug. 16, 2005); see also Agreement Between the United States of America and the Union of Soviet Socialist Republics to Expand the U.S.-U.S.S.R. Direct Communications Link (Jul. 17, 1984), available at http://www. state.gov/t/ac/trt/4786.htm (last visited Aug. 16, 2005).

⁸⁹ Agreement on Measures to Improve the U.S.-U.S.S.R. Direct Communications Link, 806 U.N.T.S. 402 (Sept. 30, 1971), *available at* http://www.state.gov/ t/ac/trt/4787.htm (last visited Mar. 1, 2005).

⁹⁰ Id.

⁹¹ Agreement between the United States of America and the Union of Soviet Socialist Republics on Establishment at Nuclear Reduction Centers (Sept. 15, 1987), *available at* http://www.fas.org/nuke/control/nrrc/docs/nrrc1.htm (last visited Mar. 1, 2005).

successor state to the Soviet Union for this Agreement. The Agreement establishes within both Moscow and Washington a National Risk Reduction Center (NRRC).⁹² There are two protocols to this Agreement. The first protocol deals with the subject of notification, namely, ballistic missile launches required under both Article 4 of the 1971 Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War, and Article VI, paragraph 1 of the 1972 Agreement on the Prevention of Incidents on and Over the High Seas.⁹³ It is important to note that two other Agreements also profit from the NRRCs, namely, the *Ballistic Missile Launch Notification Agreement* and the INF Treaty.⁹⁴

Communication concerns between the two superpowers are also addressed within the Memorandum of Agreement between the United States of America and the Russian Federation on the Establishment of a Joint Center for the Exchange of Data from Early Warning Systems and Notifications of Missile Launches. ("IDEC-MOA")⁹⁵ The JDEC-MOA attempts to diminish the possible consequences resulting from a false missile attack. However, the stated purpose of the IDEC-MOA is twofold. First, IDEC-MOA establishes "an uninterrupted exchange of information on launches of ballistic missiles and space launch vehicles from the early warning systems of the two parties."⁹⁶ Second, and more ambitiously, the IDEC-MOA aims to be a precursor to a "possible . . . [future] multilateral regime for the exchange of notifications of launches of ballistic missiles and space launch vehicles."97 From a national-security law perspective, this agreement is a significant milestone, as it established for the first time a permanent joint-operation involving the military personnel of the two superpowers.98

⁹² Id.

⁹³ Id.

⁹⁴ Memorandum of Agreement between the United States of America and the Union of Soviet Socialist Republics on Notifications of Launches of Intercontinental Ballistic Missles and Submarines Launched Ballistic Missles, U.S.-Russia (May 31, 1988), *available at* http://www.state.gov/t/ac/trt/4714.htm (last visited Aug. 16, 2005).

⁹⁵ Memorandum of Agreement Between the Government of the United States and Government of the Russian Federation on the Establishment of a Joint Center for the Exchange of Data From Early Warning Systems and Notifications of Missile Launches, U.S.-Russia (June 4, 2000), *available at* http://www.state. gov/t/ac/trt/4799.htm (last visited Aug. 16, 2005) [hereinafter [DEC-MOA].

⁹⁶ Id. art. 1.

⁹⁷ Id.

⁹⁸ Office of the Press Secretary (Moscow, Russia), The White House, U.S., Fact Sheet-Agreement on the Establishment of a Joint Warning Center for the Ex-

Article 1 of the JDEC-MOA establishes in Moscow a joint center for the exchange of data from early warning systems and notifications of missile launches, also referred to as the "Joint Data Exchange Centre," or simply "JDEC."⁹⁹ A joint commission oversees the activities of the JDEC. Data is to be exchanged between the Parties concerning:

- a. all launches of ICBMs and SLBMs of the United States of America and the Russian Federation;
- b. launches of ballistic missiles, that are not ICBMs or SLBMs, of the United States of America and of the Russian Federation;
- c. launches of ballistic missiles of third states that could pose a direct threat to the Parties, or that could create an ambiguous situation and lead to possible misinterpretation; and finally, launches of space launch vehicles.¹⁰⁰

The data is to be supplied in possible real-time by space-based and earth-based assets.¹⁰¹ Should a ballistic missile launch be detected, the information to be exchanged is the time of launch, geographic generic missile class, geographic area of payload impact, estimated time of payload impact and launch azimuth. Should the launch of a space vehicle be detected, the parties are to exchange: the time of launch, generic missile class, geographic area of the launch, and launch azimuth.¹⁰² All of this information is deemed to be of a confidential and sensitive nature and may not be disclosed without the consent of the other party.¹⁰³

A space launch vehicle ("SLV") is defined as a rocket used for delivering an object into orbit or outer space.¹⁰⁴ A spacecraft, on the other hand, is a vehicle with special equipment and is intended for flights into or in outer space for military, commercial, economic, research, or scientific purposes.¹⁰⁵ A ballistic missile ("BM") is defined as a missile that has a ballistic trajectory over most of its flight path, whether or not it is a weapondelivery system.¹⁰⁶ For an SLBM to be reported, it must have a

change of Information on Missile Launches and Early Warning (June 4, 2000), *available at* http://clw.org/pub/clw/coalition/summit050400launch.htm (last visited Mar. 1, 2005).

⁹⁹ JDEC-MOA, supra note 95, art. 6.

¹⁰⁰ *Id.* art. 3.

¹⁰¹ Id. art. 4.

¹⁰² *Id.* art. 5.

¹⁰³ Id. art. 13.

¹⁰⁴ Id. app. 1(a).

¹⁰⁵ Id. app. 1(m).

¹⁰⁶ Id. app. 1(b).

range of more than 600 kilometers.¹⁰⁷ An ICBM, however, is a weapons delivery system with a range in excess of 5,500 kilometers.¹⁰⁸

Concerned about the possible accidental outbreak of hostilities, the superpowers signed the Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War,109 and the Agreement Between the United States of America and the Union of Soviet Socialist Republics on the Prevention of Nuclear War.¹¹⁰ Under these agreements, the parties undertake to notify each other immediately if missile warning systems detect unidentified objects, or if there are signs of interference with these systems or with communication facilities.¹¹¹ Each party also undertakes to give the other advance notice of an intended missile launch should the launch extend past its national boundaries in the direction of the other party.¹¹² Both contracting parties agree to act "to prevent the development of situations capable of causing a dangerous exacerbation of their relations, as to avoid military confrontations, and as to exclude the outbreak of nuclear war between them, and between either of [them] and other countries."113 Although not specifically designed to regulate space technology, this provision affects both military space operations and critical space assets.

The United States and the U.S.S.R. also signed an agreement concerning the prevention of dangerous military activities that impacts peacetime space military activities.¹¹⁴ Under the Prevention of Dangerous Military Activities Agreement, parties may create certain "Special Caution Areas."¹¹⁵ A Special Caution Area is a region mutually designated by the parties in which

111 AMRRONW, supra note 109, art. 3.

¹¹² Id. art. 4.

113 Id. art. 1.

115 Id. at 883.

¹⁰⁷ *Id.* app. 1(c).

¹⁰⁸ *Id.* app. 1(d).

¹⁰⁹ Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War, U.S.-U.S.S.R., 807 U.N.T.S. 57 (Sept. 30, 1971), *available at* http:// www.state. gov/t/ac/trt/4692.htm (last visited Mar. 1, 2005) [hereinafter AMRRONW].

¹¹⁰ Agreement Between the United States of America and the Union of Soviet Socialist Republics on the Prevention of Nuclear War, June 22, 1973, U.S.-U.S.S.R., 24 U.S.T. 1478, *available at:* http://www.state.gov/t/ac/trt/5186.htm (last visited Mar. 1, 2005).

¹¹⁴ Agreement on the Prevention of Dangerous Military Activities, June 12, 1989, U.S.-U.S.S.R., 28 I.L.M. 877 [hereinafter the Prevention of Dangerous Military Activities]. A similar agreement exists between China and Russia but not between China and the U.S.A.

armed forces personnel and equipment of the parties are present, and where the parties agree to take special measures.¹¹⁶ Under Article II of the agreement, the parties undertake to prevent certain dangerous activities, such as entering into the national territory of the other party, using a laser in such a manner such that its radiation could cause harm to personnel or damage equipment of the other party, or interfering with command and control networks in a manner that could harm the personnel or damage the equipment of the other party.¹¹⁷ In the event of such occurrences, the Prevention of Dangerous Military Activities Agreement outlines certain communications protocols to reduce tensions and prevent a devastating escalation of hostilities.¹¹⁸ Article VIII of the Prevention of Dangerous Military Agreement specifically states that the Agreement is not to affect the rights of individual or collective self-defense, and of navigation or over-flight, in accordance with international law.¹¹⁹ To facilitate the execution of the agreement, a Joint Military Commission is created under Article IX.¹²⁰ The Prevention of Dangerous Military Activities Agreement also completes between the Parties the Rescue Agreement in situations involving military astronauts and equipment, which, during peacetime, would enter the national territory of the other party.¹²¹ Article IV of the Prevention of Dangerous Military Agreement refers to certain procedures set forth in Annexes 1 and 2 of the Agreement.¹²² In this case, military astronauts would be accorded the opportunity to contact their defense attaché as soon as possible; the equipment would have to be cared for and protected, and their departure facilitated at the earliest opportunity.¹²³

Within the space national-security legal architecture, communication was primarily an issue of concern between the United States and the former U.S.S.R. Communicative concerns were, however, not exclusive to the bilateral relations of the superpowers. A treaty was also signed between the United States and China in an attempt to establish a better communication-inter-

- ¹¹⁹ Id. at 885.
- ¹²⁰ Id. at 886.
- ¹²¹ Id. at 892.
- ¹²² Id. at 883.
- 123 Id. at 892.

¹¹⁶ Id. at 883-84.

¹¹⁷ Id. at 881.

¹¹⁸ Id. at 883.

face between these two countries.¹²⁴ This is the Agreement Between the Department of Defense of the United States of America and the Ministry of National Defense of the People's Republic of China Establishing a Consultation Mechanism to Strengthen Military Maritime Safety. Although this Agreement does not explicitly deal with space technology, it does apply to ships equipped with space-capable technology, and thus has an indirect impact on space national-security law.¹²⁵

Under this agreement, the defense ministries of the respective parties are to encourage and facilitate, as appropriate, consultations between delegations authorized by their respective defense ministries "for the purpose of promoting common understandings regarding activities undertaken by their respective maritime and air forces when operating in accordance with international law, including the principles and regimes reflected in the United Nations Convention on the Law of the Sea."126 The mechanism is defined within Article II as "Annual meetings."127 Lastly, it is important to note that the CFE treaty presents a textual evolution of the protective envelope as the protective envelope within the CFE also includes multinational technical means. The CFE protective envelope is, however, limited to verification for ensuring compliance with the treaty. The question can also be asked, in the case of the CFE, as to the possible inclusion of private commercial satellite ventures within the protective envelope of multinational technical means.

iii. Communication Protocols

In order to work efficiently, the communication infrastructure required an official procedure or system of rules. A series of treaties established communication protocols on certain key issues of space security.¹²⁸ The Agreement on Notification of an

2005]

¹²⁴ Agreement Between the Department of Defense of the United States of America and the Ministry of National Defense of the People's Republic of China on Establishing a Consultation Mechanism to Strengthen Military Maritime Safety, Jan. 19, 1998, U.S.-China, at http://www.fas.org/nuke/control/sea/test/ us-china98.htm (last visited Mar. 1, 2005).

