INTERNATIONAL SPACE LAW: An Overview of Law and Issues

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INTRODUCTION

The space age has brought with it the excitement and drama of exploration and compelling tales about the people and technology that have made it possible. From the advent of space flight beginning with Sputnik, then with flights to the moon and the continuing use of the International Space Station, spaceflight has taken the center stage on many occasions. Less obvious is that there is a legal environment in which these activities take place.

This article discusses international space law in two parts. First, it covers the basics of international space law, including its sources, followed by a brief introduction of some of the issues and challenges that have developed in the jurisprudence of outer space and how they are being addressed. This article is not a comprehensive discussion of space laws nor does it discuss the origins or the policy decisions that led to their adoption.

THE FIVE SPACE LAW TREATIES

Space law is a creature of international law, which is a combination of customs and treaties. An example of customary space law is the principle of free passage in space established when the USSR launched Sputnik into orbit and crossed over territories other than its own without protest from those countries.

Most of the fundamentals of international space law were devised by the Legal Sub-Committee of the UN Committee for the Peaceful Uses of Outer Space (UNCOPUS). Those fundamentals are that no nation can make territorial claims to outer space and celestial bodies within it; that nations have free access to space; that all nations are free to conduct scientific investigation in space; that national rights to space objects launched by them are preserved; and that nations will cooperate in rendering assistance to crews of spaceships in emergencies. These principles form the basis of the founding five treaties that are the framework of international space law. These treaties are:

1. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies
2. Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Space Objects Launched into Outer Space
3. Convention on International Liability for Damage Caused by Space Objects
4. Convention of Registration of Objects Launched into Outer Space
5. Agreement Governing the Activities of States on the Moon and Other Celestial Bodies

THE OUTER SPACE TREATY OF 1967

The primary treaty governing the law of space is The Treaty on the Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies or more commonly known as the Outer Space Treaty of 1967. The Outer Space Treaty was created shortly after UNCOPUS set forth its fundamentals governing the use of outer space and incorporates and expands upon those fundamentals and serves as the parent for the subject matter of the other four space law treaties.

The overriding principle of the Outer Space Treaty is that space is the common heritage of all mankind and that all nations have access to space and the resources contained within it, and that the territory in outer space, on the moon or other celestial bodies cannot be claimed by any nation. This prohibition does not extend to private individuals or legal entities.

The Outer Space Treaty requires that space be used for peaceful purposes. There are several interpretations of what “peaceful purpose” means. The predominant interpretation of “peaceful purposes”
is that the establishment of military installations, fortifications, maneuvers or the testing of weapons are forbidden.\(^{12}\) The presence of military personnel is permitted so long as they are engaged in peaceful activities, nor does the Outer Space Treaty prohibit the placement of equipment or facilities that are used for peaceful exploration.\(^{20}\)

The Outer Space Treaty specifically bans the placement of nuclear weapons or any other weapon of mass destruction in the orbit of Earth or on any celestial body.\(^{21}\) It does not specifically address the placement of non-nuclear weapons or those that are not capable of causing mass destruction.\(^{22}\)

The Outer Space Treaty also requires nations render assistance to astronauts in distress whether in space, the high seas or within the territory of another nation. It also obligates countries to inform others of conditions that may prove hazardous to astronauts.\(^{23}\)

The Outer Space Treaty requires that a nation or State take responsibility for its activities in space or for the activities of non-governmental entities that are under its jurisdiction as well as detailing the nature of objects launched into space and the nature of any activities performed in space,\(^{24}\) and it imposes liability for any damages caused by a space object on Earth or to another State’s property in the course of any space activity.\(^{25}\)

The Outer Space Treaty also states that any space object launched continues to be the property of the State who launched it regardless of whether it lands in sovereign territory or the territory of another State.\(^{26}\) This precept of the Outer Space Treaty follows a similar principle of customary maritime law where there is no right of salvage to federal warships unless expressly abandoned.\(^{27}\)

The Outer Space Treaty obligates States to preserve the environment of outer space in the course of their activities,\(^{28}\) as well to allow other States to observe its space activities\(^{29}\) and the duty to disclose the nature of its space activities.\(^{30}\)

### THE RESCUE AGREEMENT OF 1968

The Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space \(\text{[the Rescue Agreement]}\) expands on the duties introduced in the Outer Space Treaty to render assistance to astronauts in distress.\(^{31}\) The Rescue Agreement delineates the requirements of a State to come to the aid of astronauts in distress.\(^{32}\) The Rescue Agreement also reinforces the principle that a spacecraft continues to belong to the State that launched it and requires that any spacecraft recovered by another State in the course of a rescue be returned.\(^{33}\)

