NOTE

WHEN THE SKY COMES CRASHING DOWN ON YOU: USE BINDING DISPUTE SETTLEMENT BEFORE A PERMANENT CLAIMS COMMISSION

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I. INTRODUCTION

When a Russian man was home with his wife, a large titanium sphere came crashing through his roof and into his home.[1] Though not immediately clear, the sphere was identified as a portion of a Russian communications satellite that exploded several minutes after launch.[2] Luckily, the province where the man lived promised to cover the expenses of fixing the roof.[3] Similar situations of space objects crashing down to Earth have prompted concerns about the effects of massive space objects hurtling back to Earth.[4] For instance, aged satellites, "some the size of a school bus and weighing on the order of tons," are making their way back to Earth and causing a great deal of alarm for scientists and people on the ground.[5] The final destination of many of these "floating barges" is unknown to scientists, creating uneasiness because

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1. Anna Edwards, *Russian Has Amazing Escape as Fragment from Exploded Satellite Smashes into His House in Cosmonaut Street*, MAIL ONLINE (Dec. 26, 2011, 4:52 PM), http://www.dailymail.co.uk/sciencetech/article-2078638.

2. *See id.*

3. *Id.* The Russian man's claim would have to be addressed under Russian national law—likely similar to the American Federal Tort Claims Act, which governs torts committed by the U.S. government—because, under the Convention on the International Liability for Damage Caused by Space Objects (Liability Convention), nationals are unable to bring claims for damage caused by space objects against their own country. Convention on the International Liability for Damage Caused by Space Objects art. VII(a), Mar. 29, 1972, 24 U.S.T. 2389, 961 U.N.T.S. 187 [hereinafter Liability Convention].

4. Jeffrey Kluger, *Space Junk Keeps Fallin' on My Head*, TIME (Oct. 10, 2011), http://www.time.com/time/health/article/0,8599,2096210,00.html.

5. *Id.*

of the difficulty in determining where the space object will land.[6]

In September 2011, the potential debris trail of the U.S. National Aeronautics and Space Administration's (NASA) Upper Atmosphere Research Satellite (UARS), which was the size of a bus and weighed six and a half tons, alarmed the public. The exact landing point for the satellite was completely unknown and scientists expected around twenty-six pieces of debris would survive reentry, instead of burning up in the atmosphere.[7] Although there should have been little concern about the potential for damage from the debris because the chances of being struck by an object were 1 in 3,200, many remained afraid of the final destination of this behemoth object.[8] According to Kerrest, "space activities are less dangerous to third parties than many others [sic] activities."[9] Even still, what should a person or state do when a space object, like the UARS debris, comes crashing down?[10]

International space law governs liability for damage caused by space objects. In the Outer Space Treaty of 1967, parties agreed that states parties "shall bear international responsibility for national activities in outer space."[11] Moreover, Article VII of the treaty speaks specifically about liability, stating, "[e]ach State Party . . . that launches or procures the launching of an object into outer space . . . is internationally liable for damage to another State Party . . . ."[12] In 1972, parties further addressed liability by adopting the Convention on the International Liability for Damage Caused by Space Objects (Liability Convention).[13] The Liability Convention establishes the rules and procedures that govern claims for damage caused by space objects while describing what the convention covers.[14] The Liability Convention, however, needs modification to address current and future problems regarding damage from

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6. *Id.*

7. Eryn Brown, *Satellite's Imminent Fall to Earth Stirs Anxiety*, L.A. TIMES, Sept. 22, 2011, http://articles.latimes.com/print/2011/sep/22/science/la-sci-falling-satellite-20110922.

8. *Id.*

9. Armel Kerrest, *Liability for Damage Caused by Space Activities*, *in* SPACE LAW: CURRENT PROBLEMS AND PERSPECTIVES FOR FUTURE REGULATION 91, 91 (Marietta Benkö & Kai-Uwe Schrogl eds., 2005) (describing how the first few minutes are the most dangerous for the people taking part in the launch while there is less danger for third parties, without much explanation other than a citation to the Cosmos 954 accident as the only example of intergovernmental compensation for damage caused by space activities).

10. This Note focuses primarily on the Liability Convention as the answer to this question because the treaty deals directly with liability for damage caused by space objects.

11. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies art. VI, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 [hereinafter Outer Space Treaty of 1967].

12. *Id.* art. VII.

13. Liability Convention, *supra* note 3.

14. *See generally id.*

space objects, especially considering the privatization of space.[15]

The increased prevalence of private space activities has the potential to increase the amount of damage caused by space objects.[16] Costs associated with space activities restricted access to space to superpowers, but costs have decreased and monetary incentives have pushed private organizations into the space market.[17] The space tourism industry has the potential to become a serious moneymaker as people attempt to accomplish the lifelong dream of traveling to space.[18] According to a report, *Suborbital Reusable Vehicles: A 10-Year Forecast of Market Demand*, the space tourism industry could be worth as much as $1.6 billion over a decade.[19] As of 2005, "nearly a third of orbital launches were performed by commercial launch companies."[20] This financial incentive increases private space activity and requires the international community to reconsider the consequences of private activities as entities race to claim this market, giving the international community an opportunity to incentivize safe activities.[21] Illustrating the notion that private space activities could be outpacing government activities, rumors suggest that Dennis Tito, the first space tourist, wants to execute a private-manned mission to Mars in the hope that the journey to the red planet will inspire greater interest in science and generate greater support for space exploration in future generations.[22] The international community

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15. *See infra* Part III.C.5.

16. *See* Dan St. John, *The Trouble with Westphalia in Space: The State-Centric Liability Regime*, 40 DENV. J. INT'L L. & POL'Y 686, 688–89 (2012) ("With more actors in space, there will be more collisions, which will lead to more claims for liability.").

17. Frans von der Dunk, *As Space Law Comes to Nebraska, Space Comes Down to Earth*, 87 NEB. L. REV. 498, 500, 504–05 (2008). Dr. von der Dunk explained how space is coming down to Earth in the sense that human activities are making it a more accessible realm of the world than previously believed: "As a matter of fact, so costly and risky were space activities that apart from the superpowers, few states were able (or willing) to bear such costs and risks on their own." *Id.* at 501. Many advances in technology, however, have allowed private companies to enter the realm of space, such as wealthy individuals traveling to the space station or the competition to develop suborbital tourist flights. *Id.* at 503–05.

18. Alex Davies, *Wealthy Adventurers Could Turn Space Travel into a $1.6 Billion Industry*, BUS. INSIDER (Oct. 19, 2012, 2:15 PM), http://www.businessinsider.com/space-tourism-to-generate-16-billion-2012-10.

19. *See id.*

20. Brian Beck, *The Next, Small, Step for Mankind: Fixing the Inadequacies of the International Space Law Treaty Regime to Accommodate the Modern Space Flight Industry*, 19 ALB. L.J. SCI. & TECH. 1, 3 (2009).

21. *See* Antoine Pitts, Note, *Space Tourism Policy: Why the World's Space-Faring Nations Should Adopt a Code of Conduct to Control Outer Space Activities*, 18 SW. J. INT'L L. 687, 698 (2012) (discussing how the "wide-open lawlessness of the American Gold Rush days shows why some sort of new framework for space law is uniformly thought to be necessary" and the present competition of companies to get ordinary people into space has created a sort of space tourism rush).

22. Eric Mack, *First Space Tourist Plans to Make Trip to Mars in 2018*, CNET (Feb. 20,

needs to make a determination about the liability for these private actors as they begin to outpace governments in the utilization of space, increasing the potential damage from space activities, such as harm from space debris.

The increasingly pressing issue of space debris is creating significant problems for the future use of space.[23] Space debris, or "space junk," includes a plethora of materials orbiting the Earth. In the early part of the 1990s, "more than 7,100 objects larger than twenty centimeters in size (the 'visibility limit' of radar) exist[ed] in an outer space ring around the earth."[24] These objects, though minute in size, create a serious problem for other space objects orbiting the Earth and the future development of space activity.[25] It would seem that damage caused by space debris should be covered by an international convention geared toward liability for damage caused by space objects, but the Liability Convention has never been invoked[26] for such damage because the meaning of certain terms is unclear.[27] Thus, there should be greater clarity regarding potentially damaging space objects such as space debris.