¹²⁵ Id. art. 2.

¹²⁶ Id.

¹²⁷ Id.

¹²⁸ Department of State, U.S., Introduction to Agreement Between the Government of the United States of America and the Union of Soviet Socialist Republics on Notifications of Launches of International Ballistic Missiles and Submarine-Launched Ballistic Missiles, at http://www.state.gov/www/global/arm/treaties/balist1.html [hereinafter Introduction to Launch Notification Agreement].

Intercontinental Ballistic Missile (ICBM) and Submarine-Launched Ballistic Missile (SLBM) structured certain communication protocols concerning the important issue of launches of nuclear-armed missiles.¹²⁹ This treaty was originally signed between the United States and the Soviet Union. The Russian Federation is now the successor state for this agreement. Even though a number of previous agreements dealt with the issue of launch notification (1971 Accident Measures Agreement, the 1972 Incident at Sea Agreement, and Article XVI of SALT II), a comprehensive treatment of strategic ballistic missile launch notifications was nonetheless absent from the normative structure.¹³⁰ This Agreement addresses these lacunae and provides further confidence-building measures through increased communication. Each party agreed to provide notice to the other party through their respective Nuclear Risk Reduction Centers, no less than 24-hours in advance, of the planned date, launch area, and area of impact of any launch of a strategic ballistic missile, an intercontinental ballistic missile, or a submarinelaunched ballistic missile.¹³¹ In case of a rescheduling of such launch, notice is deemed to be legally binding for a period of four days.¹³² For ICBMs and SLBMs from land, the notification shall additionally indicate the general area from which the planned launch is to take place.¹³³ For SLBMs launched from submarines, the notification will also specify the quadrant of the ocean or the body of water from which the launch is scheduled to occur.134

Another such treaty is the Agreement Between the Government of the United States of America and the Government of the Union of Soviet Socialist Republics on the Prevention of Incidents On and Over the High Seas and its Protocol.¹³⁵ Again,

¹²⁹ Agreement Between the Government of the United States of America and the Government of the Union of Soviet Socialist Republics on Notifications of Launches of Intercontinental Ballistic Missiles and Submarine-Launched Ballistic Missiles, May 31, 1988, U.S.-U.S.S.R., 27 I.L.M. 1176, 1200, *available at* http:// www.state.gov/www/global/arms/treaties/balist1.html (last visited Mar. 1, 2005) [hereinafter the Launch Notification Agreement].

¹³⁰ Introduction to Launch Notification Agreement, supra note 128.

¹³¹ Id. at 1201, art.1.

¹³² Id. at 1201, art. II.

¹³³ Id. at 1201, art III.

¹³⁴ Id. at 1201-02, art. III.

¹³⁵ Agreement Between the Government of the United States of America and the Government of the Union of Soviet Socialist Republics on the Prevention of Incidents on and over the High Seas, U.S.-U.S.S.R., 23 U.S.T. 1168 (May 25,

the Russian Federation is the successor state for this agreement.¹³⁶ The agreement defines the term "aircraft" and specifically excludes spacecraft from the term.¹³⁷ Nonetheless, the agreement, which deals with incidents between military ships, does have an implication for ships with space-capable technology. Furthermore, the Protocol deals with exercising due regard by military ships towards non-military ships and in this sense can shed some light on the possible interpretation of the due regard norm contained in Article IX of the OST.¹³⁸

According to Article III(6) of the Agreement, "Ships of the Parties shall not simulate attacks by aiming guns, missile launchers, torpedo tubes, and other weapons in the direction of a passing ship of the other Party, not launch any object in the direction of passing ships of the other Party."139 Article VI of the Agreement also establishes an obligation for the parties to broadcast information and warnings to mariners at least three to five days in advance of "notification of actions on the high seas which represent a danger to navigation or to aircraft in flight."140 Article II of the Protocol states that the parties are not to "make simulated attacks by aiming guns. Missile launchers, torpedo tubes and other weapons at non-military ships of the other Party, nor launch nor drop any objects near non-military ships of the other Party in such a manner as to be hazardous to these ships or to constitute a hazard to Navigation."¹⁴¹ Should space ever be weaponized, similar rules would need to be established in outer space to ensure the security of both the exercise of the right of peaceful navigation through space and the interface between the air- and space-mediums.

¹⁴⁰ *Id.* art. VI.

^{1972),} available at http://www.fas.org/nuke/control/sea/text/sea1.htm (last visited Mar. 1, 2005) [hereinafter PIHS].

¹³⁶ Id.

¹³⁷ Id.

¹³⁸ Protocol to the Agreement Between the Government of the United States of America and the Government of the Union of Soviet Socialist Republics on the Prevention of Incidents on and over the High Seas signed May 25, 1972, U.S.S.R., 24 U.S.T. 1063 (May 22, 1973), *available at* http://www.fas.org/nuke/control/ sea/text/sea1.htm (last visited Mar. 1, 2005).

¹³⁹ PIHS, supra note 135, art. III(6).

¹⁴¹ Id. art. III.

iv. Regulation of Arsenals

Treaties regulate different aspects of space-capable arsenals,¹⁴² ranging from the development and testing of new technologies to their production and deployment.¹⁴³ Perhaps the first normative instrument concerning a military activity in outer space was the Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water 1963 ("LTBT").¹⁴⁴ A formal undertaking of State Parties is found in LTBT, Article I, to not "carry out any nuclear weapon test explosion, or any other nuclear explosion, at any place under its jurisdiction or control: (a) in the atmosphere; beyond its limits, including outer space; or underwater, including territorial waters or high seas."¹⁴⁵

The Comprehensive Test Ban Treaty "CTBT"¹⁴⁶ continues where the LTBT left off. Article I of the CTBT states: "Each State Party undertakes not to carry out any nuclear weapon test explosion or any other nuclear explosion, and to prohibit and prevent any such nuclear explosion at any place under its jurisdiction or control."¹⁴⁷ Of the major space-faring nations, the

¹⁴⁵ LTBT, supra note 144, art. I.

¹⁴⁶ Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, opened for signature Sept. 24, 1996, S. Treaty Doc. No. 105-28 (not yet entered into force), *available at* http://www.state.gov/www/global/ arms/treaties/ctb.heml (last visited Feb. 18, 2005) [hereinafter CTBT]. As of 2000, it has been signed by 170 countries and ratified by 109. Bureau of Arms Control, U.S., Comprehensive Nuclear Test Ban Treaty Signatories/Ratifiers (Nov. 15, 2000), *at* http://www.state.gov/www/global/arms/factsheets/wmd/ nuclear/ctbt/ctbtsigs.html (last visited Mar. 1, 2005) [hereinafter Signatures to the CTBT]. The latest signatory of the CTBT is Eritrea, and the latest ratifying State is the Libyan Arab Jamahiriya. *Id.* According to Article XIV, this Treaty will enter into force 180 days after the forty-four States listed in Annex 2 to the Treaty have all ratified. *Id.* Currently, forty-one of these forty-four States have signed, and the missing three are The Democratic People's Republic of Korea, India and Pakistan. *Id.* From Annex 2, thirty-two States have ratified the Treaty. *China* and the United States have both signed but not ratified the Treaty. *Id.*

¹⁴⁷ CTBT, supra note 146, art. I.

34

¹⁴² For a fascinating account of the process from one of the main actors in the negotiations of disarmament treaties, see Thomas Graham Jr., DISARMAMENT SKETCHES: THREE DECADES OF ARMS CONTROL AND INTERNATIONAL LAW (Wash. Univ. Press ed., 2002).

¹⁴³ Id.

¹⁴⁴ Treaty Banning Nuclear Weapon Tests in the Atmosphere, Outer Space and Under Water, 14 U.S.T. 1313, T.I.A.S. 5433 (Aug. 5, 1963), *available at* http://www.state.gov/t/ac/trt/4797.htm (last visited Mar. 1, 2005) [hereinafter LTBT]. This Treaty was amended through the UN by the Amendment of the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, A/RES/46/28, Dec. 6, 1991.

United Kingdom, France, and Russia have ratified the CTBT.¹⁴⁸ However, both the United States and China have not ratified the CTBT.¹⁴⁹

It is important to note that LTBT prohibitions apply only to nuclear explosions and not to other activities that result in the release of nuclear energy.¹⁵⁰ Some of these activities may be required in the management of nuclear weapons. Activities related to nuclear power research, including accelerators, are not prohibited, and neither are preparations for nuclear weapons tests.¹⁵¹ Only tests in and of themselves are prohibited.¹⁵²

The prohibition does not prevent the use of space nuclear weapons during armed conflict.¹⁵³ The Treaty does prohibit the use of nuclear explosions for non-testing purposes at any place under the jurisdiction or control of a State, but does not affect UN Charter, Article 51 rights.¹⁵⁴ Furthermore, it is important to note that the phrase "or any other nuclear explosion" is identical in the LTBT and CTBT.¹⁵⁵ It is the position of the United States that, in the LTBT, it was clearly understood that the phrase would not apply to the use of nuclear weapons in the event of war.¹⁵⁶ The negotiating records of the CTBT also demonstrate that the prohibition in Article I does not apply to the use of nuclear weapons, which, as is demonstrated in the preamble, was beyond the scope of the Treaty.¹⁵⁷

The control of nuclear weapons is an important aspect of space national-security law. Attacks on space assets do not necessarily require advanced space technology. The effects of a nuclear detonation either in outer space, or occurring within a very high altitude, can cause havoc with space assets, effectively destroying satellite constellations within the Low Earth Orbit ("LEO").¹⁵⁸ Concerns of the international community over the

¹⁵⁸ See generally Advanced Systems and Concepts Office, Defense Threat Reduction Agency, High Altitude Nuclear Detonations (HAND) Against Low Earth Or-

¹⁴⁸ Signatures to the CTBT, *supra* note 146.

¹⁴⁹ Id.

¹⁵⁰ CTBT, supra note 146.

¹⁵¹ Id.

¹⁵² Id.

¹⁵³ *Id*.

¹⁵⁴ Id.

¹⁵⁵ Id.

¹⁵⁶ See Department of State, Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, *at* http://www.state.gov/www/ global/arms/treaties/ltbt1.html (last visited Mar. 1, 2005).