### THE LIABILITY CONVENTION OF 1972

The Convention on International Liability for Damage Caused by Space Objects \(\text{[the Liability Convention]}\) expands the principles of liability for damage caused by space objects introduced in the Outer Space Treaty.\(^{34}\) Two scenarios are envisioned by the Liability Convention: 1) a space object causes damage to the surface of the earth or an aircraft in flight; or 2) a space object causes damage some place other than the surface of the earth, i.e. outer space or another celestial body.\(^{35}\)

The first scenario holds a State strictly liable for any damage caused by a space object launched even in the face of circumstances that are outside its control.\(^{36}\) If more than one State is responsible for the launch of the space object, then both States will be held joint and severally liable for damage caused.\(^{37}\) Canada exercised its rights under this scenario when Cosmos 954\(^{38}\) belonging to the USSR fell from orbit on January 24, 1978, and contaminated Canadian territory with debris from its onboard nuclear reactor.\(^{39}\)

A State can be absolved from strict liability if it can show that a claimant was grossly negligent or had the intent to cause the damage sustained.\(^{40}\) A State will not be exonerated in cases where its activities do not conform with international law.\(^{41}\)

The second scenario holds a State liable only if it can be shown that it was due to the fault of the State or States as the case may be.\(^{42}\) It is under this scenario that a cause of action could be initiated in the matter of the collision between Iridium 33 satellite and the purportedly derelict Russian satellite Cosmos 2251\(^{43}\) on February 10, 2009.

A State that has been damaged under either of the two scenarios can seek compensation under the Liability Convention without exhausting remedies locally available; however, if a claimant is in the process of pursuing remedies outside of the Liability Convention, it cannot pursue a claim under the Liability Convention until it completes that process.\(^{44}\)

The Liability Convention does not specify a method or formula to determine what compensation is due to a claimant, but it does require that compensation be determined according to international...
law and the principles of justice and equity. Equitable compensation was negotiated between Canada and the USSR in the Cosmos 954 incident without the need of third-party intervention. The settlement of the claim was formalized though a diplomatic protocol signed in Moscow.

The Liability Convention provides a means of third-party arbitration if agreement on compensation cannot be reached between the two parties. Under the Liability Convention, a Claims Commission can be formed at the request of either State. The determination of the Claims Commission is binding.

The Claims Commission consists of a representative from the launching State, a representative from the claimant State, and a chairperson chosen jointly by the two. Either may request that the Secretary General of the UN appoint a chairperson if the two States involved cannot agree on the appointment within four months of the creation of the Claims Commission.

THE REGISTRATION CONVENTION OF 1975

The Convention on Registration of Objects Launched into Outer Space [Registration Convention] builds on the principle of the Outer Space Treaty concerning the registration of objects launched by a State. The impetus behind the Registration Convention is to ensure the peaceful use of outer space by creating a duty for States to create a registry of spacecraft that it launches and to make that registry available for public inspection.

The Convention requires the name of the launching State or States; an appropriate designator for the space object or its registration number; date and territory of launch; basic orbital parameters, and the general function of the space object. A comprehensive searchable database containing this information is publically available.

THE “MOON TREATY” OF 1979

The final and most controversial child of the Outer Space Treaty is the Agreement Governing the Activities on the Moon and Other Celestial Bodies [the Moon Treaty]. This child of the Outer Space Treaty stands out from the others in that it deals specifically with the Moon and other celestial bodies. It is the only one of the five foundational treaties that has not been ratified by the United States, the Russian Federation (USSR) and the People’s Republic of China. These three holdouts notwithstanding, the Moon Treaty has a sufficient number of ratifications to be entered into force.

The Moon Treaty takes the concept of non-appropriation by nations from the Outer Space Treaty and closes the loophole for private entities barring them from laying claim to the moon or other celestial bodies and extending that prohibition to resources as well. While theoretically closing the door for private entities to lay claim to extraterrestrial natural resources, it does not prohibit their extraction. It does envision an international regime to oversee the extraction and distribution of those resources.

The Moon Treaty expands the “common heritage” language and suggests that not only is extraterrestrial property and the resources contained within belong to all mankind, but the technology and means to obtain those resources must be shared with who could not otherwise obtain it on their own. This suggests that intellectual property rights as well as real property and resource rights are implicated as well.

It is concern over these issues and others that have dissuaded the United States, the Russian Federation and the People’s Republic of China from assenting to the Moon Treaty, and unless they are addressed, the Moon Treaty likely will not be signed by these three.

JURISDICTION OF THE COURTS

The Outer Space Treaty grants jurisdiction over government and non-government entities alike to the State from whom the activities originate. If a private entity in the United States is involved in a space activity and a legal action arose during the course of that space activity, the private entity would be subject to the jurisdiction of the United States and the federal courts would have subject matter jurisdiction.