The international community must reevaluate liability for damage caused by space objects. Ever since countries and private entities placed objects into outer space, approximately seventeen thousand of these objects have descended to Earth, with most burning up in the atmosphere and some remaining intact until reaching the ground.[28] Governments must develop the body of law governing liability for damage caused by space objects to address increased activities in space, especially as related to the privatization of space. This increased privatization of space was not foreseen when the Liability Convention was drafted as liability falls only on states, not private entities.[29] Additionally,

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2013, 9:11 PM), http://news.cnet.com/8301-17938_105-57570439-1 (discussing that Tito spent nearly $20 million to become the first space tourist on a Russian space flight to the International Space Station).

23. *See generally* James P. Lampertius, Note, *The Need for an Effective Liability Régime for Damage Caused by Debris in Outer Space*, 13 MICH. J. INT'L L. 447 (1992).

24. *Id.* at 449–50.

25. *Id.* at 450–51.

26. Some argue that the only time the Liability Convention applied was during the Cosmos 954 incident. *See infra* Part II.A.3 and note 70.

27. *See, e.g.*, Stephen Gorove, *Cosmos 954: Issues of Law and Policy*, 6 J. SPACE L. 137, 141 (1978) (explaining that "[a] space object may be defined as any man-made object originating from the Earth which is designed for use in outer space").

28. Lisa Parks, *When Satellites Fall: On the Trails of Cosmos 954 and USA 193*, FLOW (June 12, 2009), http://flowtv.org/2009/06/when-satellites-fall-on-the-trails-of-cosmos-954-and-usa-193lisa-parks-uc-santa-barbara.

29. Evidence of this is the fact that the Liability Convention forces all liability and claims through states and not the individual actors. *See* Liability Convention, *supra* note 3, art. VIII.

technology consistently outpaces international law, especially in the realm of space law.[30] Space technology is developing at "an extremely rapid pace, while the law in [the] area, both domestic and international, is still in its infancy."[31] More importantly, there is an assumption that the law governing outer space "will not develop fully until the use of outer space has created a need for change."[32] Thus, there is a need to reform the Liability Convention to anticipate and address all contemporary and subsequent liability issues arising from damage caused by space objects.

This Note focuses on how space-faring countries should amend the Liability Convention to develop a legal regime capable of addressing the potential increases in liability from damage caused by space objects, whether on Earth or in space. Specifically, the Note will advocate for the creation of a Permanent Claims Commission with binding dispute settlement procedures and the ability to issue advisory opinions on the interpretation or application of the Liability Convention. In its current form, the Liability Convention fails to resolve modern and future space problems as to damage from space objects launched by states and individual actors. Part II of the Note focuses on international space law with regard to the development and current state of international liability for damage caused by space objects, focusing primarily on the text of the Liability Convention and the problems the treaty is unable to address. Part III of the Note advocates for specific changes to the Liability Convention to address contemporary and future problems, with a focus on amending treaty language to create a permanent institution with broad capabilities to address liability issues. Part IV of the Note concludes by looking beyond potential problems in reforming the treaty and refocusing on fulfilling the goals of the Liability Convention.

II. BACKGROUND

A. *The Outer Space Treaty and the Liability Convention Control International Space Law Governing Liability for Damage Caused by Space Objects.*

Liability for damage caused by space objects is something that has been in treaty form since the beginning of the codification of interna-

30. Andre G. DeBusschere, *Liability for Damage Caused by Space Objects*, 3 J. INT'L L. & PRAC. 97, 98 (1994).

31. *Id.*

32. *Id.* This approach is shortsighted and counterproductive to creating an effective international liability regime for damage caused by space objects because the law will always be one step behind technology and potential liability.

tional space law.[33] A significant step taken to address state liability for government activities was the formation of the Outer Space Treaty of 1967.[34] Various members of the international community believed provisions in the treaty inadequately addressed potential issues of liability.[35] Therefore, the international community formed and ratified the Liability Convention in 1972 to reify issues of liability.[36] This Section of the Note focuses on relevant aspects of the Outer Space Treaty and the Liability Convention.

1. The Outer Space Treaty of 1967[37]

From the advent of space exploration, the international community understood the need to address issues of liability for space activities.[38] In 1967, the United Nations Committee on Peaceful Uses of Outer Space (COPUOS) completed the first space law treaty with "general principles that govern activities in space."[39] The preamble of the treaty discusses that "the exploration and use of outer space should be carried on for the benefit of all peoples" and the desire to use "outer space for peaceful purposes."[40] In response to the need to address liability, the international community added provisions to the treaty concerning liability for damage caused by space objects.[41]

Article VI of the Outer Space Treaty discusses the following:

> States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty.[42]

Important to this provision is the fact that liability for activities by non-

33. *See* Outer Space Treaty of 1967, *supra* note 11, arts. VI–VII.

34. *See generally id.*

35. *See* Marc S. Firestone, *Problems in the Resolution of Disputes Concerning Damage Caused in Outer Space*, 59 TUL. L. REV. 747, 752–53 (1985).

36. Rebecca J. Martin, *Legal Ramifications of the Uncontrolled Return of Space Objects to Earth*, 45 J. AIR L. & COM. 457, 460 (1980).

37. For a general description and history of the Outer Space Treaty of 1967, see generally Stephen Gorove, *Interpreting Article II of the Outer Space Treaty*, 37 FORDHAM L. REV. 349 (1969); Marko G. Markoff, *Disarmament and "Peaceful Purposes" Provisions in the 1967 Outer Space Treaty*, 4 J. SPACE L. 3 (1976); Ivan A. Vlasic, *The Space Treaty: A Preliminary Evaluation*, 55 CALIF. L. REV. 507 (1967); Martin, *supra* note 36 (evaluating the history of regulations concerning space activities).

38. *See* Outer Space Treaty of 1967, *supra* note 11, arts. VI–VII.

39. Firestone, *supra* note 35, at 750–51.

40. Outer Space Treaty of 1967, *supra* note 11, pmbl.

41. *Id.* arts. VI–VII.

42. *Id.* art. VI.

governmental entities are borne on the state.[43] The treaty assumes that "non-governmental entities may conduct activities in outer space only with the authorization of and under the supervision of the appropriate nation," making "any liability of such an entity . . . imputed to the nation-state which authorized its space activities."[44] This provision was drafted at a time when there was little consideration for idea of nongovernmental entities routinely carrying out activities in space.[45]

Furthermore, Article VII of the treaty requires as follows:

> Each State Party to the Treaty that launches or procures the launching of an object into outer space . . . and each State Party from whose territory or facility an object is launched, is internationally liable for damage to another State Party to the Treaty or to its natural or juridical persons by such object or its component parts on the Earth, in air space or in outer space . . . .[46]

"International liability" is a broad term that the treaty does not define directly, but the concept is consistent with the broad nature of liability under the treaty.[47] Even with these provisions in the Outer Space Treaty, members of the U.N. General Assembly sought greater clarity on liability for space activities.[48]

Members of the international community have been consistently concerned with redressing damage caused by space activities, especially regarding the issue of liability.[49] According to Martin, "[e]ven before the Outer Space Treaty was signed, the United Nations General Assembly requested further elaboration of specific principles in regard to the international responsibility and liability of states with respect to their space activities."[50] By 1970, the U.N. General Assembly regretted that COPUOS had yet to create a liability treaty to address concerns about damage caused by space activities.[51] Consequently, COPUOS completed a draft of the Liability Convention, which was adopted by the U.N. General Assembly on November 29, 1971, and came into force in 1972.[52] The Liability Convention serves as the primary treaty for liabil-

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43. *See id.*

44. Firestone, *supra* note 35, at 751–52.

45. This is evident given the fact that states are liable for the activities of nonstate actors. *See* Liability Convention, *supra* note 3, art. I(c).

46. Outer Space Treaty of 1967, *supra* note 11, art. VII.

47. *See* Firestone, *supra* note 35, at 752 (arguing that, although the definition of liability is broad, it does not answer many questions, such as the liability for countries sending scientists or passengers on missions or the liability for those that provide land-based services).