¹⁵⁷ Id.

proliferation of nuclear weapons technology were addressed in the Treaty on the Non-Proliferation of Nuclear Weapons ("NPT"),¹⁵⁹ which has been described as "the centerpiece of international efforts to control the spread of nuclear weapons."¹⁶⁰ The Treaty establishes as a Nuclear Weapons State, one that had, before January 1, 1967, manufactured and detonated a nuclear weapon.¹⁶¹ Five nuclear powers, the United States, the United Kingdom, Russia, France, and China, have thus legitimized their nuclear arsenals.¹⁶² The transfer of nuclear weapons technology to any recipient, whatsoever, directly or indirectly, is proscribed by the NPT.¹⁶³ Nuclear Weapons States undertake to not transfer nuclear weapons technology.¹⁶⁴ Reciprocally, non-Nuclear Weapons States undertake to not receive or manufacture nuclear weapons.¹⁶⁵ In exchange for their undertaking to not acquire or manufacture nuclear weapons, States may receive assistance in the development of nuclear power destined for peaceful uses. Furthermore, each of the parties to the treaty, including the five Nuclear Weapons States, agree to "pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control."166

Verification of compliance is achieved through the International Atomic Energy Agency ("IAEA"), which in turn reports noncompliance to both the United Nations Security Council

¹⁶¹ NPT, supra note 159, art. IX.

bit Satellites ("HALEOS"), *at* http://www.fas.org/spp/military/program/asat/ haleos.pdf (last visited Mar. 1, 2005). Several scenarios are exposed such as collateral damages caused to LEO satellites from a regional conflict where a state has fired a "nuclear warning shot" over another state, or a deliberate LEO attack from a dictator as a final gesture of defiance towards the West. *Id*.

¹⁵⁹ Treaty on the Non-Proliferation of Nuclear Weapons, July 1, 1968, 21 U.S.T. 483, T.I.A.S. No. 6839, *available at* http://www.state.gov/www/global/arms/treaties/npt1.html (last visited Mar. 1, 2005) [hereinafter NPT].

¹⁶⁰ Ambassador Thomas Graham Jr., Bi-Partisan Task Force on Non-Proliferation, U.S. House of Representatives, *at* http://www.house.gov/markey/iss_non proliferation_grahamst030618.pdf (last visited Mar. 1, 2005).

¹⁶² Department of State, Signatories to the Treaty on the Non-Proliferation of Nuclear Weapons (Dec. 3, 1998), *at* http://www.state.gov/www/global/arms/treaties/npt3.html (last visited Mar. 1, 2005).

¹⁶³ NPT, supra note 159, art. I-II.

¹⁶⁴ Id.

¹⁶⁵ Id.

¹⁶⁶ Id. art. VI.

("UNSC") and the United Nations General Assembly ("UNGA").¹⁶⁷ Regrettably, North Korea withdrew from the NPT in January 2003.¹⁶⁸

Perhaps the most publicized treaties regulating space-capable arsenals were the Anti-Ballistic Missile ("ABM") Treaty of 1972, the Protocol of 1974, and the ABM Treaty Demarcation Agreement 1977, which are no longer in force.¹⁶⁹

The ABM Treaty limited the deployment, testing, and use of missile systems intended to intercept incoming strategic ballistic missiles.¹⁷⁰ Article II defined an ABM system as "a system to counter strategic ballistic missiles or their elements in flight trajectory."¹⁷¹ Parties to the Treaty had decided to proscribe the testing, development, deployment, and use of ABM systems.¹⁷² The treaty initially allowed each Party to maintain two ABM systems having a radius of not more than 150 kilometers, with the centers of the two deployment areas separated by a minimum of 1,300 kilometers.¹⁷³ In each of these deployment areas, a Party could deploy a maximum of 100 ABM launchers with a maximum.

¹⁶⁹ Treaty on the Limitation of Anti-Ballistic Missile Systems, U.S.-U.S.S.R., 23 U.S.T. 3435 (May 26, 1972), available at http://www.nuclearfiles.org/menu/ library/treaties/missle-defense/trty-missle-defense_limitations_1972-05-26.htm (last visited Aug. 16, 2005) [hereinafter ABM Treaty]; Limitation of Anti-Ballistic Missile Systems Protocol to the Treaty of May 26, 1972, U.S.-U.S.S.R., 27 U.S.T. 1645 (July 3, 1974), available at http://www1.umn.edu/humanrts/peace/docs/ protocol1972.html (last visited Mar. 1, 2005); First Agreed Statement Relating to the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems on May 26, 1972 (Sept. 26, 1997), at http://defenselink.mil/acq/acic/treaties/abm/as_1.htm (last visited Mar. 1, 2005); Second Agreed Statement Relating to the Treaty between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems on May 26, 1972 (Sept. 26, 1997), at http://www.defenselink.mil/acq/acic/treaties/abm/as_2.htm (last visited Mar. 1, 2005); ABM Treaty: Agreement on Confidence-Building Measures Related to Systems to Counter Ballistic Missiles Other than Strategic Ballistic Missiles (Sept. 24, 1997), at http://www.defenselink.mil/acq/acic/treaties/abm/ cbm.htm (last visited Mar. 1, 2005); ABM Treaty: Regulations of the Standing Consultative Commission (Sept. 26, 1997), at http://www.defenselink.mil/acq/ acic/treaties/abm/ad_reg.htm (last visited Mar. 1, 2005).

¹⁶⁷ See id. at pmbl.

¹⁶⁸ See Larry A. Mksch, Foreign Affairs Defense and Trade Division, North Korea's Nuclear Weapons Program (2003), *at* http://fas.org/spp/starwars/ors/ IB91141.pdf (last visited Mar. 1, 2005).

¹⁷⁰ ABM Treaty, *supra* note 169.

¹⁷¹ Id.

¹⁷² Id.

¹⁷³ Id.

mum of 100 ABM interceptor missiles at the launch sites.¹⁷⁴ The 1974 Protocol modified this right, allowing each Party to maintain one ABM system located either in the surrounding area of its national capital, or at an ICBM site.¹⁷⁵

Article V(1) of the Treaty stipulated: "each party undertakes not to develop, test, or deploy ABM systems or components which are sea-based, air-based, space-based, or mobile landbased."¹⁷⁶ Nonetheless, research on ABM technology remained permissible. The parties also agreed that, should an ABM system based on other physical principles including components capable of substituting for "ABM interceptor missiles, ABM launchers, or ABM radars" be created, specific limitations on such systems and their components would be subject to new discussion in accordance with Article XIII, and agreement in accordance with Article XIV of the Treaty.¹⁷⁷

Verification of treaty compliance was to be provided by the use of "national technical means . . . consistent with generally recognized principles of international law." The ABM Treaty not only formally recognized the legitimate use of intelligencegathering satellites, but also protected these intelligence-gathering satellites.¹⁷⁸ Both parties agreed not to interfere with each other's national technical means of verification.¹⁷⁹ Each party also undertook to not use deliberate concealment measures, which could impede verification by national technical means.¹⁸⁰ Nonetheless, this undertaking not to impede verification did not require changes in existing construction, assembly, conversion, or overhaul practices.181

The ABM Treaty was to be besieged by an interpretative polemic. There was considerable debate on expansive interpretations or restrictive interpretations of the Treaty regarding the testing of certain ABM systems in space.¹⁸² The dissolution of

¹⁷⁴ Id. 175 Id. art. III. 176 Id. art. IV. 177 Id. 178 Id. 179 Id. 180 Id ¹⁸¹ Id.

¹⁸² See Abraham D. Sofaer, The ABM Treaty and the Strategic Defense Initiative, 99 HARV. L. REV. 1972 (1986). For a review of the debate and a critique of the reinterpretation, see Raymond Garthoff, Policy Versus the Law: The Reinter-PRETATION OF THE ABM TREATY (The Brookings Institution ed., 1986). For a differing opinion, see PAUL NITZE, FROM HIROSHIMA TO GLASNOST: AT THE

the U.S.S.R. created important issues concerning the successor state for this treaty.¹⁸³ The dissolution of the U.S.S.R. was confirmed with the establishment of the Commonwealth of Independent States ("CIS"),¹⁸⁴ which attempted to become the successor State to the U.S.S.R. This was, however, not to be the case. Nor could the Russian Federation be recognized as the sole successor State for the ABM Treaty. The geographical distribution of the Soviet's ABM system made it impossible for the Russian Federation to be the sole successor state to the U.S.S.R. ¹⁸⁵ Establishing the Russian Federation as the successor state to the U.S.S.R. would have created an unacceptable situation, placing the Russian Federation in immediate violation of its ABM Treaty obligations.¹⁸⁶ This succession problem was not exclusive to the ABM Treaty. Similar issues confronted the Intermediate Nuclear Force Treaty ("INF"), the Conventional Armed Forces in Europe Treaty,¹⁸⁷ and the 1991 Strategic Arms Reduction Treaty ("START").¹⁸⁸ The ABM Treaty was consid-

¹⁸³ See Paul R. Williams, The Treaty Obligations of the Successor States of the Former Soviet Union, Yugoslavia, and Czechoslovakia: Do They Continue in Force?, 23 DENV. J. INT'L L. & POL'Y 1, (1994); see also Edwin D. Williamson & John E. Osborn, A U.S. Perspective on Treaty Succession and Related Issues in the Wake of the Break-up of the USSR and Yugoslavia, 22 VA. J. INT'L L. 261 (1993).

¹⁸⁴ Agreement Established the Commonwealth of Independent States, 31 I.L.M. 138 (Dec. 21, 1991) [hereinafter the Alma Alta Declaration].

¹⁸⁵ State Department, Fact Sheet on Memorandum of Understanding on Succession (Sept. 26, 1997), *at* http://www.fas.org/nuke/control/abmt/docs/97092616_wpo.html (last visited Mar. 1, 2005). Certain early-warning radars, along with an ABM test range, were located outside of the Russian Federation. *Id.*

¹⁸⁶ ABM Treaty, *supra* note 169. Specifically, Article IX of the ABM Treaty states that "[t]o assure the viability and effectiveness of this Treaty, each Party undertakes not to transfer to other States and not to deploy outside its national territory, ABM systems or their components limited by this Treaty." *Id.* art. IX.

¹⁸⁷ Treaty on Conventional Armed Forces in Europe, Nov. 19, 1990, 30 I.L.M. 1 [hereinafter the CFE].