This principle was enunciated in Beattie v. United States. In Beattie, the United States Court of Appeals for the District of Columbia Circuit heard an appeal for a claim under the Federal Torts Claim Act relating to the subject matter jurisdiction of an incident that occurred in Antarctica. The Appeals Court in Beattie was persuaded that it had subject matter jurisdiction over the claim with the majority reasoning that Antarctica was not considered a foreign country since it is not
under the control of any country other than the United States, nor was it under the exclusive control of the United States.64

The majority recognized that the legal status of Antarctica is frequently analogized with that of outer space, and that the Outer Space Treaty imposes international liability upon the signatories and grants continued jurisdiction over objects launched as well as personnel.64 The Court noted that although the Outer Space Treaty does not specifically mention tort claims as was the case in the current matter, “...the basic principle is that in the sovereignless reaches of outer space, each State party to the Outer Space Treaty will retain jurisdiction over its own objects and persons.”76

The Beattie majority agreed with this analogy and decided that the District Court that the Court did have subject matter jurisdiction over the Antarctica claim.66 Although the Court in this case used the Outer Space Treaty as grounds to establish subject matter jurisdiction in a matter of terrestrial origin, it may inadvertently have set the stage for future disputes arising in outer space.62

NATIONAL SPACE POLICY

A discussion of international space law is incomplete without including national space policy. National space policy enunciates a nation’s goals in outer space and the means by which they will be achieved. National space policies are motivated and shaped by bureaucratic compromise, domestic politics, and foreign policy goals. They are intended for multiple audiences, including the national legislative body, the general public, foreign allies, adversaries, third parties such as the United Nations and non-governmental organizations (NGOs).68

The space policy of the United States addresses national security, civil, commercial, and scientific interests and activities in the space environment. It includes implementation guidelines for the nation’s individual national security (military, intelligence), civil, and commercial space communities.69

When crafting a national space policy, policy-makers in the United States consider the nation’s space capabilities, the emerging international security environment, how adversaries might respond to it, how other countries may find our space policy relevant to their security interests, and how the United States can shape the international space regime to achieve its policy objectives.70

Presidents of the United States have produced a National Space Policy in one form or another since the Eisenhower Administration. The current National Space Policy announced by the White House on June 28, 2010 is the latest example.72 The position set forth by the National Space Policy has been recognized by the United Nations.73

ISSUES IN SPACE LAW

As technology matures and the capabilities of human activity in outer space increases, the likelihood of space law being implicated increases as well. However, like most areas of law, there is a tendency for the law to play catch-up with the issues. Two hot-button issues in international space law are orbital space debris and weapon placed in outer space.

ORBITAL SPACE DEBRIS

The increase of space activity since the advent of the space age has created a veritable junkyard of orbital space debris consisting of defunct satellites, expended rocket boosters, components and tools lost during extravehicular activities by astronauts and cosmonauts. Most of this orbital space debris is benign, but some can create a navigation hazard to operational space craft.

A recent example is the collision between Iridium 33 and Cosmos 2251 on February 10, 2009 over Siberia. The incident marks the first time an intact, active satellite collided with another intact, but otherwise derelict spacecraft, but it is not the first time that orbital space debris had collided in space.74

Derelict satellites that wander in geosynchronous orbit after a sudden failure also present an orbital space debris problem. Unlike satellites that are moved to a graveyard orbit after their useful life is over, satellites that fall unexpectedly occupy a valuable orbital slot in the geosynchronous belt and can wander and collide with functioning satellites or interfere with their transmissions.75

The Outer Space Treaty obligates launching States to preserve the environment of outer space in the course of its space activities, however, there is no follow-on treaty to further define that responsibility or the role that orbital space debris plays.76 While no legally binding treaty addresses space debris, the National Space Policy recognizes the problem of orbital space debris. The National Space Policy directs government agencies involved in space activities to stabilize the current

**Figure**: Apollo 11 plaque attached to the descent stage of the lunar excursion module (LEM) Eagle, which remains on the moon. (NASA photo.)
environment of orbital space debris through practices like the United States Government Orbital Debris Mitigation Standard Practices. 20

The National Space Policy of the United States recognizes the challenges posed by the current environment of orbital space debris and that it should take a leadership role in addressing the problem. However, the National Space Policy also recognizes that the United States cannot address the issue alone. 21

The United Nations, through the Committee for the Peaceful Uses of Outer Space addressed the issue of space debris for the first time under an agenda item entitled “Space Debris” on March 10, 1994. 22 The work of the Committee through its Scientific and Technical Subcommittee led to the adoption of space debris mitigation guidelines 23 endorsed by the General Assembly. 24

The Space Debris Mitigation Guidelines 25 are not legally binding under international law, but States are encouraged to take measures to ensure that the guidelines are implemented. 26 States are encouraged to use the guidelines for mission planning, new spacecraft design and existing spacecraft design when possible. 27