48. Martin, *supra* note 36, at 459–60.

49. *See id.* at 458–59.

50. *Id.* at 459.

51. *Id.* at 460.

52. *Id.*

ity based on space activities, though the treaty still fails to clarify certain issues of liability.[53] According to Martin, the scope of the treaties governing space is "far from comprehensive" because "it would be impossible to envision and provide for all the variables encountered in space exploration."[54] This Note focuses primarily on the Liability Convention because it serves as the primary legal document that gives direction to international claims for damage caused by space objects.

2. The Liability Convention of 1972 Serves as the Primary Document on Liability for Damage Caused by Space Objects.

Creating the Liability Convention was a difficult and drawn-out process.[55] The treaty took over ten years to negotiate, draft, and ratify because of the inability of the delegates "to agree on the resolution of various basic issues," especially issues regarding substantive aspects of the treaty.[56] Although there was a push to create a treaty concerning liability for space objects, because the parties were reluctant to resolve serious issues, the process took a decade to complete.[57] One of the most significant roadblocks to the conclusion of the draft was the "strikingly different views of the legal regime which should govern activities in outer space" between the United States and the Eastern Bloc.[58] The United States wanted to see specific principles in the final draft of the treaty, such as liability without proof of fault; "clear standards to evaluate losses suffered and to determine the amount of compensation to be paid"; prevention of a requirement for the claimant to have to exhaust all judicial or administrative remedies before relying on the provisions of the treaty; a time restriction for negotiations between the launching state and claimant; and a procedure to establish "an international claims commission on an ad hoc basis."[59] The Eastern European countries, however, argued for different provisions. For instance, the Soviet Union argued for "fault-based liability," Hungary wanted the law of the launching state to govern issues of compensation because it distrusted foreign tort law, and the Eastern Bloc nations desired a provision allow-

53. The Liability Convention addresses many issues about defining relevant terms and procedure for claims. *See* Liability Convention, *supra* note 3, arts. XIV–XX. As the Note explains, however, the treaty is far from sufficient to address contemporary and future concerns.

54. Martin, *supra* note 36, at 460. The lack of comprehensiveness of the Liability Convention, however, is a significant problem of the treaty but something that can be resolved by establishing a permanent institution to develop liability law to fill in the gaps left by a lack of treaty clarity. *See infra* Part III.

55. *See* Firestone, *supra* note 35, at 753.

56. *Id.*

57. *See id.*

58. *Id.*

59. *Id.* at 753–54.

ing for arbitration and disfavored relying only on international mediation to resolve the claims.[60]

The negotiations over the dispute settlement procedure under the Liability Convention proved to be rather difficult because of differing legal theories and views on jurisdiction.[61] For instance, some delegations advocated for compulsory jurisdiction, the Belgian and U.S. delegations encouraged compulsory arbitration, and the Hungarian draft proposed the use of arbitral tribunals based on the agreement of the states involved in the claims.[62] The Soviet Union supported the Hungarian delegation, illustrating the Eastern Countries' "unwillingness to accept compulsory dispute settlement procedures" because it would require the countries to "renounce their sovereign freedom of construing international law according to their own legal and political opinions."[63] Although there were significant hurdles to completing the final draft of the Liability Convention and substantial pressure from the U.N. General Assembly to formulate rules and procedures, the parties were able to conclude what would be covered in terms of liability and the procedure to follow, among other issues.[64] The finished draft on liability moved well beyond the general statement of international liability in the Outer Space Treaty of 1967.[65]

In the end, the parties to the Liability Convention understood, as illustrated in the preamble, that with the pursuit of peaceful space activities, "notwithstanding the precautionary measures to be taken by States and international intergovernmental organizations involved in the launching of space objects, damage may on occasion be caused by such objects."[66] Consequently, the convention understands that countries take all steps possible to prevent damage caused by space objects but it is impossible to account for every variable.[67] Thus, the members of the international community promulgated a set of procedures and rules to govern liability for damage caused by space objects.[68] Nevertheless, while the delegations were able to come to an agreement on what

60. *Id.* at 754.

61. *See* GÉRARDINE MEISHAN GOH, DISPUTE SETTLEMENT IN INTERNATIONAL SPACE LAW: A MULTI-DOOR COURTHOUSE FOR OUTER SPACE 32 (2007).

62. *Id.*

63. *Id.* The issue of dispute settlement was eventually resolved in favor of no compulsory dispute settlement mechanism; instead, the countries were required to operate first through diplomatic channels. *See* Liability Convention, *supra* note 3, art. IX.

64. *See generally* Liability Convention, *supra* note 3.

65. Carl Q. Christol, *International Liability for Damage Caused by Space Objects*, 74 AM. J. INT'L L. 346, 355–56 (1980).

66. Liability Convention, *supra* note 3, pmbl.

67. *See id.*

68. *See id.*

should be covered by liability, the Liability Convention does not address all aspects of liability and leaves many vital questions unresolved.[69]

3. Relevant Elements of the Liability Convention.

This portion of the Note focuses on an in-depth evaluation of the treaty provisions of the Liability Convention. There are specific definitions and procedures that must be applied when recovering for damage caused by space objects. The focus, however, will be on the important articles of the treaty with a specific concentration on what is covered under the Liability Convention and the rules and procedures that govern claims under the convention. The Note will supplement different aspects of the Liability Convention with analysis from experts in the field to account for the lack of primary sources interpreting the treaty.[70]

i. Damage

The Liability Convention reads "damage" to include "loss of life, personal injury or other impairment of health; or loss of or damage to property of States or of persons."[71] This potentially expansive definition leaves many questions about what sort of damage will be covered, especially considering the different conceptions of damage in each party's jurisdiction.[72] According to DeBusschere, the definition of damage in the treaty is "broad enough to include many items which other authors believe to have been left to chance."[73] Even though some read damage to focus on terrestrial damage, "there is no reason to believe that the term 'damage' would not cover injury to aircraft in flight or objects such as satellites in orbit."[74] Although there is no clear understanding of damage, the treaty is considered victim- or claimant-oriented to redress the harm caused by space activities.[75] Consequently,

69. *See, e.g.*, DeBusschere, *supra* note 30, at 100 (explaining how the drafters of the Liability Convention "were primarily concerned with the issue of damage due to falling debris rather than liability for damage caused by space debris to orbiting satellites and other objects, since such damage seemed less likely to occur back in the late 1960s").

70. Some argue that the Liability Convention was the basis of only one previous claim in the Cosmos 954 decision, creating a lack of primary source applications of the treaty. DeBusschere, *supra* note 30, at 107.

71. Liability Convention, *supra* note 3, art. I(a).

72. Martin, *supra* note 36, at 464 (noting the broad definition of damage in the Liability Convention and explaining the different understandings of damage in the Soviet Union and the United States).

73. DeBusschere, *supra* note 30, at 101.

74. *Id.*

75. Christol, *supra* note 65, at 351; Kerrest, *supra* note 9, at 92 ("The Liability Convention is very much victim-oriented and weighted in favour of victims not taking part in the tremendous but dangerous activity.").

it seems likely that a broad definition of damage in the treaty and the victim-oriented posture favor the adoption of an expansive understanding of damage to include many forms to damage. Moreover, considering that "[w]hile international space law has been designed to facilitate the exploration and use of the space environment for peaceful . . . purposes, it has also imposed constraints on the use of spatial areas," ensuring the *responsible* use of space in the form of liability for misuse.[76] Thus, there is no clear idea of what damage the treaty covers, requiring parties to redress this issue to resolve future liability issues.

ii. "Launching State" and "Space Object"

Other important definitions to consider under the Liability Convention are "launching," "launching State," and "space object," because the definition of these terms will affect who is liable and for what.[77] First, the term "launching" applies even to the attempted launching of a space object, meaning that a space object does not have to reach outer space to create liability for a state.[78] The Liability Convention creates exceptions, however, for liability owed to nationals and foreign nationals who are involved in the launch.[79] Therefore, this is a significant reduction in liability because a failed launch is most likely to harm individuals around the launch itself within the launching state.[80] Consequently, claims can only be brought by a state "which suffers damage, or whose natural or juridical persons suffer damage."[81] Thus, there are limitations on who can bring the claim, while also allowing for liability for additional aspects of space activities.