¹⁸⁸ These issues were resolved through a series of treaties, known as the Tashkent Agreement of 1992, allocating Soviet allotments under the CFE Treaty to Azerbaijan, Armenia, Belarus, Kazakhstan, Moldova, Russia, Ukraine, and Georgia. *Id.* The Lisbon Protocol of 1992 names Russia, the Ukraine, Belarus, and

2005]

CENTER OF DECISION (Grove Weidenfeld ed., 1989); see also Abram Chayes & Antonia Handler Chayes, Testing and Development of Exotic Systems Under the ABM Treaty: The Great Reinterpretation Caper 99 Harv. L. Rev. 1956 (1986); FRANCIS FITZ-GERALD, WAY OUT THERE IN THE BLUE: REAGAN, STAR WARS, AND THE END OF THE COLD WAR (Simon & Schuster ed., 2000). For a broader analysis of reinterpretation of arms control treaties, see David Koplow, Constitutional Bait and Switch: Executive Reinterpretation of Arms Control Treaties, 137 U. PA. L. REV. 1353 (1989); David A. Koplow, When Is an Amendment Not an Amendment? Modification of Arms Control Agreements Without the Senate, 59 U. CHI. L. REV. 981 (1992).

ered an important document to the strategic logic of the epoch. Thus, the ABM Treaty was not allowed to lapse and continued in force.¹⁸⁹ A Memorandum of Understanding ("MOU") on the issue of ABM Treaty succession was signed between the United States, Ukraine, the Russian Federation, Kazakhstan, and Belarus. Within this MOU, the four former Soviet Republics assumed the rights and obligations of the predecessor State in the ABM treaty, and its associated documents.¹⁹⁰ As a result of this MOU, a bilateral treaty mutated into a multilateral existence. The multilateralization of the ABM Treaty became an issue of debate in Washington between the Senate and the Office of the President.¹⁹¹

A perceived change by the United States in the strategic threats environment in missile proliferation capabilities of "rogue nations" sealed the fate of the ABM Treaty.¹⁹² Thus, the multilateral life of the ABM Treaty was quite short. On December 14, 2001, the U.S. State Department sent a diplomatic note to Russia, Belarus, Kazakhstan and Ukraine stating:

Pursuant to Article XV, paragraph 2, the United States has decided that extraordinary events related to the subject matter of the Treaty have jeopardized its supreme interests. Therefore, in

¹⁸⁹ See William J. Clinton, Response by the President to the March 3 Letter from Senators Gilman and Helms on the ABM Treaty, Coalition to Reduce Nuclear Dangers (May 21, 1998), *at* http://www.clw.org/archive/coalition/ clin0521.htm (last visited Aug. 16, 2005).

¹⁹⁰ Memorandum of Understanding Relating to the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems on May 26, 1972, U.S.-U.S.S.R., *at* http://www.defenselink.mil/acq/acic/treaties/abm/ad_mou.htm (last visited Mar. 1, 2005) [hereinafter the MOU].

¹⁹¹ The issue being that the Senate believed that the changing of a bilateral treaty into a multilateral treaty constituted a "substantive modification to the Treaty," thus requiring the advice and consent of the Senate. Walter Dellinger, Office of Legal Counsel, U.S., Memorandum for the Counsel to the President, Constitutionality of Legislative Provision Regarding ABM Treaty (1996), *at* http://www.usdoj.gov/olc/abmjq.htm (last visited Feb. 18, 2005).

¹⁹² Amy Woolf, Foreign Affairs Defense and Trade Division, National Missile Defense Russia's Reaction (2002) *at* http://www.fas.org/spp/starwars/crs/RL30967.pdf (last visited Aug. 16, 2005). On this point, the Russians had a different perspective on the threat assessment. *Id.*

Kazakhstan as the successors to the Soviet Union in the START I Treaty. *Id.* The Ukraine and Belarus have also participated in the implementation of the INF Treaty through agreements reached in the Treaty's Special Verification Commission (SVC). *Id.* The Senate did review the Lisbon Protocol when it offered its advice and consent to the START I Treaty, but it did not request or receive an opportunity to review the multilaterlization arrangements made for the INF and CFE treaties. *Id.*

the exercise of the right to withdraw from the Treaty provided in Article XV paragraph 2, the United States hereby gives notice of its withdrawal from the Treaty. In accordance with the terms of the Treaty, withdrawal will be effective six months from the date of this notice.¹⁹³

The decision to withdraw from the ABM Treaty was based on a perceived change to the international-security environment.¹⁹⁴ It was argued that the new security environment required a "different approach to deterrence and new tools for defense."¹⁹⁵ The strategic logic of the Cold War was deemed not applicable to the new threats.¹⁹⁶ Russian President Vladimir Putin responded quickly to the American withdrawal. President Putin stated that he believed the withdrawal was a mistake, but that the American decision "[did] not pose a threat to the nationalsecurity of the Russian Federation."¹⁹⁷ China was opposed and expressed concerns about the American withdrawal.¹⁹⁸

[A]s the events of September 11 demonstrated, the security environment is more complex and less predictable than in the past. We face growing threats from weapons of mass destruction (WMD) in the hands of states or non-state actors, threats that range from terrorism to ballistic missiles intended to intimidate and coerce us by holding the U.S. and our friends and allies hostage to WMD attack. Hostile states, including those that support terrorism, are investing large resources to develop and acquire ballistic missiles of increasing range and sophistication that could be used against the United States and our friends and allies. These same states have chemical, biological, and/or nuclear weapons programs. In fact, one of the factors that make long range ballistic missiles attractive as a delivery vehicle for weapons of mass destruction is that the United States and our allies lack effective defenses against this threat.

¹⁹⁵ Id.

¹⁹⁶ Id.

¹⁹⁷ President Vladimir Putin, Speech on U.S. Withdrawal From ABM Treaty (December 14, 2001), *at* http://www.cdi.org/russia/johnson/5597-1.cfm (last visited Mar. 1, 2005).

¹⁹⁸ President Jiang Holds Phone Talks with Bush and Putin, *People's Daily Online* (Dec. 14, 2001), *at* http://english.peopledaily.com.cn/2001/2/14/ eng20011214_86664.shtml (last visited Mar. 1, 2005). Chinese Foreign Ministry spokeswoman Zhang Qiyue stated her government's concerns and those of the international community, arguing that the United Nations General Assembly has adopted a resolution calling for joint efforts to strengthen and preserve the Anti-Ballistic Missile (ABM) Treaty for three consecutive years. On November 29, the United Nations General Assembly once again passed the resolution, which fully demonstrated that the world hoped to keep the resolution and its function of

¹⁹³ Id. at 5.

¹⁹⁴ The White House, National-security Presidential Directive/NSPD-23 Memorandum (Dec. 16, 2002), *at* http://www.fas.org/irp/offdocs/nspd-23.htm (last visited Feb. 18, 2005) [hereinafter NSPD-23]:

Regrettably, the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms and Associated Documents ("SALT II")¹⁹⁹ never came into force. Under Article IX, the Parties had agreed "not to develop, test or deploy . . . systems for placing into Earth orbit nuclear weapons or any other kind of weapons of mass destruction, including fractional orbital missiles."²⁰⁰ Conceptually speaking, Article IX of SALT II completed Article IV of the OST. SALT II also contained an Elimination and Conversion Protocol consisting of two Sections.²⁰¹ The first Section established procedures for the elimination of heavy ICBMs and their launch canisters.²⁰² The second Section established procedures for the conversion and confirmation of conversion of heavy ICBM silo launchers, silo training launchers, and silo test launchers.²⁰³

The Strategic Arms Reduction Treaty ("START I"),²⁰⁴ a bilateral agreement that the United States and U.S.S.R. signed in 1991, entered into force in 1994, and is considered to be the

¹⁹⁹ Strategic Arms Limitation Talks, *at* http://www.fas.org/nuke/control/salt2/index.html (last visited Mar. 1, 2005) [hereinafter SALT II].

²⁰¹ Id.

²⁰³ Id.

²⁰⁴ Strategic Arms Reduction Treaty, Jul. 13, 1991, U.S.-U.S.S.R., *available at* http://www.fas.org/nuke/control/start1/index.html (last visited Feb. 18, 2005).

maintaining world peace and stability. Id. The 29th UNGA Resolution called upon the States Parties to the ABM Treaty (viz. the Russian Federation and the United States) to exert renewed efforts to preserve and strengthen the Treaty through full and strict compliance, adopted by a vote of eighty-two in favour to five against (Albania, Benin, Federated States of Micronesia, Israel, United States), with sixty-two abstentions. Press Release, U.N. Gap, 69th Meeting, GA/ 9675 (1999), at http://www.un.org/news/press/docs/1999/19991201.ga9675. doc.html (last visited Mar. 1, 2005). The other UNGA resolutions on the topic were of similar nature. Id. In the previous year, a UNGA Resolution, UN Doc. A/55/559-B (Nov. 20, 2000), was concerned with the preservation of and compliance with the Treaty on the Limitation of Anti-Ballistic Missile Systems (ABM Treaty) and was adopted by a recorded vote of eighty-eight in favour to five against, with sixty-six abstentions. Id. The five states voting against were Albania, Federated States of Micronesia, Honduras, Israel, and the United States. Another such resolution called on the parties to limit the deployment of anti-ballistic missile systems and to refrain from the deployment of such systems for a defence of the territory of its country. Id. (describing UNGA Resolution A/ RES/54/54, Preservation of and Compliance with the Treaty on the Liberation of Anti-Ballistic Missle Systems (Jan. 10, 2000)). The resolution was adopted by a recorded vote of eighty in favour to four against (Albania, Federated States of Micronesia, Israel, United States), with sixty-eight abstentions. Id.

²⁰⁰ Id.

²⁰² Id.

heir to SALT II. START I, Article V(18) now effectively completes OST, Art IV between the two major space powers, as both parties are "not to produce, test, or deploy systems, including missiles, for placing nuclear weapons or any other kinds of weapons of mass destruction into Earth orbit or a fraction of an earth orbit." START I established a ceiling to both the number and location of ICBMs and SLBMs that could be used to place a payload in the upper atmosphere or outer space.²⁰⁵

According to the Treaty Between the United States of America and the Russian Federation On Strategic Offensive Reductions ("The Moscow Treaty"),²⁰⁶ START I of 1991 is to continue in force between Kazakhstan, Russia, Ukraine and Belarus. The Moscow Treaty requires each party to reduce and limit its strategic nuclear warheads to 1,700-2,200 by December 31, 2012.²⁰⁷ An Implementation Committee will meet twice a year. The US plans to retire all fifty of its ten-warhead Peacekeeper ICBMs and convert four Trident submarines from strategic to conventional service.²⁰⁸

The 1987 Treaty on the Elimination of Intermediate-Range and Shorter-Range Missiles²⁰⁹ required elimination of all Soviet and American longer-range intermediate nuclear force ("LRINF") missiles, those with ranges between 1,000 and 5,500 kilometers, as well as the elimination of shorter-range intermediate nuclear force ("SRINF") missiles, with ranges between 500 and 1,000 kilometers.²¹⁰

²⁰⁵ *Id.* art. IV.

²⁰⁶ Treaty Between the United States of America and the Russian Federation in Strategic Offensive Reduction, U.S.-Russ. (May 24, 2002), *at* http://www.state. gov/t/ac/trt/18016.htm (last visited Feb. 18, 2005) [hereinafter the Moscow Treaty]. On Feb. 5, 2003, the U.S. Senate approved the Moscow Treaty by a unanimous vote. *Id.* The U.S. Senate then unanimously approved the U.S.-Russian Strategic Offensive Reductions Treaty on March 6, 2003. *Id.* As for the Russian Federation, the State Duma ratified the Treaty on May 14, 2003 by a 294-134 vote. *Id.*

²⁰⁷ Id.

²⁰⁸ The White House, Fact Sheet–Treaty on Strategic Offensive Reductions (May 2002), *at* http://www.whitehouse.gov/news/releases/2002/05/20020524-23.html (last visited Feb. 18, 2005).