SPACE WEAPONS

The subject of space weapons presents a dilemma to international space law. The Outer Space Treaty prohibits the use or placement of nuclear weapons or other weapons of mass destruction in outer space, but it does not address the use or presence of devices or weapons that are non-nuclear or do not reach the level of a weapon of mass destruction. 28

Attempts to make up for this shortcoming have met with little success. The Russian Federation and the People’s Republic of China on June 27, 2002 presented the United Nations Conference on Disarmament with a treaty proposal called the Possible Elements for a Future International Legal Agreement on the Prevention of the Deployment of Weapons in Outer Space, the Threat or Use of Force Against Outer Space Objects or PAROS. 29

PAROS as presented by the China and the Russian Federation is not without its short-comings. The most prominent shortcoming of PAROS is that while it prohibits weapons placed in orbit around the earth and on celestial bodies, it does not address weapons that are positioned on the surface of the earth that could be directed against space objects. 30 This distinction is critical for direct-ascent anti-satellite weapons (ASATs). 31

On January 11, 2007, the People’s Republic of China demonstrated an anti-satellite capability when it used a SC-19 land-based ballistic missile to deliver a kinetic-kill vehicle to destroy its weather satellite Fengyun 1C. 32 The test drew international condemnation and produced a debris cloud that still remains a potential orbital hazard.

Nonetheless, China maintains that the test was done in accordance with international law. 33

The United States demonstrated an ASAT capability ancillary to its anti-ballistic missile program on February 21, 2008, when it intercepted its crippled spy satellite USA-193. 34 The intercept of USA-193 was announced in well in advance, 35 but it drew denigration from several nations and critics. 36

The methods used to intercept and destroy the satellites in both circumstances could be classified as space weapons even though both originated from points on the earth. 37 However, PAROS contains no provisions for a weapon originating from the surface of the earth. 38 PAROS also fails to address technology that can perform either a military purpose or a non-military purpose. 39 These so-called dual-use technologies are a sticking point for PAROS because a useful technology could be prohibited just because it could be used in an aggressive manner.

The flight of the Shenzhou-7 manned spacecraft launched on September 28, 2008 illustrates this point. As part of its mission, Shenzhou-7 carried and deployed the BX-1 microsatellite within visual range of the International Space Station. Full details surrounding the purpose of the BX-1 are still coming to light; however, given its proximity to the International Space Station, it is unclear whether the People’s Republic of China intended the test of the BX-1 to demonstrate technology for an automated cargo transfer vehicle or for a co-orbital weapon. 40

A similar demonstration of a potential dual-use technology occurred when the United States revealed its capability to inspect satellites in geosynchronous orbit through the use of the Mitex satellite pair launched in 2006. 41 The United States Air Force revealed that the satellites were maneuvered to perform an up-close inspection of the failed DSP-23 missile warning satellite belonging to the United States. 42 The technology incorporated into both the BX-1 and the Mitex satellites demonstrated technology that could be used for peaceful purposes; however, the same technology could arguably be used as an offensive military capability, which would be prohibited under PAROS. 43

Space weapons have been addressed in the domestic space law as well. Rep. Dennis Kucinich (D-Ohio) introduced the Space Preservation Act of 2005 into the House of Representatives on May 18, 2005 in an effort to deal with the issue of space weapons. 44 The Space Preservation Act’s purpose was to prevent the United States from acquiring a space-based weapons capability by mandating the President to cease and otherwise ban the development or deployment of space-based weapons or the technology that could be used to develop them. 45 The Space
The Space Preservation Act also mandated that the President of the United States negotiate and eventually sign an international treaty banning space weapons.

The Space Preservation Act, unlike PAROS took into account weapons launched from the surface of the earth in its definition of “space-based weapon”; however, like PAROS it did not address or define situations where dual-use technologies are involved. The Space Preservation Act was referred to the House Armed Services Committee, Sub-Committee Strategic Forces on June 21, 2005 where no further action was taken on it.

A second option to deal with the issue of space weapons lies in governing the conduct and use of technology in outer space, rather than the nature of the technology. A draft proposal for such an instrument has been proposed by the Council of the European Union.

The Code of Conduct for Outer Space Activities is a series of statements designed to establish a non-legally binding, normative framework defining responsible behavior in outer space. In some respects it is non-controversial and many of its principles are shared by the National Space Policy of the United States. It includes calls for States to take actions to minimize the prospect of collisions on orbit, to avoid purposefully creating space debris, and to agree to registration requirements for space launches and satellite maneuvers. The Obama Administration has been considering signing on to the Code, but no word has been made public on the progress towards that end.