Second, the definition of "launching State" tends to be expansive. "Launching State" incorporates liability for a state that "launches or procures the launching of a space object" and a state "from whose territory or facility a space object is launched."[82] The second portion of the definition of a "launching State" creates state liability for the actions of a third party as long as the launch originates on the state's territory.[83] This definition incorporates Article VII of the Outer Space Treaty of

76. Christol, *supra* note 65, at 351.

77. *See* Liability Convention, *supra* note 3, art. I (containing the Liability Convention's definition of these terms).

78. *See id.* art. I(b).

79. *Id.* art. VII.

80. The theory behind limiting liability for harm to nationals is likely the fact that states have legal procedures in place to address harm to nationals, such as the Federal Tort Claims Act in the United States. *See* DeBusschere, *supra* note 30, at 105–06.

81. Liability Convention, *supra* note 3, art. VIII, para. 1; *see also* Firestone, *supra* note 35, at 758–59 (explaining Article VIII, Paragraph 1 of the Liability Convention).

82. Liability Convention, *supra* note 3, art. I(c).

83. Kerrest, *supra* note 9, at 92–94.

1967, which discusses state liability for the actions of nongovernmental entities.[84] Furthermore, a state becomes exposed to liability even in instances where the state is a member of a multilateral space activity if the space object causes some sort of damage.[85] Thus, there is an expansive understanding of what constitutes a "launching State."

Third, pursuant to the Liability Convention, the definition of "space object" likely will need further elaboration. "Space object" is defined as "component parts of a space object as well as its launch vehicle and parts thereof."[86] To recover under the Liability Convention, a claimant must prove that a space object caused the damage, even though there is no clear determination of how broad the term is.[87] According to Firestone, "[i]t has been suggested 'that the minimal requirements of a space object are that it be an object designed for movement in outer space.'"[88] In terms of the ability to recover from damage caused by space debris, it is unclear whether space debris is considered a space object.[89] According to Lampertius, "the Convention's definition of 'space object' should cover space debris even under a strict interpretation of 'space object,' as it is a matter originating from component parts of space objects or their launch vehicles."[90] Thus, the issue of what constitutes a "space object" is something that interested parties will likely litigate, requiring some decision to interpret what is and is not a "space object" according to the definition provided by the Liability Convention.

iii. Liability Under the Treaty

Liability under the Liability Convention falls under either absolute liability or fault liability depending on the location of the damage.[91] Under Article II of the Liability Convention, a "launching State shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight."[92] Then, Article III states as follows:

> In the event of damage being caused elsewhere than on the surface of the earth to a space of one launching State or to persons or property

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84. Firestone, *supra* note 35, at 759–60; Outer Space Treaty of 1967, *supra* note 11, art. VII.

85. *See* Liability Convention, *supra* note 3, art. IV, para 2, art. V, para. 1.

86. *Id.* art. I(d).

87. *See id.* art. II; *see also* Gorove, *supra* note 27, at 139–40 (discussing the meaning of damage).

88. Firestone, *supra* note 35, at 760.

89. *See* Lampertius, *supra* note 23, at 453.

90. *Id.* (discussing the fact that, at the time of the passage of the Convention, there was an understood meaning of "space object" but that it has since become something of an uncertain term).

91. Liability Convention, *supra* note 3, arts. II–III.

92. *Id.* art. II.

> on board such a space object by a space object of another launching State, the latter shall be liable only if the damage is due to its fault or the fault of persons for whom it is responsible.[93]

Under Article VI, however, a state may be exempted from absolute liability "to the extent that a launching State establishes that the damage has resulted either wholly or partially from gross negligence or from an act or omission done with intent to cause damage on the part of a claimant State or of natural or juridical persons it represents."[94] However, this Article does not apply when the activities do not conform to international law.[95]

The form of liability attached to specific damage is controversial and widely discussed.[96] Under the convention, there is only liability without fault for damage caused on the terrestrial surface, while allowing for liability after a showing of fault for damage elsewhere.[97] The treaty "neither defines 'fault' nor refers to a standard of care for determining fault," however, because the possibility of damage in space was considered remote.[98] The drafters feared, moreover, that providing a clearer definition would prevent the ratification of the treaty due to differing views among the different parties, illustrating a major pitfall of the convention and the problem of creating a treaty based on consensus, especially considering the contentiousness of the liability provision.[99] Nevertheless, Christol describes longstanding international case law on a state's obligations as "[t]he duty to avoid causing damage to other states and to natural persons, as well as the duty to pay for damage . . . ."[100] Thus, the treaty fails to provide clear guidance about liability.

There is disagreement as to what liability should attach to the treaty. According to DeBusschere, international case law requires reparation to resolve the consequences of the illegal act and "reestablish the situation which would, in all probability, have existed if that act had not been committed."[101] Furthermore, the Liability Convention incorporates the concept of making the claimant whole.[102] There is an overall lack of clarity when it comes to liability under the treaty. Thus, there is a need

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93. *Id.* art. III.

94. *Id.* art. VI(1).

95. *Id.* art. VI(2).

96. *See* Christol, *supra* note 65, at 353; Firestone, *supra* note 35, at 760–62; Lampertius, *supra* note 23, at 453–54; Martin, *supra* note 36, at 462–64.

97. Liability Convention, *supra* note 3, arts. II–III.

98. Lampertius, *supra* note 23, at 453–54.

99. *Id.* at 454.

100. Christol, *supra* note 65, at 353.

101. DeBusschere, *supra* note 30, at 102 (quoting Case Concerning the Factory at Chorzow (Ger. v. Pol), 1928 P.C.I.J. (ser. A) No. 17, at 22 (Sept. 13)).

102. *Id.*

to develop treaty law to understand better the substantive components of liability—whether absolute liability or fault-based liability.

iv. Rules and Procedures for the Claim Process

An important contribution of the Liability Convention is the establishment of rules and procedures dictating what steps are necessary to bring a claim against a launching state for damage caused by a space object.[103] Under Article VIII, a "State which suffers damage, or whose natural or juridical persons suffer damage, may present to a launching State a claim for compensation for such damage."[104] This means that a state and not an individual must present a claim, requiring the settlement of claims to proceed through states—which would have to present and defend claims for individuals and private entities of the state at the international level.[105]

The initial means of interaction between a claimant and a launching state are through "diplomatic channels," through another state if the states do not have diplomatic relations, or through the secretary general of the United Nations.[106] This is meant to encourage states to solve their problems in a more amicable setting than compulsory third-party dispute settlement and arises from the inability of the delegations to agree upon a proper dispute settlement procedure.[107] There is a one-year statute of limitations for a claimant to file a claim "following the date of the occurrence of the damage or the identification of the launching State which is liable."[108] Importantly, there is no requirement of the exhaustion of all local remedies to file a claim under the Liability Convention, although a claimant is allowed to pursue its claims within the courts of the launching state.[109] This creates numerous outlets for the claimant to bring the claim, but depending on the launching state against whom the claim is brought, there might be few real possibilities.[110] Compensation is determined by the following:

> [I]nternational law and the principles of justice and equity, in order to provide such reparation in respect of the damage as will restore the person, natural or juridical, State or international organization on

103. *See generally* Liability Convention, *supra* note 3, arts. VIII–XX.

104. *Id.* art. VIII(1).

105. *See id.*

106. *Id.* art. IX. The Cosmos 954 incident illustrated Canada and the Soviet Union using diplomatic channels to resolve liability for damage caused by the crashing of a Soviet radioactive satellite over an expansive portion of uninhabited Canada. DeBusschere, *supra* note 30, at 99–100.

107. *See* GOH, *supra* note 61, at 32–33.

108. Liability Convention, *supra* note 3, art. X(1).

109. *Id.* art. XI.