²⁰⁹ U.S. Department of Defense Treaty on the Elimination of the Intermediate Range and Short Range Missiles, U.S.-U.S.S.R., 27 I.L.M. 84, Dec. 8, 1987, *available at* http://www.state.gov/t/np/trty/18432.htm (last visited Feb. 18, 2005). ²¹⁰ Id.

c. International Trade Treaties

Economic space treaties were a delicate attempt to balance the liberalization of trade in the space launch industry with the concerns of space national-security and the proliferation of weapons technology.²¹¹ The international space legal structure benefited from the process of trade liberalization, as this process expanded the global acceptance of the space treaties. However, the liberalization process also produced certain incidents of concern pertaining to the proliferation of what was considered by the United States as sensitive technology.²¹² The liberalization began in 1984 when President Reagan permitted the export of satellites for launch by European launchers.²¹³ This policy initiative was eventually expanded in 1989 to allow the launch of American satellites aboard Chinese launchers, namely, AUSSAT and ASIASAT.²¹⁴ However, at the time, China had not acceded to the Liability Convention. Thus, before allowing the satellites to be exported to China for launch, China and the United States signed a Memorandum of Agreement on Liability for Satellite Launches.²¹⁵ China also expressed, within the Memorandum, its intention to accede to the Liability Convention, thus facilitating future launches of American satellites. Other similar arrangements were also concluded with the Russian Federation in 1993²¹⁶ after the Russian Federation agreed to abide by the Mis-

²¹³ International Trade in Launch Services, supra note 211.

²¹⁴ Memorandum of Agreement Between China and the United States of America Regarding International Trade in Commercial Launch Services, Jan. 26, 1989, U.S.-P.R.C., 28 I.L.M. 596, 599; Memorandum of Agreement on Liability for Satellite Launches Between the Government of the United States of America and the People's Republic of China, Jan. 26, 1989, U.S.-P.R.C. 28 I.L.M. 596, 609.

²¹⁵ National Space Development Agency of Japan, *at* http://www.nasda.go.jp/ lib/space-law/chapter_3/3-2-2-8_e.html.

²¹⁶ Agreement Between the United States and Russia Amending the Agreement of Sept. 2, 1993, Regarding International Trade in Commercial Launch Services, Jan. 30, 1993, U.S.-Russ., State Dept. No. 96-37, *available at* http://www.

44

²¹¹ For an excellent analysis, see Hector Petrus van Fenema, The International Trade in Launch Services: The Effects of U.S. Laws, Policies and Practices on its Development, (1999) (unpublished Ph.D. thesis, Rijksuniversiteit te Leiden (Netherlands)) [hereinafter International Trade in Launch Services].

²¹² In 1997, allegations surfaced that China was obtaining military useful information by launching U.S. satellites. The charges concerned investigations into launch failures involving U.S. built satellites where two U.S. companies (Loral and Highes) allegedly assisted China in understanding the cause of the accidents and how to remedy them. The State Department has not granted any export licenses for sending communications satellites to China since then, and Chinese commercial space launch operations have consequently been suspended. *Id.*

sile Technology Control Regime.²¹⁷ The Ukraine acted similarly in 1995.²¹⁸ Presently, Europe, China, Ukraine, India, and Japan all offer satellite commercial launches. These agreements established quotas limiting the number of American satellites that could be launched from outside the territory of the United States. Also, in order to protect the American launch industry from what could have been unfair competition from non-market economies, the agreements also included pricing provisions.²¹⁹

d. Missile Technology Control Regime

The Missile Technology Control Regime ("MTCR") originated in 1987 and is designed to restrict the proliferation of nuclear-capable missiles and related technology.²²⁰ The regime was later expanded in 1993 to include missiles for the delivery of chemical or biological weapons.²²¹ It is important to stress that the MTCR is not a treaty but rather a voluntary arrangement between concerned states.²²² MTCR States apply a common ex-

jada.jp/jdal/library/space-law/chapter_4/4-2-2-14/index_e.html (last visited Feb. 22, 2005) [hereinafter the MTCR].

²¹⁷ Department of State, U.S. Missile Technology Control Regime Bureau of Nonproliferation (Jan. 7, 1993), available at http://www.state.gov/t/ac/trt/5073. htm (last visited Feb. 18, 2005). A Technology Safeguard Agreement was signed between the United States, the Russian Federation, and Kazakhstan prior to the first Russian launch of an American satellite. Marcia B. Smith, Resources, Science, and Industry Division Space Launch Vehicles: Government Activities, Commercial Competition and Satellite Exports (2003), available at http://usinfo.state. gov/usa/infousa/tech/space/launch.pdf (last visited Mar. 1, 2005). However, this agreement was signed only after Russia agreed to comply with the MTCR in a case involving a Russian company, Glavkosmos, that planned to sell rocket engine technology to the Indian Space Research Organization ("ISRO"). The United States declared it violated the MTCR and imposed two-year sanctions against Glavkosmos and ISRO. In June 1993, the United States threatened to impose sanctions against Russian companies that did business with Glavkosmos. The two countries finally agreed that Russia would cease transferring engine technology to India.

²¹⁸ *Id.*; *see also* Department of State, Fact Sheet Satellite Technology Safeguards Agreement (Jan. 26, 1999), *available at* http://www.fas.org/news/kazakh/99012604 (last visited Feb. 22, 2005).

²¹⁹ See Memorandum of Agreement Between the Government of the United States of America and the Government of the People's Republic of China Regarding International Trade in Commercial Launch Services, (Mar. 13, 1995), *at* http://www.nasda.go.jp/lib/space-law/chapter_4/4-2-2-13/index_e.html (last visited Mar. 1, 2005). See also van Fenema, supra note 211, at 183-244.

²²⁰ Missle Technology Control Regime, *at* http://www.mtcr.info/english (last visited Aug. 16, 2005).

²²¹ Id.

²²² Id.

port control policy ("MTCR Guidelines") on an agreed-upon list ("MTCR Annex").²²³ As of December 1, 2003, thirty-three states have adhered to the MTCR.²²⁴ The regime has had mixed success.²²⁵ The MTCR has been criticized by the non-member States as being a cartel, impeding the development of their own space national-security capabilities.²²⁶

²²⁵ According to the Carnegie Endowment for International Peace, the MTCR has a history of mixed failures and success. The failures include "missile developments in North Korea, India, and Pakistan," while successes include "the suppression of the Argentine, Egyptian, and Iraqi Condor II ballistic missile program, and South African and Central European missile activities." Carnegie Endowment for International Peace, *How Effective is the Missile Technology Control Regime*?, *at* http://www.ceip.org/files/publications/ProliferationBrief407.asp (Apr. 12, 2001).

²²⁶ For example, the Pakistan Mission to the UN presented a paper arguing that:

[a]rms control and non-proliferation regimes are established ostensibly to attenuate the threats to international peace and security posed by the spread of sensitive or dual-use equipment and technology. Over the last twenty-five years, industrially advanced states have made determined efforts to achieve these objectives by enforcing export restrictions through supplier's cartels. The institutionalization of such cartels, such as the Zangger Committee, the London Club, the Australia Group, the Missile Technology Control Regime, and the latest Wassenaar Arrangement, have led to a debate about the effectiveness and legitimacy of these arrangements . . . Firstly, the MTCR is not a negotiated multilateral treaty. It is a cartel formed by some industrialized countries for the purpose of placing controls on the transfer of technology, which could contribute to the manufacture of ballistic missiles with nuclear weapon delivery systems. There is no commitment on the part of the originators of the MTCR to engage in good faith efforts to eliminate ballistic missiles globally. It is, therefore, essentially an arrangement for promoting their own security interests only . . . Secondly, the MTCR has been selectively implemented by the supplier states. The serious international controversy in late 1989 over the implementation of the MTCR, not only exposed the arbitrary nature of the application of the regime, but also cast serious doubts on its credibility. Over strong U.S. objections, France insisted on its right to proceed with the sale to Brazil of liquid fuel technology, and it was only after two years of dispute that the contract was finally suspended. As against that, Germany's involvement in developing guidance technology for the Indian "Agni" intermediate range missile continued

. . . Thirdly, its legitimacy is questionable. The MTCR does not fulfill the requirements of equity, non-discrimination, and equal security for all states, all of which are essential elements in establish-

²²³ Missile Technology Control Regime, Equipment, Software and Technology Annex (Oct. 7, 2004) at http://www.mter.info/english/Annex2005-001.pdf.

²²⁴ See U.S. Department of State, Bureau of Non-Proliferation, Fact Sheet (December 23, 2003), available at http://www.state.gov/t/np/rls/fs/27514pf.htm.

2. Treaties Applicable During International Armed Conflict

International humanitarian law, also known as Law of Armed Conflict ("LOAC"), is applicable to the use of force to, within, and from outer space. LOAC has a distinct status within the *corpus* of space national-security law. The distinctiveness of LOAC stems from the fact that LOAC is hard law, identifiable and subject to sanctions enforceable by courts.²²⁷

ing durable and credible international agreements in the field of disarmament. The attempt by some countries to elevate the MTCR to the level of a multilateral disarmament agreement, or to characterize it as codifying international law, creates serious difficulties. Since the MTCR is not a treaty with specific rights and obligations, it has remained just a political instrument which functions in a discriminatory manner, and may even have prevented the establishment of a more stable system of international-security.

Permanent Representative of Pakistan to the United Nations, Missile Technology Control Regime – Its Destabilizing Effect on South Asia (July 23, 1997), *at* http://www.un.int/pakistan/13970723.htm. Seema Gahlaut writes that:

It continues to be a 'club' and many of its provisions remain problematic for the space programmes of states such as India. Yet, several notable developing countries have joined the MTCR and China has agreed to abide by some of its guidelines. Indeed, it is under this agreement that China has promised to curtail its missileexports to Pakistan and North Korea. States with substantial space and missile programmes, which remain outside the MTCR's framework, have claimed that its provisions infringe on their sovereign right to develop and/or export such technologies. Both India and North Korea fall in this category.

Seema Gahlaut, India and the MTCR, The Hindu (Aug. 14, 1999), *at* http://www.indianembassy.org/press/New_Delhi_Press/August_1999/India_MTCR_August_14_1999.htm (last visited Mar. 1, 2005).

²²⁷ Justice James E. Baker of the United States Court of Appeals for the Armed Forces eloquently describes the LOAC and its relation to military command:

First the LOAC is hard law; that is it is identifiable and subject to effective sanction in US criminal law and in international law. Second, the LOAC is realistic law that relies on contextual principles adaptable to changing circumstances. Third, the LOAC is good policy and usually consistent with military effectiveness. In many contexts there are good policy reasons to restrict the manner in which a target is attacked that go beyond limitations required by the LOAC. As a result, a process of target decision entails the exercise of policy discretion as well as legal judgment and military command.

James E. Baker, The Role of the Lawyer in War: LBJ's Ghost: A Contextual Approach to Targeting Decisions and the Commander in Chief, 4 CHI. J. INT'L L. 407, 407-08 (2003).