Bilateral agreements or treaties that are legally binding offer another option for defining conduct between space-faring nations. One example of a bilateral agreement regulating conduct is the Incidents on the High Seas Agreement between the United States and the USSR entered into force on May 25, 1972. This Agreement established rules of the road between the two nations concerning naval operations when in the vicinity of each other so as to prevent misunderstandings, which could spark an international incident. The Agreement is still in force and has proven to be valuable in preventing incidents between the two countries.

A bilateral agreement such as the Incident on the High Seas Agreement between space-faring nations addressing conduct in outer-space would define conduct during space activities. An agreement would also create a dialogue between States that could minimize the likelihood of an incident occurring or escalating through the enhancement of mutual knowledge and understanding of each other’s space operations.

**CONCLUSION**

The jurisprudence of international space law is still in its adolescence. As the ability to access outer space continues, the reliance on space-based systems will grow as well. Space law and policy will be challenged to mature to address the emerging needs and challenges that will accompany that growth.

**ENDNOTES**

1. The body of space law also includes law enacted by Congress. A recent example is H.R. 3307 enacted by the 103rd Congress dealing with Space Commercialization.


3. See id.

4. See id. at 76-77.

5. See id.

6. The United Nations has also adopted principles concerning the use of satellites for television broadcasting, the use of satellites for remote sensing and intelligence gather, the use of nuclear power sources in outer space, and the exploration and use of outer space for the benefit of all States, in particular the needs of developing countries.


10. See Convention on Registration of Objects Launched into Outer Space, November 12, 1974, 1023 U.N.T.S. 15 (hereinafter the Registration Convention) (requires members to register a list of all spacecraft launched and the nature of the spacecraft with the U.N. Secretary General). See also Michael J. Listner, The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims, 1 Regent J. Int’l Law 75, 77.


12. See The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, 610 U.N.T.S. 205 (hereinafter the Outer Space Treaty) (ratified in 1967, the Outer Space Treaty was the first international space law treaty). See also Michael J. Listner, The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to...
Current Claims, 1 Regent J. Int'l Law 75, 76.


14. The “common heritage” language or res communis of the Treaty comes from the phrase “the province of all mankind” located in paragraph 1 of Article I. The Outer Space Treaty leaves this phrase undefined and unexplained, but it has been interpreted to mean “for the benefit of all mankind.” It is this principle that the undeveloped countries are relying on to ensure them equal access to space. See Michael J. Listner, The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims, 1 Regent J. Int'l Law 75, 76. See also Outer Space Treaty, art. 1, para. 1.

15. Outer Space Treaty, art. 1, para. 2.

16. Id.

17. Id. art. 4, para. 2.

18. There are competing interpretations of “peaceful purposes”. There is an interpretation that Article IV of the Outer Space Treaty excludes military activity of any kind. In spite of this, the interpretation commonly espoused is that military activity is permitted as long as it is not aggressive or warlike. See Maj. John E. Parkenson, Jr., International Legal Implications of the Strategic Defense Initiative, 116 MIL. L. REV. 67, 81-86 (Spring 1987) for a discussion of the interpretation of Article IV.


20. See id.


22. Id. See also Michael J. Listner, The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims, 1 Regent J. Int'l Law 75, 79.

23. Outer Space Treaty at art. 5, para 1-3.

24. Id. at art. 6, para. 1.

25. Id. at art. 7 para 1. See also Michael J. Listner, The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims, 1 Regent J. Int'l Law 75, 80.

26. See Outer Space Treaty art. 8, para. 1.


28. See Outer Space Treaty art 9, para 1.

29. See Id. at 10, para. 1.

30. See Id. at 11, para. 1.

31. See Outer Space Treaty, supra note 13, art. 5. See also The Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, Apr. 22, 1968, 672 U.N.T.S.119.

32. See Rescue Agreement, art. 2-4.

33. See Rescue Agreement, art. 5. See also Michael J. Listner, The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims, 1 Regent J. Int'l Law 75, 83. Canada’s Department of External Affairs referred to Article V of the Rescue Agreement in its first formal communiqué with the Embassy of the USSR on February 8, 1978 concerning the crash of Cosmos 954 in Canadian territory. Canada fulfilled its duties under Article V of the Rescue Agreement to inform the USSR that it had identified the debris as coming from Cosmos 954. See 18 I.L.M 899, 910. See also Rescue Agreement, art. 5, para. 1.

34. See Outer Space Treaty, supra note 25, art. 7. See also Convention on International Liability for Damage Caused by Space Objects, Nov. 29, 1971, 961 U.N.T.S. 187.

35. Liability Convention art. 2-4. See also Michael J. Listner, The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims, 1 Regent J. Int'l Law 75, 83.