110. This goes to the competence of the domestic legal systems of certain countries.

> whose behalf the claim is presented to the condition which would have existed if the damage had not occurred.[111]

This provision establishes the goal of making the claimant "whole" and describes the primacy of international law in the interest of justice and equity.[112]

If the claim is not resolved through diplomatic channels, then either party is allowed to request the establishment of a Claims Commission.[113] Article XV defines the structure of the Claims Commission to include three members—one appointed by each state and one jointly selected.[114] The commission determines its own procedure and all other administrative matters[115] and "shall decide the merits of the claim for compensation and determine the amount of compensation payable, if any," with the decision of the commission being final and binding *if the parties agree*.[116]

No claim has ever been brought before the Claims Commission, meaning that the efficacy of the rules and procedures is far from certain.[117] The treaty members could change aspects of the treaty to require binding dispute settlement before a permanent Claims Commission under Article XXVI.[118] The Liability Convention has a provision according to which, after five years of the treaty being in force, "at the request of one third of the States Parties to Convention, and with the concurrence of the majority of the States Parties, a conference of the States Parties shall be convened to review this Convention."[119] Therefore, the international community has an outlet to resolve issues related to the Liability Convention.

4. Recurring Issues Under the Liability Convention

This Section illustrates contemporary and future challenges of the Liability Convention. One of the most significant problems that the Liability Convention faces is that the convention has never been applied completely in terms of fully using the rules and procedures developed to resolve any damage caused by space objects.[120] In fact, the Cosmos 954

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111. Liability Convention, *supra* note 3, art. XII.

112. *See id.*

113. *Id.* art. XIV.

114. *Id.* art. XV, para. 1.

115. *Id.* art. XVI, paras. 3–4.

116. *Id.* arts. XVIII, XIX, para. 2.

117. The only time it seemed possible to bring a claim was in the Cosmos 954 incident, which was resolved diplomatically. *See* DeBusschere, *supra* note 30, at 107.

118. Liability Convention, *supra* note 3, art. XXVI.

119. *Id.*

120. *See, e.g.*, Edward G. Lee & D.W. Sproule, *Liability for Damage Caused by Space Debris: The Cosmos 954 Claim*, 26 CAN. Y.B. INT'L L. 273, 278–79 (1988).

incident, described below, is the only instance in which a party has tried to apply the Liability Convention.[121] Without the treaty being invoked completely in a particular situation, there is little prospect for the development of a body of law applicable to current and future issues. Although the Liability Convention has been criticized numerous times, DeBusschere argues that there is little reason to criticize definitional inadequacies of the treaty because the it has never been invoked or interpreted, precluding insight into what the provisions actually mean considering they have never been used.[122] The fact that states have yet to invoke the treaty, however, does not require the international community to continue waiting to elucidate certain provisions but instead favors changing the treaty to facilitate the development of space liability law.

A clear example of when the treaty could have been used but was not applied to the extent necessary to advance treaty law is the Cosmos 954 incident.[123] In January 1978, the Soviet spy satellite, Cosmos 954, which contained a nuclear reactor, reentered the atmosphere and spread radioactive material across Canada.[124] Canada faced costly cleanup with costs totaling around C$14 million because of the radioactive nature of the material.[125] Apparently, Canada sought only half of those costs from the Soviet Union based on the Liability Convention, but the parties decided to resolve the claims through diplomatic channels because the Soviet Union was willing to offer Canada C$3 million to "exclude[] the Liability Treaty as the basis for compensation."[126] This has been the only opportunity for countries to utilize the Liability Convention, but Canada and the Soviet Union failed to fully apply the treaty, hampering the ability to interpret its important provisions.

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121. *Id.* (claiming that Canada succeeded in getting the Soviet Union to compensate it for the damage caused by the destruction of a radioactive satellite in Canada by emphasizing which provisions applied to the situation); Joseph A. Burke, Note, *Convention on International Liability for Damage Caused by Space Objects: Definition and Determination of Damages After the Cosmos 954 Incident*, 8 FORDHAM INT'L L.J. 255, 256 (1984) (claiming that the Liability Convention has been invoked once with the Cosmos 954 when Canada "presented a claim for damages based in part on the Liability Convention," but the claim was resolved through diplomatic channels, preventing the furtherance of the claim under the convention).

122. *See* DeBusschere, *supra* note 30, at 102–03.

> [With] persons or property in outer space, liability attaches only where there is fault. As with damage, the lack of a definition for the term "default" is not defective. First, there has been no application of this provision up to this point. Thus, it is somewhat premature to declare this particular lack of definition to be a defect.

Id.

123. *See id.* at 100.

124. David Goren, Note, *Nuclear Accidents in Space and on Earth: An Analysis of International Law Governing the Cosmos-954 and Chernobyl Accidents*, 5 GEO. INT'L ENVTL. L. REV. 855, 855 (1993).

125. DeBusschere, *supra* note 30, at 100.

126. *Id.*

The Liability Convention brings third party or nonstate action under the control of the state, preventing both nonstate actor liability for its actions and claims from individuals against a launching state.[127] This aspect of the treaty becomes more important as more space activities are brought under private control.[128] Consequently, a launching state—one that allows the private entity to launch a space object from its territory—is liable for the actions of private entities.[129] The issue of state liability for the actions of private entities is something that requires further discussion on behalf of states.

Under the Liability Convention, there is an overall uncertainty whether the treaty covers space debris or the damage caused by space debris in outer space,[130] yet space debris is a serious concern for the future. Although the definition of "space object" seems to include space debris, there is no clear consensus to confirm such an assumption.[131] Thus, the treaty suffers from textual ambiguity that might exclude a significant problem, though there is an attribution problem.

III. ANALYSIS

To address current and future problems, the international community should amend the Liability Convention to create a Permanent Claims Commission, similar to the International Tribunal for the Law of the Sea; this would require parties to submit to binding dispute settlement and present them the opportunity to submit legal questions on the interpretation and application of the treaty decided by advisory opinion to develop lasting space liability law and to address treaty interpretation issues.[132] States developed the Liability Convention to address the con-

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127. Nonetheless, some states, such as the United States, might require nonstate actors to carry some form of insurance for space activities. *See* Christol, *supra* note 65, at 348. There is no guarantee, however, that the insurance carried by private corporations will be sufficient for complete liability should the potential cost of damage from space objects exceed the policy rate, which would burden the state with the responsibility for the remaining award amount because the state is liable under the Liability Convention. Michael Cooney, *Could Insurance Coverage Hobble Commercial Space Flights?*, NETWORKWORLD (June 7, 2012, 9:22 AM), http://www.networkworld.com/community/blog/could-insurance-coverage-hobble-commercial-space-flights.

128. *See supra* Part I.

129. Kerrest, *supra* note 9, at 92–95.

130. Lampertius, *supra* note 23, at 453.

131. *See id.* (stating even a strict interpretation of the Liability Convention should cover space debris as "matter originating from component parts of space objects or their launch vehicles").

132. The bifurcated structure of bringing a claim before the court or submitting a question to be resolved by advisory opinion mirrors other international courts, such as the International Court of Justice. *See* Statute of the International Court of Justice art. 65, June 26, 1945, 59 Stat. 1031, 33 U.N.T.S. 993 ("The Court may give an advisory opinion on any legal question at the request of whatever body may be authorized by or in accordance with the Charter of the United Nations

sequences of space objects damaging other space objects or returning to Earth and injuring innocent victims.[133] There are clear inadequacies in the treaty, which prevent an effective treaty regime from addressing liability for space activities.[134] Consequently, members of the international community must cooperate to make the necessary changes to create a more effective, responsive, and useable Liability Convention to address legitimate space concerns now and in the future.

This Part focuses on creating a binding dispute settlement and provision in the Liability Convention—similar to the binding dispute settlement provisions of Part XV, Section 2 of the U.N. Convention on the Law of the Sea (UNCLOS)—and a Permanent Claims Commission to hear cases and clarify space liability law to govern disputes more efficiently than the current treaty.[135] There is an overall need to reform the convention to make it more responsive to contemporary and future problems.[136] The current proposal is different from other proposals that would create a binding dispute settlement apparatus for *all* space activities because this proposal limits the binding dispute settlement to claims falling under the Liability Convention, which focuses on liability for damage caused by space objects.[137]

A. *Binding Dispute Settlement Encourages the Development of Space Law Jurisprudence Regarding Liability for Damage Caused by Space Objects.*

The Liability Convention should include a permanent institution to enforce binding dispute settlement procedures because the implementation of such provisions would spur the development of liability law for damage caused by space objects and other peripheral benefits associated with binding dispute settlement.[138] Requiring states to submit to binding dispute settlement procedures is important to a successful resolution of disputes concerning liability for damage caused by space objects.[139]

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to make such a request.").