The fundamental principles of LOAC are proportionality, humanity, discrimination, and military necessity.²²⁸ LOAC is mainly composed of two systems of law woven from these principles: the Geneva system and the Hague system. The Geneva system is primarily concerned with maintaining human security and dignity during armed conflicts. The Hague system is centered upon the legitimacy of the means and methods of conducting hostilities. The International Court of Justice (ICJ) in the Nuclear Weapons Case has recognized the universal nature of this body of law as customary international law.²²⁹ The Hague system has a specific disposition that can be directly applicable to the security of space assets.

Article 27 of the Annex to Hague IV, offers protection from intentional attack to buildings dedicated to science, provided they are not being used at the time for military purposes.²³⁰ Article 27 of the Annex to Hague IV can be interpreted to offer additional protection to purely scientific satellites and their respective ground stations. Furthermore, this article creates an obligation for the belligerent State controlling such scientific buildings to indicate these by the use of visible signs and to notify the enemy beforehand. Thus, satellites and their architecture that are used for science and not for military purposes, must be properly identified in order to benefit from their protected status.

Additional Protocol I to the Geneva Conventions (AP I) also contains dispositions that have a direct impact on space national-security. Article 35.3 states that "it is prohibited to employ methods or means of warfare which are intended or may be expected to cause widespread, long-term and severe damage to the natural environment." Within AP I, article 35, the natural envi-

²²⁸ Michel Bourbonniere, Law of Armed Conflict (LOAC) and the Neutralisation of Satellites, 9 J. CONFLICT & SECURITY L. 43, 47-51 (2004).

²²⁹ Advisory Opinion, Legality of the Threat or Use of Nuclear Weapons, 1996 I.C.J. 226, 248-56 (July 8) [hereinafter Nuclear Weapons Case].

²⁵⁰ Annex to the Convention Regulations Respecting the Laws and Customs of War on Land, art. 27, 36, stat. 2277 (Oct. 18, 1908), *reprinted in* DOCUMENTS ON THE LAWS OF WAR 78 (Adam Roberts & Richard Guelff eds., Oxford University Press 3d ed. 2000) [hereinafter DOCUMENTS ON THE LAWS OF WAR]. It is important to note that "[t]he Nuremberg International Military Tribunal had already found in 1945 that the humanitarian rules included in the Regulations annexed to the Hague Convention IV of 1907 "were recognized by all civilized nations and were regarded as being declaratory of the laws and customs of war." 1 INTERNA-TIONAL WAR TRIBUNAL, TRIAL OF THE MAJOR WAR CRIMINALS, 14 NOVEMBER 1945 1 OCTOBER 1946, 246 (Nuremberg), (1947); see also Nuclear Weapons Case, supra note 229, at 257.

ronment is itself the object of protection. AP I, article 35 is concerned with the consequences of the use of any weapon, whatsoever, be it a kinetic or directed-energy weapon, and is thus applicable to sophisticated space weaponry. Furthermore, the conditions that result from the use of the weapon are expressed within AP I as being cumulative. In other words, the damage to the natural environment must be, at the same time, widespread, long-term, and severe.

Perfidy is an essential concept that permeates LOAC. "Perfidy" is the hostile use of a belligerent's obligation to respect LOAC in order to kill, wound or capture another belligerent.²³¹ It is important not to confuse an act of perfidy with a ruse of war, which is legal. The registration of a military satellite under the Registration Convention as a civilian satellite would be a violation of IHL, feigning civilian status, and could, depending upon the use of the satellite, become an act of perfidy. An attack on satellite signals that would alter the content of the communication must not mislead the enemy as to the legal status of a belligerent, as this could also be considered an act of perfidy.

The development of a space weapon presupposes much research, development, and testing. AP I, article 36 imposes certain rules pertaining to the development of new weapons. In the development of new weapons, a state must verify whether its employment would, in some or all circumstances, be prohibited by the Protocol or by any other rule of international law. Regrettably, several important space powers, including the United States, India, and Pakistan, have either not signed or not ratified the Additional Protocol I.

The use of force to, from, and within space can only be exercised against legitimate military objectives. Considering that civilian commercial space assets have a dual use, and often have military clients, the determination of a legitimate military objective in outer space can be quite complicated. Within the document, *Rebuilding America's Defenses, Strategy, Forces and Resources For a New Century*, the author advocates targeting commercial space assets in order to prevent enemy use of these assets.²³²

²³¹ Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I), art. 37, 1125 U.N.T.S. 3 (Dec. 12, 1977), *reprinted in* DOCUMENTS ON THE LAWS OF WAR, *supra* note 230, at 447 [hereinafter AP I].

²³² Project for the New American Century, *Rebuilding America's Defenses, Stragety, Forces and Resources* (Sept. 2000), *at* http://www.newamericancentury.org/repub licamericasdefenses.pdf.

The point of concern is that the targeting of these commercial assets is advocated irrespective of their nationality. A Bush doctrine use of pre-emptive force against the space assets of a neutral state could be a violation of the laws of neutrality. A more recent publication by the United States Air Force presents a more balanced perspective on this issue, advocating the use of economic and diplomatic means to deny enemy use of third party commercial space assets.²³³ Certain dual-use space assets are easily discernible as legitimate military objectives, such as communication, remote sensing, and navigation satellites. These assets can easily be construed as having an effective contribution to military action. Targeting is more dubious in the case of a meteorological satellite. A meteorological satellite can be more easily construed as a vital civilian infrastructure. Furthermore, given the capability of armies to operate in various weather conditions, the military advantage of neutralizing a meteorological satellite remains questionable.

The corpus of International Humanitarian Law also contains certain dispositions concerning inquiries which can apply to military space activities during an international armed conflict. In particular, the Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field of 1949 proscribes in Article 52 that a party to a conflict may request that an inquiry be instituted concerning alleged violations of the Convention. Should this Convention be breached during the conduct of space military operations during an international armed conflict, in inquiry on the breach could take place.²³⁴

The ENMOD Convention prohibits the hostile use of Environmental Modification Techniques (EMT).²³⁵ Prohibited EMTs include "any techniques for changing-through the deliberate manipulation of natural processes-the dynamics, composition, or structure of the earth, including its biota, lithosphere, hydrosphere, and atmosphere, or of outer space."²³⁶ An "understand-

236 Id. art. II.

²³³ Air Force Doctrine Document 2-21, *Counterspace Operations* (Aug. 2, 2004), *at* http://www.dtic.mil.doctrine/jel/service_pubs/afdd2_2_1.pdf.

²³⁴ See also Geneva Convention for the Amelioration of the Condition of Wounded, Sick, and Shipwrecked Members of the Armed Forces at Sea, Aug. 12, 1949, art. 53, 6 U.S.T. 3217, 75 U.N.T.S. 85.

²³⁵ The Convention on the Prohibition of Military or any other Hostile Use of Environmental Modification Techniques, art. I, 31 U.S.T. 333, T.I.A.S. 9614, 1108 U.N.T.S. 157 (May 18, 1977), *available at* http://www.state.gov/t/ac/trt/4783. htm (last visited Aug. 17, 2005) [hereinafter the ENMOD].

ing" relating to Article II, which is part of the negotiating record, includes "changes in the state of the ozone layer and changes in the state of the ionosphere."²³⁷

The ENMOD prohibits technologies whose use would have "widespread, long-lasting or severe effects."²³⁸ "'Widespread' is defined as encompassing an area of several hundred square kilometers; 'long-lasting' is defined as lasting approximately a season; and 'severe' is defined as involving significant disruption or harm to human life, natural and economic resources or other assets."²³⁹

Although the ENMOD and AP I, article 35 use identical verbiage, their meanings have been conventionally defined as being different. For example, within AP I, the term "*long-term*" is interpreted to mean lasting decades.²⁴⁰

The 1980 U.N. Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects,²⁴¹ and its 1995 Protocol IV on Blinding Laser Weapons,²⁴² can have an impact on space weaponry should a spacecapable laser be specifically designed to cause permanent blindness to humans.

3. Space National-security and Disarmament Law

There are three fundamental documents on international disarmament. Although these do not specifically address the legality of space-capable weapons, they are important to the debate concerning space-capable weapons and space national-security.

These are:

²³⁷ Id.

²³⁸ Id. art. I.

²³⁹ Id. (defining these terms within the Narrative).

²⁴⁰ See ICRC Commentary. AP I, at ¶1453.

²⁴¹ Convention on Prohibition or Restrictions on the Use of Certain Conventional Weapons which may be Deemed to be Excessively Injurious or to Have Indiscriminate Effects, 1342 U.N.T.S. 137, 19 I.L.M. 1523 (Apr. 10, 1981), *reprinted in* DOCUMENTS ON THE LAWS OF WAR, *supra* note 230, at 520.

²⁴² Protocol on Blinding Laser Weapons, Oct. 13, 1995, 35 I.L.M. 1218, *reprinted in* DOCUMENTS OF THE LAWS OF WAR, *supra* note 230, at 535.

a. The Declaration on Principles of International Law Concerning Friendly Relations and Co-operation Among States in Accordance with the Charter of the United Nations.²⁴³

The Declaration states that all States shall pursue, in good faith, negotiations for the early conclusion of a universal treaty on general and complete disarmament under effective international control, and strive to adopt appropriate measures to reduce international tensions and to strengthen confidence among States.²⁴⁴

b. Final Document, Special Session of the General Assembly on Disarmament 1978.²⁴⁵

The Final document declares that an:

Arms race, particularly in its nuclear aspect, runs counter to efforts to achieve further relaxation of international tension, to establish international relations based on peaceful coexistence and trust between all States and to develop broad international cooperation and understanding. The arms race impedes the realization of the purposes, and is incompatible with the principles, of the Charter of the United Nations, especially respect for sovereignty, refraining from the threat or use of force against the territorial integrity or political independence of any State, peaceful settlement of disputes and non-intervention and non-interference in the internal affairs of States.²⁴⁶

The document continues the argument, stating that "[d]isarmament, relaxation of international tensions, respect for the right to self-determination and national independence, the peaceful settlement of disputes in accordance with the Charter of the United Nations, and the strengthening of international peace and security are directly related to each other."²⁴⁷

The document then argues that: "[e]nduring international peace and security cannot be built on the accumulation of weaponry by military alliances nor be sustained by a precarious bal-

52

²⁴³ Declaration on Principles of International Law Concerning Friendly Relations and Co-operation Among States in Accordance with the Charter of the United Nations, G.A. Res. 2625, U.N. GAOR, 25th Sess., Annex, Supp. No.28, at 121, U.N. Doc. A/5217 (1970).

²⁴⁴ Id. at 123.

²⁴⁵ Available at http://www.un.org/documents/ga/res/33/ares33.htm.

²⁴⁶ Id.