36. Id.


39. The formal claim against the USSR was made by Canada’s Department of External Affairs via Note FLA-268 on January 23, 1979. FLA-268 cites the legal rationale for Canada’s claim for damages, including its recitation of the Liability Convention. See 18 I.L.M. 899, 899-908. Note FLA-268 was followed on March 15, 1979 with Note FLA-813, which contained the revised costs of the Phase II cleanup of the debris from Cosmos 954 and the text of diplomatic communiqués concerning the incident between the Department of External Affairs and the Embassy of the USSR from February 8, 1978 to March 51, 1978. See 18 I.L.M. 899, 910-930.

40. See id. at 84.

41. Id.

42. Liability Convention art 2-4. See also Michael J. Listner, The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims, 1 Regent J. Int'l Law 75, 83


44. Liability Convention art 11 para. 1. See also Michael J. Listner, The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims, 1 Regent J. Int'l Law 75, 84.

45. See Liability Convention art. 12.

46. The Canadian government claimed $6,041,174 (Canadian) but settled for $3,000,000 (Canadian) for the damage caused by Cosmos 954. The Canadian government also reserved the right to be compensated for additional damages that may occur in the future because of the incident, any costs incurred should a claims commission need be established under the Liability Convention and any awards made by the Claims Commission. See Protocol on Settlement of Canada’s Claim for Damages Caused by “Cosmos 954,” Apr. 2, 1981, Can.-U.S.S.R., 20 I.L.M. 689 (1981). See generally Settlement of Claim between Canada and the Union of Soviet Socialist Republics for Damage Caused by “Cosmos 954” Released April 2, 1981 at http://www.java.jp/library/space_law/chapter_3/3-2-2-1_e.html (for the text of the settlement.)

47. See Liability Convention art. 15, para. 1.

48. See id. at 15, para. 2.

49. See Outer Space Treaty, supra note 26, art. 8. See also Michael J. Listner, The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims, 1 Regent J. Int'l Law 75, 84-85.

50. See Michael J. Listner, The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims, 1 Regent J. Int'l Law 75, 84.

51. Registration Convention, art 4, para. 1. See also Michael J. Listner, The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims, 1 Regent J. Int'l Law 75, 85.

52. See Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, Dec. 18, 1979, 1363 U.N.T.S. 3 [hereinafter the Moon Treaty] (governs the use of the moon and other celestial bodies). See also Michael J. Listner, The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims, 1 Regent J. Int'l Law 75, 85

53. See Michael J. Listner, The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims, 1 Regent J. Int'l Law 75, 86.

54. Id.


56. Id. at art. 11, para 5-8. See also Michael J. Listner, The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims, 1 Regent J. Int'l Law 75, 86-87