133. Liability Convention, *supra* note 3, arts. I(a), II, III.

134. *See supra* Part II.A.3–4.

135. *See* United Nations Convention on the Law of the Sea (UNCLOS), pt. XV, § 2, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter UNCLOS].

136. *See generally supra* Part II.

137. The Liability Convention establishes liability for damage caused by space objects, Liability Convention, *supra* note 3, arts. II–III, unlike approaches that call for addressing all space activities. *See generally* GOH, *supra* note 61 (advocating for a multidoor approach with binding dispute settlement for all space activities, which is much broader than liability for damage caused by space objects).

138. GOH, *supra* note 61, at 170 (explaining the four reasons to develop a permanent institution with compulsory provisions).

139. Karl-Heinz Böckstiegel, *Arbitration and Adjudication Regarding Activities in Outer*

There are numerous advantages in establishing a permanent institution to implement binding dispute settlement. According to Goh, there are four reasons to support permanent institutions to ensure binding dispute settlement in space law:

> 1. A compulsory, permanent institution will ensure the certainty that disputes will be settled and the rule of law enforced within a flexible framework.
>
> 2. Given the high risks and unequal bargaining positions in space activities, disputing parties should not be allowed to opt out of peacefully settling their disputes.
>
> 3. *A compulsory, permanent institution ensures the certainty of the law and prevents against the fragmentation of international space law.*
>
> 4. A compulsory, permanent institution will be allowed to build up its legitimacy and jurisprudence, which is essential for confidence building.[140]

By creating a permanent institution to enforce binding dispute resolution for disputes, the Liability Convention will provide greater clarity and certainty for states and individuals on the resolution of disputes.[141] According to Goh, "[a] compulsory, permanent mechanism has the opportunity to generate a sustainable *corpus* of awards, case law, and norm-creation."[142] By requiring the parties to resolve disputes before a permanent tribunal, the interpretation and application of provisions of the Liability Convention will become a "sustainable *corpus*," allowing for greater clarity and certainty as they bring claims and defenses before the tribunal.[143] Additionally, international space law is not something that should be left to "*ad hoc* dispute settlement" because the intricate nature of the law requires a specialized tribunal able to base determinations on previous decisions and institutional knowledge to fully develop an effective and efficient body of space law as it tackles critical legal issues in an evolving field of science and technology.[144]

Space, 6 J. SPACE L. 3, 18 (1978) (explaining how a potential measure to facilitate state acceptance of dispute settlement would be to give them several options, but some of the options should lead the states to submit to compulsory, binding dispute settlement); *see also* UNCLOS, *supra* note 135, pt. XV, § 2 (providing several options requiring compulsory, binding resolution).

140. GOH, *supra* note 61, at 170 (emphasis added).

141. *Id.* at 171–72.

142. *Id.* at 172.

143. *Id.*

144. *Id.* ("International space law encompasses an intricate gossamer of public international law, private international law, and domestic legislation. *Ad hoc* dispute settlement is insufficient for such a sophisticated system of law.") (footnotes omitted). Consequently, the best solution would be to advocate for a permanent institution with parties submitting to compulsory dispute settlement. UNCLOS addresses the issue of expertise on the tribunal by selecting members "from among persons enjoying the highest reputation for fairness and integrity and of recognized competence in the field of the law of the sea." UNCLOS, *supra* note 135, annex VI, art. 2, para.

Therefore, the Liability Convention needs to be amended to include a permanent institution and require parties to submit to the permanent tribunal to have the dispute settled according to binding dispute settlement procedures. The Liability Convention will greatly benefit from having a binding dispute settlement procedure at a permanent institution because of the greater certainty for the parties and the ability to develop the Liability Convention through interpretation and application of the provisions in a manner that effectively addresses contemporary and future liability issues. A specialized tribunal would be able to address more efficiently the legal issues related to liability under the Liability Convention.

B. *The Binding Dispute Settlement Provisions of the Law of the Sea Convention Should Be Used as a Model to Modify the Liability Convention.*

UNCLOS serves as a beneficial guide to implement a binding dispute settlement procedure within the Liability Convention.[145] According to Böckstiegel, "[e]xperiences regarding compulsory procedures for the settlement of disputes in the law of the sea can be considered as being of specific relevance" in the context of space law.[146] For example, three characteristics of UNCLOS are relevant to space law. First, "the law of the sea generally presents many similarities, in fact and in law, to space law."[147] Second, UNCLOS "is the one field in which we have the most recent experience in what States may or may not accept as procedures for the settlement of disputes."[148] Third, UNCLOS has "an elaborate system of dispute settlement," which is "extremely creative, because in most cases it will lead to a binding third party decision."[149] Additionally, Goh characterizes both the law of the sea and space law as dealing with the world's common spaces.[150] Consequently, UNCLOS is an exceptional convention to analogize with for the creation of a permanent institution and development of dispute settlement provisions in the Liability Convention.

The structure of UNCLOS allows for compulsory, binding dispute settlement under Part XV, Section 2, entitled "Compulsory Procedures

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145. *See generally* UNCLOS, *supra* note 135, pt. XV, § 2 (setting out a comprehensive binding dispute settlement procedure).

146. Böckstiegel, *supra* note 139, at 11.

147. *Id.*

148. *Id.*

149. GOH, *supra* note 61, at 232.

150. *See id.* at 228 (discussing developments in fields comparable to space law).

Entailing Binding Decisions."[151] As a whole, Part XV is considered rather flexible.[152] Additionally, this provision is considered one of the most innovative aspects of the treaty.[153] For instance, the dispute settlement provisions in Part XV, Section 2 "are unique, because for the first time, all of the major interest blocs of states, including the Soviet bloc, agreed on a standard set of provisions for dispute settlement," the binding nature of dispute settlement proving especially important.[154] According to Part XV, Section 1, parties to the convention must seek peaceful means to settle their disputes but have the option of choosing any means that the parties see fit to resolving their dispute.[155] Under Part XV, Section 2, Article 286, however, "any dispute concerning the interpretation or application of this Convention shall, where no settlement has been reached by recourse to section 1, be submitted at the request of any party to the dispute to the court or tribunal having jurisdiction under this section."[156] Thus, if the parties are unable to resolve the dispute according to the chosen means, they must resolve the dispute according to the compulsory procedures of UNCLOS.

Parties that are unable to resolve conflicts on their own may settle the dispute through several options such as the International Tribunal for the Law of the Sea (ITLOS).[157] The jurisdiction of ITLOS is "over any dispute concerning the interpretation or application" of UNCLOS.[158] The tribunal is able to help develop the law of the sea according to the interpretation and application of the convention to various disputes.[159] Regarding the continued support and legitimacy of the convention, Article 296(1) allows that "[a]ny decision rendered by a court or tribunal having jurisdiction under this section shall be final and shall be complied with by all the parties to the dispute."[160] The decision, however, "shall have no binding force except between the parties and in respect of that particular dispute."[161] This encompasses the binding and finality aspects of the decision by the tribunal although the decision does not alter disputes from other parties. Article 298, however, covers "optional

151. UNCLOS, *supra*, note 135, pt. XV, § 2.

152. GOH, *supra* note 61, at 233.

153. *See id*. at 236–37.

154. John Warren Kindt, *Dispute Settlement in International Environmental Issues: The Model Provided by the 1982 Convention on the Law of the Sea*, 22 VAND. J. TRANSNAT'L L. 1097, 1098–99 (1989).

155. UNCLOS, *supra* note 135, arts. 279–81.

156. *Id.* art. 286.

157. *Id.* art. 287.

158. *Id.* art. 288.

159. *Id.*

160. *Id.* art. 296, para. 1.

161. *Id.* art. 296, para. 2.

exercises," which permits the exemption of "traditionally sensitive types of disputes from the rules on compulsory jurisdiction . . . concerning territorial sovereignty, military activities, or fishing rights."[162] Thus, the Liability Convention should be amended to assimilate UNCLOS, specifically ITLOS.