²⁴⁷ Id.

ance of deterrence or doctrine of strategic superiority,"²⁴⁸ and that:

all States have the duty to contribute to efforts in the field of disarmament. All States have a right to participate in disarmament negotiations. They have the right to participate on an equal footing in those multilateral disarmament negotiations, which have a direct bearing on their national-security. While disarmament is the responsibility of all States, the nuclear weapon States have the primary responsibility for nuclear disarmament and together with other military significant States for halting the arms race.²⁴⁹

The document concludes with a paragraph, wherein, State members of the U.N. "solemnly reaffirm their determination to make further collective efforts aimed at . . . halting and reversing the arms race."²⁵⁰

c. The Nuclear Weapons Test Case²⁵¹

In Paragraph 99, the International Court of Justice ("ICJ") declares that it appreciates the importance of the recognition of Article IV of the NPT to negotiate nuclear disarmament in good faith.²⁵² The ICJ opined in paragraph 102, stating that the "obligation expressed in Article VI of the NPT includes its fulfillment in accordance with the basic principle of good faith . . . set forth in Article 2, paragraph 2 of the Charter . . . [and] reflected in the Declaration on Friendly Relations Between States."²⁵³ As well, U.N. Security Council Resolution 984 from 11 April 1995 affirms "the need for all states party to the Treaty on the Nonprolifertation of Nuclear Weapons to comply fully."²⁵⁴

²⁴⁸ Id.

²⁴⁹ Id.

²⁵⁰ Id.

²⁵¹ See Nuclear Weapons Case, supra note 229, at 830.

²⁵² See NPT, supra note 159.

²⁵³ Nuclear Weapons Case, *supra* note 229, at 830; *see* Declaration and Principles of International Law Concerning Friendly Relations and Co-operation Among States, G.A. Res. 2625, U.N. GAOR, 25th Sess., Annex, Supp. No.28, at 121, U.N. Doc. A/5217 (1970), *available at* http://www.tamilnatum.org/selfdeter mination / instruments / 2625GAdeclarationofprinciplesofinternationallaw.htm; *see also* The Final Act of the Conference on Security and Cooperation in Europe, 14 I.L.M. 1292 (Aug. 1, 1975) [hereinafter Helsinki Declaration].

²⁵⁴ S.C. Res. 924, U.N. SCOR, U.N. Doc. S/RES/984 (1995) *available at* http://daccessdds.un.org/doc/UNDOC/GEN/N95/106/06/PDF/N9510606.pdf (last visited Mar. 1, 2005).

These documents, taken together, provide an interesting argumentation for disarmament. Nonetheless, the argumentation remains ineffective as these documents fail to prove a rule of customary international law in favor of international disarmament. The coup de grace to the argumentation lies in its incapacity to provide the required opinion juris et necessitates for the creation of an international customary norm. Articles 51, 52, 53 and 54 of the U.N. Charter codify the right of self-defense of States.²⁵⁵ It is important to note that the dispositions of the U.N. Charter that deal with disarmament do not impose any obligations to disarm. Article 11 of the U.N. Charter states that the General Assembly may "consider general principles of co-operation in the maintenance of international peace and security, including the principles governing disarmament."²⁵⁶ Article 11 gives more power to the U.N. Security Council, declaring it "responsible for formulating with the assistance of the military staff Committee referred to in Article 47, plans to be submitted to the Members of the United Nations for the establishment of a system for the regulation of armaments."257

4. Space National-security and the U.N. system

The United Nations Security Council has not been called upon to address directly issues of space national-security. Nonetheless, a 1995 U.N. Security Council Resolution does have some impact on space national-security. In 1995, the Security Council adopted Resolution 984 on security assurances against the use of nuclear weapons.²⁵⁸ The Resolution states "any aggression with the use of nuclear weapons would endanger international peace and security."²⁵⁹ Furthermore, the Security Council takes note of the statements made by the nuclear-weapon States in which they give security assurances against the use of nuclear weapons, in general, and hence in outer space, to non-nuclear-weapons states that are parties to the NPT.²⁶⁰

The United Nations General Assembly ("UNGA") has been more active on outer space military issues. The General Assembly passes an annual resolution on the Prevention of an Arms

²⁵⁵ U.N. CHARTER, arts. 51-54.

²⁵⁶ Id. art. 11.

²⁵⁷ Id.

²⁵⁸ G.A.S. Res. 984, U.N. Security Council, S/RES/984 (1995), available at http://www.un.org/docs/sres/1995/scres95.htm.

 $^{^{259}}$ Id.

²⁶⁰ Id.

Race in Outer Space. Within the text of the resolution, the UNGA states that the prevention of an outer space arms race would avert a grave danger for international peace and security, and calls on all States, in particular those with major space capabilities, to contribute actively to the objective of the peaceful use of outer space and the prevention of an arms race in space. The latest resolution was adopted by a recorded vote of 174 in favor, to none against, with four abstentions (Federated States of Micronesia, Israel, Marshall Islands, United States).²⁶¹ There appears to be an international consensus concerning the importance of preventing an arms race in space. Nonetheless the major space power, the United States, does not share this concern as it abstained from the vote.

The General Assembly also adopted a resolution on missiles.²⁶² The resolution articulated a concern for a concerted approach towards missiles in a balanced and non-discriminatory manner as a contribution to international peace and security.²⁶³ The resolution also requested the Secretary General, with the assistance of a panel of governmental experts, to be established in 2004, to explore further the issue of missiles in all its aspects and to submit a report to the General Assembly's 59th Session.²⁶⁴

The Conference on Disarmament ("CD") was established in 1979, and is the principal multilateral forum for the discussion and negotiation of disarmament treaties.²⁶⁵ In fact, the CD was a result of the first Special Session on Disarmament of the

²⁶¹ Press Release, 58th U.N. General Assembly Proliferaton of 'Non-Strategic' Nuclear Weapons, New Agenda for Disarmament Among Issues, as General Assembly Adopts 52 First Committee Texts, U.N. Doc. GA//0217 (Aug. 12, 2003), *available at* http://www.un.org/News/Press/docs/2003/ga10217.doc.htm (last visited Mar. 1, 2005).

²⁶² G.A. Res. 58/37, U.N. GAOR, 58th Sess., U.N. Doc. A/RES/58/37 (2003). The Resolution was adopted by a recorded vote of 113 for, three against (Federated States of Micronesia, Israel, United States), and fifty-six Abstentions. Press Release, *supra* note 261.

 ²⁶³ G.A. Res. 58/37, U.N. GAOR, 58th Sess., U.N. Doc. A/RES/58/37 (2003).
²⁶⁴ Id.

²⁶⁵ Multilateral negotiations at the CD and its predecessor have led to the signing of several treaties, namely: the 1970 Nuclear Nonproliferation Treaty, the 1972 Seabed Arms Control Treaty, the 1972 Biological and Toxin Weapon Convention, the 1977 ENMOD Convention, the 1992 Chemical Weapons Convention, and the 1996 Comprehensive Test Ban Treaty. The Conference on Disarmament: An Introduction to the Conference, *at* http://www.unog.ch/80256EE600585943/(httppages)/

BF18ABFEFE5D344PC12563100311CE9?opendocument (last visited Aug. 17, 2005) [hereinafter Introduction to the CD Conference].

United Nations General Assembly held in 1978.²⁶⁶ The CD meets in annual sessions divided into three parts, the first of which lasts 10 weeks, and the other two, seven weeks each.²⁶⁷ The CD has a rotating presidency among its member States by alphabetical order.²⁶⁸ The CD conducts its work and adopts its decisions by consensus.²⁶⁹

The CD was originally constituted of forty members.²⁷⁰ Its membership has subsequently been expanded to sixty-five countries representing all geographical regions and including the five nuclear weapon states who are also the major space faring nations (U.S.A., France, Russian Federation, U.K., China).²⁷¹ All member states participate in the work of the CD under conditions of full equality as independent states.²⁷²

The CD began in 1985 to work on space arms control issues.²⁷³ The main issue presently within the CD that affects space security is the Prevention of an Arms Race in Outer Space ("PAROS"). The CD is presently at a deadlock on PAROS.²⁷⁴ The paralysis results from a disagreement between key players on the prioritization of these PAROS, and the work on the Fissile Material Cutoff Treaty ("FMCT").²⁷⁵ Further complications have resulted from attempts to link progress on PAROS with a parallel progress in FMCT negotiations.²⁷⁶ For the fifth consecutive year, the CD was "not able to reach agreement on a programme of work," and was "unable to start work on substantive issues."²⁷⁷ Secretary General Kofi Anan has expressed concern on the protracted lack of agreement on the program of work

²⁷¹ Id.

56

²⁶⁶ Id.

²⁶⁷ See Rules of Procedure of the Conference on Disarmament, Conference on Disarmament, U.N. Doc. CD/8/Rev.8 (Dec. 19, 2003), available at http://www.unog. ch/disarm/cdproced.htm (last visited Mar. 1, 2005) [hereinafter Rules of Procedure].

²⁶⁸ In 2003, the rotating Presidency came to Iraq and Iran.

²⁶⁹ Rules of Procedure, supra note 267, art. VI.18.

²⁷⁰ Introduction to the CD Conference, *supra* note 265.

²⁷² Rules of Procedure, supra note 267, art. I.3.

²⁷³ The Conference on Disarmament Concludes Another Frustrating Year, 73 Disarmament Dipl. (Oct.-Nov. 2003), at http://www.acronym.org.uk/dd/dd73/73op04. htm.

²⁷⁴ Id.

²⁷⁵ Id.

²⁷⁶ Id.

²⁷⁷ Press Release, Conference on Disarmament to Open 2004 Session on 19 January (Jan. 16, 2004), *at* http://www2.unog.ch/news2/documents/newsen/dc04001e.htm.

and has called upon the member states to show a renewed political will and determination to break the paralysis.²⁷⁸

The International Telecommunications Union ("ITU") is the oldest agency of the United Nations, predating the U.N. Charter itself. Nonetheless, the most recent treaty document was adopted in 1992, and its constitution was also recently adopted.²⁷⁹ The ITU, through its Radio Regulations Board ("RRB"), regulates the international use of the radio spectrum, which is considered to be a limited natural resource.

Under Article 48 of the ITU Constitution, member States maintain their entire freedom concerning military radio installations. Nonetheless, military radio installations must, so far as possible, observe measures to prevent harmful interference.²⁸⁰ The ITU Constitution also codifies the right of States to impede the transmission of any private telegram or telecommunications, in whole or in part, which may appear dangerous to the security of the State or contrary to its laws.²⁸¹ Such stoppage of communications must be immediately notified to the ITU, unless such notification also poses a danger to the security of the State. Subject to telecommunications concerning the safety of life or distress calls and messages, Article 41 of the ITU Constitution grants government telecommunications a right of priority over other telecommunications.²⁸² Government telecommunications are defined within the Annex to the ITU Constitution as including those originating from a head of state, head of government

²⁷⁸ Press Release, U.N. Secretary-General, Revitalizing Conference on Disarmament Requires Renewed Political Will Determination, Says Secretary-General, U.N. Doc. SG/SM/8584 (Jan. 21, 2003), *available at* http://www.unis.unvienna. org/pressrels/2003/sgsm8584.htm (last visited Aug. 17, 2005).