57. See Michael J. Listner, The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims, 1 Regent J. Int'l Law 75, 86-87

58. See id. at 87.

59. See Outer Space Treaty supra note 24, art. 6.
62. The Antarctica Treaty entered into force on December 1, 1959. It is similar in principle and language to the Outer Space Treaty, i.e. Antarctica cannot be appropriated by any other nation, it is to be used for peaceful purposes and nations are free to perform scientific exploration. See generally Antarctic Treaty, 402 U.N.T.S. 71 available at http://www.state.gov/www/global/arms/treaties/artx1c1.html (for the text of the Antarctic Treaty).
63. See Beattie at 98-99. See also Antarctic Treaty, art. 4, para 2.
64. See Beattie at 99. See also Outer Space Treaty supra note 25.
65. Beattie at 100. See also Outer Space Treaty supra note 25. But compare Antarctic Treaty art. 11, para 1-2 discussing the resolution of disputes between contracting parties.
66. See Beattie at 100.
67. In the matter of the collision between Iridium 33 and Cosmos 2251, the owner of Iridium 33, Iridium, LLC, is a legal entity residing in the United States. The jurisdictional language of the Outer Space Treaty grants the United States jurisdiction over the space activities of Iridium, LLC so any litigation initiated would be filed in the Federal Court for the District of Columbia and use Beattie as its rationale for doing so.
69. Id.
70. See id.
71. Space policies are not limited to the United States or countries with space assets. For example, Switzerland has no space assets, but it has chosen to benefit from other countries’ space programs by participating within the framework of the European space programs as well as US space programs such as the International Space Station. To manage these interactions, Switzerland has an extensive governmental space program and a national space policy directing its activities. See Dr. Dana J. Johnson, “National Space Policy: Opportunities and Challenges in Shaping the International Space Regime”, in Air Force Space Command High Frontier: The Journal for Space & Missile Professionals, Volume 3, Number 2, at footnote 37, p. 54.
72. President Obama announced the current National Space Policy designated Presidential Policy Directive 4 on June 28, 2010. Presidential Policy Directive 4 itself has not been publicly released. The unclassified version of the current National Space Policy emphasizes 1) openness and transparency of space operations to improve public awareness of government activity; 2) encouraging and facilitating the growth of the commercial space sector in the United States; 3) the right of nations to use and explore space for peaceful purposes, which includes the use of space for national and homeland security activities; 4) non-interference with the rights of free passage and conducting of operations in space; and 5) the right of the United States to employ measures to ensure the use of space for including deterring others from interference and defense of allied space systems from attack. See National Space Policy of the United States, June 28, 2010 available at http://www.whitehouse.gov/sites/default/files/national_space_policy_6-28-10.pdf (last visited on January 30, 2011). But compare the unclassified version of the National Space Policy authorized by former President George W. Bush on August 31, 2006, available at http://www.globalsecurity.org/space/library/policy/national/us-space-policy_060831.pdf, which emphasizes 1) the peaceful uses of outer space, which includes the use of space for U.S. defense and intelligence-related activities in pursuit of national interests; 2) the rejection of any claim of sovereignty of outer space or any limitation of any right of the United States to conduct space operations or acquire data from space; 3) cooperation with other nations in the peaceful use of outer space to extend the benefits of space, enhance space exploration, and to protect and promote freedom around the world; 3) the interference of space systems of the United States as an infringement of its rights of passage in outer space; 4) the preservation of the United States’ rights, capabilities, and freedom of action in space and the intention to dissuade or deter others from and to take those actions necessary to protect its space capabilities; and 5) the intention of the United States to oppose the development of new legal regimes or other restrictions that seek to prohibit or limit U.S. access to or use of space; and 6) the encouragement and facilitation of a growing and entrepreneurial U.S. commercial space sector.
73. The United Nations 65th General Assembly First Committee 18th Meeting on October 25, 2010 recognized that the National Space Policy of 2010 is consistent with the principles of the peaceful use of outer space but that it also takes into account the national and homeland security interests of the United States. See Sixth-fifth General Assembly, First Committee, 18th Meeting (PM), 25 October 2010. (Press Release GA/DIS/3421) available at http://www.un.org/News/Press/docs/2010/gadis3421.doc.htm (last visited February 9, 2011.)
74. Cosmos 2251 belonged to the Russian Federation and collided with Iridium LLC’s Iridium 33 on February 10, 2009 at 11:55 a.m. EST (0455 GMT) over Siberia at an altitude of 490 miles (790 km). The collision was the first ever of two intact spacecraft and left a debris cloud that continues to be tracked by US Space Surveillance Network.
76. A graveyard orbit is an orbit where spacecraft are intentionally placed at the end of their operational life so that they do not interfere with other satellites/spacecraft or otherwise occupy and orbital slot.
78. Outer Space Treaty supra note 28, art. 9, para. 1.
79. But see Liability Convention supra note 43 art. 2-4 (where a State is liable when “... a space object causes damage someplace other than the surface of the earth, i.e. outer space or another celestial body.”)
80. The United States Government Orbital Debris Mitigation Standard Practices are guidelines adopted by the United States to curtail or limit the amount of space debris in orbit. The objectives of the Guidelines through practice are 1) that spacecraft and upper stages should be designed to eliminate or minimize debris released during normal operations; 2) the minimization of debris generated by accidental explosions; 3) the selection of safe flight profiles and operational configurations; and 4) the post mission disposal of space structures. See generally, U.S. Government Orbital Debris Mitigation Standards available at http://orbitaldebris.jsc.nasa.gov/library/USG_OOD_Standard_Practices.pdf. The National Aeronautics and Space Administration Procedural Requirement 9715.6A mandates the use of the United States Governmental Orbital Debris Standards per Section 11 of the National Space Policy authorized by the Bush Administration. See NASA Procedural Requirements for Limiting Orbital Debris (w/Change 1 - 5/14/09), NPR 8715.6A, P1-1-P12, available at http://orbitaldebris.jsc.nasa.gov/library/NPR_8715_006A.pdf.
81. Contrary to the position taken by the National Space Policy enacted by the Obama
Administration, there are calls for the United States to unilaterally address the issue of orbital space debris. See Kirk Wallet, *Space Debris: Why the US Cannot Go It Alone*, http://www.thespacereview.com/article/1373/1, (for a discussion of the technical and policy reasons impeding the United States from addressing the space debris problem alone.)


The guiding principles enunciated by the United Nations Space Debris Mitigation Guidelines are: 1) limit debris released during normal space operations; 2) minimize the potential for break-ups of space objects during operational phases; 3) limit the probability of accidental collision in orbit; 4) avoid intentional destruction and other harmful activities; 5) minimize the potential for post-mission break-ups resulting from stored energy (fuels); and 6) limit the long-term presence of spacecraft in the low-earth orbit region after the end of their mission. See U.N. General Assembly, 50th Session. Committee on the Peaceful Uses of Outer Space Report of the Scientific and Technical Subcommittee on its forty-fourth session, held in Vienna from 12 to 23 February 2007, (A/AC.105/890, Annex IV, para. 3). Official Record. Vienna, Austria, 2007.