One scholar, Wong, however, proposes that the Liability Convention should supplement the Model Law of the U.N. Commission on International Trade Law as the alternative dispute resolution system.[163] Nevertheless, there are several problems with a procedure that lacks a permanent institution and instead focuses on a quick and less costly settlement to avoid crippling companies financially.[164] First, the lack of a permanent institution robs the Liability Convention of the ability to develop specialized legal decisions over time and create greater certainty for parties to the treaty.[165] Second, the overall sentiment of favoring quick resolutions that do not financially cripple parties is contrary to the Liability Convention's primary goal of fairly compensating innocent victims of damage caused by space objects.[166] Third, allowing parties to retain the ability to determine whether decisions of third-party entities will be binding[167] forgoes a significant advantage of resolving disputes in a clear and efficient manner.[168] Therefore, the Liability Convention should adopt a binding dispute settlement similar to that of UNCLOS.

C. *Proposal: Establishing a Permanent Claims Commission with Binding Dispute Settlement Power Makes the Liability Convention More Responsive and Effective.*

Members of the international community should invoke Article XXVI of the Liability Convention and convene a meeting to review the treaty and potential changes.[169] Importantly, the members should agree

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162. GOH, *supra* note 61, at 235 (explaining how this aspect of the convention allowed for greater state support because of the ability to exempt certain activities from the compulsory jurisdiction).

163. Ka Fei Wong, *Collaboration in the Exploration of Outer Space: Using ADR to Resolve Conflicts in Space*, 7 CARDOZO J. CONFLICT RESOL. 445, 469–70 (2006) (advocating for a third-party state in negotiations to serve as a moderator and supporting an arbitration procedure that still allows parties to determine whether the decision will be binding).

164. *See id*. at 466–68.

165. *See* GOH, *supra* note 61, at 170.

166. *See* Liability Convention, *supra* note 3, pmbl.

167. *See* Wong, *supra* note 163, at 470.

168. *See* GOH, *supra* note 61, at 170.

169. Article XXVI states as follows:

> However, at any time after the Convention has been in force for five years, and at the request of one third of the States Parties to the Convention, and with the concurrence of the majority of the States Parties, a conference of the States Parties shall be convened to review this Convention.

that they must reform the treaty to resolve the central issues of the convention and strengthen the treaty by being more responsive to liability issues and more effective in resolving future disputes.[170] To accomplish these goals, the state parties must take four crucial steps. First, the states must create the Permanent Claims Commission to hear all issues regarding interpretation and application of the treaty. Second, they must require compulsory, binding dispute settlement. Third, they must allow parties to submit questions to the Permanent Claims Commission to be addressed by advisory opinion. Fourth, they must clarify the status of private entities under the current convention. With these changes, the Liability Convention would have a sitting commission capable of addressing treaty interpretation and application issues, which have thus far hindered the treaty.[171] These important amendments must be proposed and accepted to strengthen the Liability Convention.[172]

First, there must be the creation of a Permanent Claims Commission by amending Article XIV to read: "[i]f no settlement of a claim is arrived at through diplomatic negotiations as provided for in Article IX or if a party chooses determination by the Permanent Claims Commission, any party to the dispute may submit its claim to the Permanent Claims Commission to resolve the dispute."[173] This allows the parties to use diplomatic channels under Article IX as the first basis to resolve the conflict, but if the parties are unable to do so or one party decides to bring the claim before the Permanent Claims Commission, the parties must have the Permanent Claims Commission resolve the matter.[174] Furthermore, parties to the treaty should replace Article XV, which de-

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Liability Convention, *supra* note 3, art. XXVI. If states do not see it necessary to convene a conference, however, under Article XXV of the Liability Convention, states may propose amendments to the treaty that a majority of other states would need to accept. *Id.* art. XXV. The amendment process seems less favorable than convening a meeting where parties could discuss issues together.

170. The parties must recognize the need to change to combat the likely unwillingness of some parties to change the treaty. *See infra* Part III.E.

171. *See supra* Part II.A.4 (discussing recurring issues with the Liability Convention).

172. Although the proposed language of the amendments might not be incorporated in the final revisions of the convention, it is important for the parties incorporate the key concepts and ideas when changing the current language of the treaty.

173. Article XIV of the Liability Convention, *supra* note 3, provides:

> If no settlement of a claim is arrived at through diplomatic negotiations as provided for in article IX, within one year from the date on which the claimant State notifies the launching State that it has submitted the documentation of its claim, the parties concerned shall establish a Claims Commission at the request of either party.

Thus, the amended language removes the time requirement and creates a Permanent Claims Commission as opposed to an *ad hoc* commission that forms whenever the parties so require.

174. This equates compulsory dispute settlement similar to the provisions in UNCLOS. *See* UNCLOS, *supra* note 135, arts. 286–87 (requiring states parties to accept the decisions of the International Tribunal for the Law of the Sea (ITLOS)).

scribes the membership of the Claims Commission,[175] with language similar to provisions in UNCLOS, Annex VI, which establishes ITLOS.[176] Similar to Article XVI, Section 3 of the Liability Convention, the Permanent Claims Commission "shall determine its own procedure."[177] The Permanent Claims Commission, however, should use the procedure set forth in UNCLOS, Annex VI, Articles 24–34 as a guiding formulation for procedure.[178] Allowing the Permanent Claims Commission to determine its own procedure, while looking to UNCLOS, Annex VI for guidance, provides a procedure tailored to the needs of the Permanent Claims Commission as opposed to those of ITLOS. Thus, the international community should amend the Liability Convention to create a standing Permanent Claims Commission to which parties are able to bring disputes at any point to resolve conflicts in a manner similar to ITLOS.

Second, the parties should amend the Liability Convention to allow for binding dispute settlement. Under the current treaty, parties before the Claims Commission must agree to binding determinations, with the alternative being a recommendatory award from the commission. Instead, Article XIX, Section 2 should state: "[t]he decision of the Permanent Claims Commission shall be final and binding on the parties before the Commission with no binding force except between the parties and in respect of that particular dispute."[179] This change allows the Liability Convention to implement the benefits of binding dispute settlement.[180] Moreover, this structure does not preclude the ability of parties to a dispute to refer to previous binding decisions of the Permanent Claims Commission. Thus, the Permanent Claims Commission is able to hand down binding decisions on all parties to the dispute and provide clarity for future disputes.

Third, parties should be allowed to submit questions to the Permanent Claims Commission to receive an advisory opinion regarding the interpretation and application of the Liability Convention. Article XIX, Section 3 should read that "[t]he Court may give an advisory opinion on any legal question related to the Liability Convention at the request of

175. Liability Convention, *supra* note 3, art. XV.

176. UNCLOS, *supra* note 135, annex VI.

177. Liability Convention, *supra* note 3, art. XVI, para. 3.

178. UNCLOS, *supra* note 135, annex VI, arts. 24–34 (explaining ITLOS procedures).

179. *Cf.* Liability Convention, *supra* note 3, art. XIX, para. 2; *see also* UNCLOS, *supra* note 135, art. 296, para. 2 (emphasizing the binding nature of the decision on the parties before the court but not to parties or issues not in front of the court, although this does not preclude the ability to use the decisions in precedential manner).

180. GOH, *supra* note 61, at 170.

any party that is authorized to make that request."[181] A substantial advantage of advisory opinions is the "speed with which it could operate,"[182] affording parties efficient determinations to important questions under the Liability Convention. Additionally, the advisory opinion is an advantageous course of action for determining the meaning and application of provisions of the Liability Convention, especially considering the lack of utilization of the Liability Convention. Thus, parties to the Liability Convention should be allowed to submit questions to the Permanent Claims Commission for advisory opinions.

Fourth, the parties need to determine how to deal with both private entities injured by space objects and private entities that cause the damage. Under the current treaty structure, states are the only entities allowed to bring and defend claims.[183] The parties should decide whether they would prefer to keep the current structure or amend the treaty to allow for individuals and private entities to bring and defend claims outside of the guise of a state. Some parties might prefer to remove state liability for damage caused by private entities because state "liability could cause certain states [referring to the states of the United States] to set up stringent regulations that inhibit private enterprises."[184] Consequently, private enterprise might prefer to be free of the state with regard to liability as a means to prevent stringent regulation of the field.