²⁷⁹ Convention of the International Telecommunication Union, International Telecommunications Union, *available at* http://www.ito.int/aboutitu/basic-texts/convention.html [hereinafter ITU Convention]; Constitution of the International Telecommunications Union, International Communications Union, *available at* http://www.itu.int/aboutitu/basic-texts/constitution.html [hereinafter ITU Constitution]. For an excellent description of the role of ITU, see Francis Lyall, Communications Regulations: The Role of the International Telecommunication Union, 3 J.L. & TECH (1997).

²⁸⁰ ITU Constitution, *supra* note 279, art. 48 ¶ 203.

²⁸¹ Id. art. 34, ¶¶ 180-81; see also THOMAS C. WINGFIELD, THE LAW OF INFORMA-TION CONFLICT: NATIONAL-SECURITY LAW IN CYBERSPACE 322-37 (Acgis Research Corporation 2000); see also ITU Workshop on Creating Trust in Critical Network Infrastructures, A Collective Security Approach to Protecting the Global Critical Infrastructure, ITU Doc. CNI/09 (May 20, 2002).

²⁸² ITU Constitution, supra note 279.

or members of a government, or commanders-in-chief of military forces (land, sea, or air).²⁸³

The term "harmful interference" is defined within the Annex to the ITU Constitution as "interference, which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunication service operating in accordance with Radio Regulations."²⁸⁴

5. Interpretation of "National Technical Means"

Certain space national-security treaties contain a protective envelope for "national technical means" of verification.²⁸⁵ The concept "national technical means" includes space-based assets, such as intelligence or Earth remote-sensing satellites.²⁸⁶ The important question to be determined is whether the treaty-based protective envelope concerning "national technical means" can be expanded to include commercial remote-sensing satellites. The possible expansion of this protective envelope to include commercial remote sensing satellites will be contingent on the interpretative evolution of "national technical means." The possible interpretive evolution of the concept "national technical means" may occur on three different levels. The first level of interpretation, namely a restrictive interpretation, would cause an exclusion from the protective envelope of commercial satellites owned by nationals of the signatory states. A restrictive interpretation would thus maintain the protective envelope only for intelligence satellites owned by governments that are parties to the treaty. On a second level of interpretation, a more expansive interpretation could include within the protective envelope the commercial satellites of the signatory States from which the State party purchases earth remote-sensing data, but would exclude foreign-owned earth imaging satellites from the protective envelope. On a third level of interpretation, a very expansive interpretation would seek to include in the protective envelope all commercial imaging satellites from which a signatory government purchases verification data. The first level of interpretation, following a more literal interpretation, is certainly logical

²⁸³ Id.

²⁸⁴ ITU Constitution, *supra* note 279.

²⁸⁵ See Article by Article Analysis of the Treaty Text, at http://www.fas.org/ nuke/control/start1/text/abatext.htm (last visited Aug. 17, 2005) (analyzing Article IX of the TART Treaty).

²⁸⁶ Id.

with the text, but probably could be deemed not reasonable, as it could be cogently argued that an overly restrictive interpretative posture would not be in conformity with the intention of the contracting states.²⁸⁷ The third level of interpretation is most probably overly expansive, as it would result in a treaty that would include the protection of satellites under the jurisdiction and control of a third state.²⁸⁸ The second level of interpretation is probably the most reasonable interpretation. The second level of interpretation is certainly textually logical and probably conforms the most with the intent of the signatories. This exclusion from the protective envelope nonetheless creates a comparative competitive disadvantage to non-U.S. satellites that want to sell data to the U.S. military, such as SPOT or RADARSAT. From a commercial paradigm, the resulting perspective is that of an increased business risk for non-U.S. satellites. Lastly, it is important to note that the CFE treaty presents a textual evolution of the protective envelope as the protective envelope within the CFE also includes multinational technical means. The CFE protective envelope is, however, limited to verification for ensuring compliance with the treaty. The question can also be asked, in the case of the CFE, as to the possible inclusion of private commercial satellite ventures within the protective envelope of multinational technical means.

III. CONCLUSION

A symbiotic relationship exists between military-use of outer space and the U.N. Charter. The symbiosis is seen in the fact that outer space military technology has both influenced the interpretation of the U.N. Charter, while simultaneously being subject to the U.N. Charter. The influence of space military technology upon the U.N. Charter is seen in the interpretative history of Article 51 of the U.N. Charter. An exceptical analysis of Article 51 limits the right of self-defense in cases of "armed

²⁸⁷ Art. 31.1 of the Vienna Convention on the Law of Treaties states that "A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose." Vienna Conventions on the Law of Treaties, May 23, 1969, art. 31.1, 1155 U.N.T.S. 331, *available at* http://www.un.org/law/ik/text/treaties.htm (last visited Mar. 1, 2005) [hereinafter Vienna Convention].

²⁸⁸ A third state is defined in the Vienna Convention as a state not party to the treaty. *Id.* art. 2.1(h). Furthermore, this would probably be a violation of the fundamental principle that a treaty applies only between the parties to it. Brownlie, *supra* note 7, at 619.

attack." The drafting history of Article 51 supports this interpretation, as the drafters attempted to close the door on anticipatory self-defense.²⁸⁹ Nonetheless, the practice of States has proven different. Military space technology through the use of ICBM rendered the restrictive interpretation of Article 51 untenable, resulting in the legitimacy of an anticipatory self-defense interpretative premise.

Article 42 of the U.N. Charter does not make reference to space assets. Nonetheless, the UN Charter has proven to be a living document with a capacity to adapt to the evolution of national-security concerns.²⁹⁰ A restrictive interpretation of Article 42 of the U.N. Charter would probably be considered by most as incorrect.

Certain historical events have had an important influence on the development of space national-security law. First, there was the Cold War. The space treaties were negotiated during the Cold War epoch of systemic competition. The space treaties reflect the national-security concerns of that epoch, attempting to deal with competing security concerns, while establishing safe access to space. The space treaties contributed significantly to creating a legal matrix regulating national-security in space. Space treaties have received wide accession. On this point, it is interesting to note that the United States considers the right to transit outer space as a norm of customary international law.²⁹¹

Other important historical events that influenced the development of space national-security law are the break-up of the U.S.S.R., the liberalization of international trade, the proliferation in weapons of mass destruction, and launch capabilities.²⁹² The geopolitical environment has mutated since the epoch of a bi-polar and bi-power conflict to one with an increase of ballistic missile threat from a multiplicity of State actors. This concern affected the instruments that deal in the international trade in

²⁸⁹ FRANK, *supra* note 6, at 50.

²⁹⁰ See Simma, supra note 16; Certain Expenses of the United Nations Case, 1962 I.C.J. 151 (July 20) (authorizing peacekeeping).

²⁹¹ The United States considers the space systems of any State to be national property with the right of peaceful passage through space without interference. National Science and Technology Council, The White House, Fact Sheet: National Space Policy, *available at* http://ostp.gov/NSTC/html/fs/fs-5.html (last visited Mar. 1, 2005).

²⁹² See National Intelligence Council, Foreign Missile Developments and the Ballistic Missile Threat Through 2015, Unclassified Summary of a National Intelligence Estimate (Dec. 2001), available at http://www.cia.gov/nic/PDF_BIF_ otherprod/missilethreat2001.pdf (last visited Mar. 1, 2005).

launch services, such as the MTCR. The MTCR is, however, proving to be somewhat controversial. The MTCR is greatly appreciated as an important contribution to space national-security by those who participate in the select club. On the other hand, the MTCR is perceived by states that do not participate in it as a restrictive cartel impeding the development of their own space national-security capabilities.²⁹³

The historical events have forced an evolution in the space national-security normative matrix. The evolution has occurred in various ways. For example, in reaction to events, certain State actors have sought to alter the interpretation of normative instruments. The reinterpretation of the ABM was perhaps the most eloquent example of such a reaction.²⁹⁴ Another reaction to change has been States' withdrawal from certain international agreements deemed inadequate within the new security context. Perhaps the best example of such a reaction is the United States' withdrawal from the ABM Treaty. Other reactions followed. The Chinese and Russians have reacted by attempting to create new normative instruments by proposing a treaty on the Prevention of an Arms Race in Outer Space. On the institutional level, certain institutions are experiencing difficulties in adapting to these changes. Perhaps the best example is the Conference on Disarmament, which is presently stalemated in a diplomatic zugzwang.

The testing of weapons in space causes an interesting problem. An analogy between the freedom of exploration and use of outer space, and the freedoms enjoyed by nations on the high seas illustrates the issues. There are two perspectives on the legitimacy of testing weapons, which would result in the closure of large areas of the oceans.²⁹⁵ Some argue that such tests are an exercise in freedom of the seas; others argue that it is a denial of the freedom. This debate can easily be transported to outer space. Brownlie argues that this is a debate of reasonableness and mutuality and that these principles apply in times of war as well as in times of peace.²⁹⁶ In any case, the principle of "due regard" applies in outer space. Article IX of the OST edicts that "State Parties . . . shall conduct their activities . . . with due regard to the corresponding interests of all other State Parties to

²⁹³ Permanent Representative of Pakistan to the United Nations, *supra* note 226.

²⁹⁴ See Sofaer, supra note 182.

²⁹⁵ BROWNLIE, *supra* note 7, at 239.

²⁹⁶ Id. at 239-40.

the Treaty."²⁹⁷ In certain cases, Article IX would require consultations. This would apply to the weaponization of space and to the conduct of hostilities in outer space. Furthermore, nuclear weapon testing in space has been banned,²⁹⁸ which would apply to the testing of nuclear ASAT technologies.

Although some arms control treaties complete the space treaties, from a general perspective, there appears to be a lack of cohesiveness between space treaties, arms control treaties, and LOAC treaties, which impact space national-security. This lack of cohesiveness creates ambivalence and a cognitive dissonance within the legal structure. As a result, the normative effect is weakened.

The law affecting space national-security remains treaty-based. Most treaties date from the Cold War epoch. Paradigms in space exploitation have evolved towards a greater commercial use of space. Treaties are slow to change to reflect this paradigmatic evolution. The slow pace with which treaty law evolves in relation to the rapidity with which the space milieu evolves creates a disconnect between the normative structure and the reality of space activities. The result is a reduction in the effectiveness in outer space national-security law.

²⁹⁷ OST, supra note 8, art. IX.

²⁹⁸ Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water, 14 U.N.T.S. 43, 2 I.L.M. 889 (Aug. 5, 1963); *see* Declaration on the Prohibition of the Use of Nuclear and Thermo-Nuclear Weapons, G.A. Res. 1653, U.N. GAOR, 16th Sess., Supp. No. 17, at 4, U.N. Doc. A/5100 (1961); *see also* Resolution on the Non-Use of Force in International Relations and Permanent Prohibition of the Use of Nuclear Weapons, G.A. Res. 2936, U.N. GAOR, 27th Sess., Supp. No. 30, at 5, U.N. Doc A/8730 (1972); *see also* Resolution on the Non-Use of Nuclear Weapons and Prevention of Nuclear War, G.A. Res. 35/ 152D, U.N. GAOR, 35th Sess., Supp. No. 48, at 69, U.N. Doc. A/35/48 (1980).