See Id.

See Id.

Outer Space Treaty supra note 15, art. 4, para 1.


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The Chinese government insists that the test of the ASAT was in conformity with international law, however; the failure of the Chinese government to consult with other nations before the test might be a violation of Article IX of the Outer Space Treaty. See Outer Space Treaty, supra note 28 at art 9, para 1.


The Russian Federation accused the United States of using the planned intercept of USA-193 as a cover for the test of a direct-ascent ASAT. Specifically, the Russian defense ministry charged that the U.S. was using the hydrazine worries that the United States was promoting as the rationale for the intercept as a cover story for a test of an ASAT. The Russian defense ministry noted that extraordinary measures had never before been needed to deal with spacecraft that had fallen to Earth. See "US spy satellite plan a cover?" BBC News, February 17, 2008, available at http://news.bbc.co.uk/2/hi/americas/7248995.stm.

The kill-shot for USA-193 was an SM-3 missile launched from the USS Lake Erie (CG-70). Even though the kill-shot was launched from the surface of the ocean and not land, it can be considered a launch from the surface of the earth.

See generally U.N. Conference on Disarmament, Possible Elements for a Future International Legal Agreement on the Prevention of the Deployment of Weapons in Outer Space, the Threat or Use of Force Against Outer Space Objects, (CD/1649), 28 June 2002, (for the language of the Russian-Chinese proposal noting that weapons launched from the surface of the ocean are not included in the language of the proposal.)


See Craig Covault, Secret inspection satellites boost space intelligence ops, Space

104. See generally U.N. Conference on Disarmament, Possible Elements for a Future International Legal Agreement on the Prevention of the Deployment of Weapons in Outer Space, the Threat or Use of Force Against Outer Space Objects, (CD/1649), 26 June 2002., (for the language of the Russian-Chinese proposal noting that technology with dual-use is not addressed by the language of the proposal.)


108. See H. R. 2420, 109th Congr., § 7 (2005), (for the Space Preservation Act’s definitions of “space weapons”).

109. The Code of Conduct can be classified as a transparency and confidence-building measure (TCBM). TCBMs have been recognized by the United Nations as mechanisms that offer transparency, assurances and mutual understanding amongst parties and reduce misunderstandings and tensions. TCBMs have been used extensively in the realm of nuclear weapons. TCBMs do not have the legal force of treaties and states entering into them are bound only by a code of honor to abide by the terms of the instrument. TCBMs are not intended to supplant disarmament accords. See generally Andrey Makarov, Transparency and Confidence-Building Measures: Their Place and Role in Space Security, Security in Space: The Next Generation-Conference Report, 31, March-1 April 2008, United Nations Institute for Disarmament Research (UNIDIR), 2008 (for a general discussion of TCBMs).

110. The Code of Conduct presented by the Council of the European Union is not meant to be signed. It is an internal memorandum for the Council of the European Union that was shared with the United States and other countries to facilitate discussion. See generally, Council Common Position (EC) No. 14455/10 of 11 October 2010 available at http://register.consilium.europa.eu/pdf/en/08/st17/st17175.en08.pdf (for the October 11, 2010 draft of the Code of Conduct for Outer Space Activities.)


113. See Agreement between the United States and the Union of Soviet Socialist Republics on the prevention of incidents on and over the high seas, 852 UNTS 151.

114. The Agreement on the prevention of incidents on the high seas was the diplomatic result of several incidents that occurred between naval surface vessels and aircraft of the United States and the USSR. These incidents prompted the United States to propose talks to the USSR to prevent incidents from happening in the future and to prevent any future incidents from escalating into serious confrontation. The USSR accepted the proposal made by the United States, and after two rounds of talks on October 1, 1971 and on May 17, 1972 the Agreement was entered into force on May 25, 1972. The Agreement incorporates international maritime law, including the International Regulations for Preventing Collisions at Sea and the 1958 Geneva Convention on the High Seas. The Agreement stipulates a code of conduct for specific circumstances that might occur between naval vessels of both countries as well as protocols should an incident occur. See Agreement between the United States and the Union of Soviet Socialist Republics on the prevention of incidents on and over the high seas, 852 UNTS 151. See generally Michael J. Listner, “A bilateral approach from maritime law to prevent incidents in space”, The Space Review, February 11, 2009 available at http://www.thespacereview.com/article/1309/1 (for a discussion of the Incidents on the high seas agreement and how it principles could be applied to outer space activities.)


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