Considering the potentially substantial compensation required for damage caused by space objects,[185] however, states should be required to remain liable for private actors because that is the best means to provide full and satisfactory compensation to innocent victims. Thus, the parties to the Liability Convention need to make a determination about state liability for private actors. Whichever selection parties make, the effectiveness of the changes to the Liability Convention should not change because the Permanent Claims Commission will be flexible enough to fulfill the goals of the treaty. By implementing these suggestions, the international community will establish an effective and responsive international liability framework for damage caused by space objects.

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181. The change in language removes the promptness requirement of the commission, Liability Convention, *supra* note 3, art. XIX, para. 3, and implements a provision allowing for advisory opinions similar to Article 65 of the Statute of the International Court of Justice. *See* Statute of the International Court of Justice, *supra* note 132, art. 65.

182. Oliver P. Field, *The Advisory Opinion—An Analysis*, 24 IND. L.J. 203, 206–07 (1947) (discussing how advisory opinions are able to reduce time by not requiring there to be an actual dispute over an issue).

183. Liability Convention, *supra* note 3, art. VIII.

184. Pitts, *supra* note 21, at 693.

185. Cooney, *supra* note 127.

D. *The Changes to the Liability Convention Would Allow the Permanent Claims Commission to Resolve Important Issues Regarding Treaty Interpretation and Application.*

The implementation of these changes to the Liability Convention would create a permanent institution with the capacity to enforce binding dispute settlement proceedings and issue advisory opinions regarding the interpretation and application of the treaty. These changes are meant to incorporate the benefits of permanent, binding dispute settlement to create a body of law that would help address contemporary and future problems. The Permanent Claims Commission would better be able to address all of the problems before the commission and address different concerns in a subsequent dispute due to the flexibility of a specialized, permanent tribunal.[186]

Changes to the Liability Convention will allow the Permanent Claims Commission to resolve current and future problems. As a hypothetical situation, under the advisory opinion power of the commission, a party might submit a question regarding the interpretation of "damage" in the treaty.[187] Interested parties would be able to submit materials arguing for a specific interpretation. The commission could hold hearings in which it discusses the definition according to space law. Then, the commission would rely on the expertise of its members to resolve the question, submitting an advisory opinion laying out the legal determination and reasoning for such a determination, based on a majority of the commission's members. The same could be done for the interpretation of "space object"[188] in terms of whether space debris falls under the definition in the treaty. Consequently, parties would be able to understand how better to interpret and apply the Liability Convention, addressing important issues of liability for damage caused by space objects.

E. *Roadblocks to Amending the Liability Convention Exist, but States Should Overcome Disapproval Because the Changes Are Necessary.*

1. The Potential Unwillingness to Cooperate on and Implement Necessary Changes

States may not readily accede to such far-reaching changes because they fear the consequences. During the formation of the Liability Convention, many of the negotiating parties, especially members of the Soviet bloc, were unwilling to accept compulsory dispute settlement to re-

186. *Cf.* GOH, *supra* note 61, at 172 (discussing the benefits of a permanent dispute settlement institution).

187. The meaning of damage is unclear under the current treaty. *See supra* Part II.A.3.i.

188. *See supra* Part II.A.3.ii.

solve disputes brought by the parties because these parties feared the consequences of mandatory resolution procedures and the ever-present distrust of the Western governments.[189] It is likely that many more states will be critical of similar procedures now because of the unknown consequences of such a procedure.[190] For instance, Böckstiegel highlights the real possibility that as states realize their interest in space use, the ability to develop a consensus on space activities diminishes substantially.[191] Initially, only countries with legitimate ability negotiated the terms of the treaties because countries without the technological capability failed to foresee future interests and developments, including the impact of the treaty on them.[192] This has changed substantially, however, since the development of the treaty with the risks and costs of space activities decreasing significantly.[193] Although there is currently a clear need to make changes to address contemporaneous and future problems, there might be serious controversy and unlikely acceptance of fundamental reforms as parties might be unwilling to accept the compulsory, binding dispute settlement before a Permanent Claims Commission.[194] Previous amendments to the Liability Convention have failed in the past,[195] but states must rise to the occasion and adopt these changes to resolve important issues regarding liability.

2. The Changes Are Necessary and Should Be Adopted by All Members of the Liability Convention.

The parties have changed dramatically since the inception of the Liability Convention with the end of the Cold War and the breakup of the Soviet Union. It is likely that changes since 1972 will facilitate a greater acceptance of the compulsory dispute settlement provision within the Liability Convention for the desire to improve space law and better define state and individual liability under a more comprehensive convention. Moreover, many state parties have learned to accept compulsory dispute settlement in other forms such as UNCLOS, the European Space

189. *See supra* Part II.A.2.

190. *See* Böckstiegel, *supra* note 139, at 5, 17.

191. *See id.* at 3.

192. *See id.* at 3–5.

193. Von der Dunk, *supra* note 17, at 505.

194. *See* VALÉRIE KAYSER, LAUNCHING SPACE OBJECTS: ISSUES OF LIABILITY AND FUTURE PROSPECTS 285 (2001) (discussing an Austrian proposal to strengthen the Liability Convention by having states make "a declaration of acceptance of the binding character of the decisions of the Claims Commission," but it was unclear that any state was willing to support the Austrian initiative). This Note hopes a renewed and more forceful effort to amend the Liability Convention will avoid the pitfalls of the Austrian initiative.

195. *Id.*

Agency, and the Intelsat Agreement.[196] Consequently, it is likely that the parties to these organizations and conventions, especially UNCLOS, will exhibit a greater willingness to submit to binding dispute settlement before a permanent institution.

More importantly, the parties to the Liability Convention must consider the policy rationale for establishing liability. Christol explains as follows:

> Liability will fall upon those having the capacity to bear the losses. The imposition of damages will serve as an inducement to the exercise of the utmost care. The prescribed processes can be engaged immediately so that inordinate delays will not cause additional harm to deserving claimants . . . . [I]t should be recalled that during the negotiations it was made manifestly clear that the convention was designed to benefit potential claimants.[197]

The parties to the Liability Convention should understand the purpose and policy implications of the treaty in terms of the desire to make whole the innocent victim of damage caused by space objects in the best and most efficient terms possible. Thus, the parties to the convention should support provisions that will both develop the body of law and formulate a beneficial legal mechanism to best serve victims injured by space objects. This consideration is at the heart of liability for damage caused by space objects in terms of weighing the benefits of space utilization versus the substantial harm and the compensation necessary to relieve injuries.[198] The balance of these two considerations will be the determining factor in whether some states decide to support making substantial changes to the Liability Convention or allow the convention to remain in its present state and fail to become operative.

IV. CONCLUSION

Although the reforms to the Liability Convention might be exceedingly beneficial, the potential backlash from signatories might jeopardize the entire process of changing the treaty.[199] States need to seriously evaluate how the Liability Convention is interpreted and applied because the future of space activities depends on a treaty that is able to redress damage caused by space objects effectively and efficiently. Liability must continue to focus on making the victim whole, while allowing for the perpetrators of the damage to continue their activities

196. Böckstiegel, *supra* note 139, at 7–8 (explaining how different international organizations approach disputes between their parties, forcing them into compulsory dispute settlement with a binding resolution of the dispute as a result).

197. Christol, *supra* note 65, at 371.

198. *Id.* at 350.

199. *See* Böckstiegel, *supra* note 139, at 3–5, 17.

as long as those activities are something they can continue to afford. The creation of the Permanent Claims Commission with binding dispute resolution over claims concerning the interpretation or application of the Liability Convention—similar to UNCLOS and ITLOS—will be a significant improvement from the current convention. Under the current convention, there is a significant failure to establish a *corpus* of law that develops with technology and reacts to the issues of the day, and the convention lacks effectiveness because parties persist in working around the treaty. Thus, the international community needs to decide whether to address concerns about liability for damage caused by space objects in an efficient and effective manner or to continue to suffer from a vacuum in authority. The international community needs to make these changes to compensate innocent victims of space.