

# The Emergence of a National Space Law Legislation

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## Abstract

A growing number of States are becoming space-faring nations. Many are enacting national space legislation, establishing governmental institutions and giving them jurisdiction to license private actors and ensure compliance with regulatory requirements. The introduction of this paper identifies requirements of State obligations as contained in the space law multilateral conventions. Some of these require registration, while others hold the state responsible and liable for space activities of their personal and corporate citizens. That overview of international legal obligations is followed by a succinct comparative law analysis of similarities and differences in recently promulgated national space laws. In particular, it will provide a brief overview of how space agencies are structured, their policy obligations, responsibilities, licensing and enforcement power.

## I Introduction

Today, space is among the fastest growing industries, accounting more than \$50 billion in annual spending by governments alone in civil and military applications, and generating more than \$250 billion a year in revenue.<sup>1</sup> Space investment is a major part of the infrastructure of communications – both telecommunications and broadcast – of weather and geological monitoring, and of defense. As private firms launch commercial space activities, the legal obligations of the growing number of space-faring States grow as well.

By acceding to either the Outer Space Treaty of 1967 [OST], the Rescue Agreement of 1968 [RA], or the Liability Convention of 1972 [LC], the launching or launch-procuring State becomes potentially liable for damages caused by itself

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1 <[www.thespacereport.org/08executivesummary.pdf](http://www.thespacereport.org/08executivesummary.pdf)> (accessed: 06 Sep 2008).

and its commercial launch sector.<sup>2</sup> A ratifying State accepts absolute liability for damage on the ground or to aircraft in flight outside its territory when a launch takes place from its territory or facilities, or when it procures a launch from another State.<sup>3</sup> A State incurs fault-based liability for damage caused in outer space.<sup>4</sup>

State liability for damage also may be imposed under customary principles of international law. However the regime is not exclusive in that recourse against the State or the commercial operator under the commonly applicable domestic law of a jurisdiction is not foreclosed.

For a dozen years commencing in 1967, the world community drafted five major multilateral conventions establishing the basic principles of Space Law:

- The “Outer Space Treaty” of 1967;<sup>5</sup>
- The “Rescue Agreement” of 1968;<sup>6</sup>
- The “Liability Convention” of 1972;<sup>7</sup>
- The “Registration Convention” of 1976;<sup>8</sup>
- And
- The “Moon Agreement” of 1979.<sup>9</sup>

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2 Ronald Spencer Jr., *International Space Law: A Basis for National Legislation*, in *National Regulation of Space Activities* 1, 9 (Ram Jakhu ed., Springer 2010).

3 Fed. Reg. 48311-01 (2001), 2001 WL 1089331 (F.R.) US Federal Aviation Administration.

4 Henry Hertzfeld & Ben Baseley-Walker, *A Legal Note on Space Accidents*, *Zeitschrift für Luft- und Weltraumrecht* [German J. of Air & Space L.] 230, 233 (2010).

5 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, opened for signature Jan. 27, 1967, 19 U.S.T. 2410, T.I.A.S. 6347, 610 U.N.T.S. 205, 6 I.L.M. 386, G.A. Res. 2222 (XXI), opened for signature on 27 January 1967, entered into force on 10 October 1967.

6 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, opened for signature Apr. 22, 1968, 19 U.S.T. 7570, 672 U.N.T.S. 119, G.A. Res. 2345 (XXII), entered into force on 3 December 1968.

7 Convention on International Liability for Damage Caused by Space Objects, opened for signature Mar. 29, 1972, 24 U.S.T. 2389, T.I.A.S. 7762, 961 U.N.T.S. 187, 10 I.L.M. 965, G.A. Res. 2777 (XXVI), opened for signature on 29 March 1972, entered into force on 1 September 1972.

8 Convention on Registration of Objects Launched into Outer Space, opened for signature Jan. 14, 1975, 28 U.S.T. 695, T.I.A.S. 8480, 1023 U.N.T.S. 15, G.A. Res. 3235 (XXIX), entered into force on 15 September 1976.

9 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, opened for signature Dec. 18, 1979, 1986 A.T.S. 14, 18 I.L.M. 1434; G.A. Res. 34/68, entered into force on 11 July 1984.

Collectively, these five treaties place numerous obligations upon States.<sup>10</sup> Among the obligations imposed upon the 98 States that have ratified the Outer Space Treaty of 1967 are the following:

- States may not appropriate space, the moon or celestial bodies by claims of sovereignty or any other means;<sup>11</sup>
- States must carry on space activities in accordance with principles of international law;<sup>12</sup>
- States may not place in orbit or on celestial bodies nuclear or other weapons of mass destruction, nor may they install military bases, test weapons or conduct military maneuvers on celestial bodies;<sup>13</sup>
- States must render assistance to astronauts in the event of accident, distress or emergency;<sup>14</sup>
- States bear international responsibility for national activities in space and on the moon and celestial bodies, including activities of both governmental and non-governmental entities; non-governmental entities must be authorized and supervised by the appropriate State;<sup>15</sup>
- States that (a) launch, (b) procure the launch, or (c) from whose territory or facility an object is launched, are internationally liable for damage to another State or its national or juridical persons by such object in the air or space;<sup>16</sup>
- States on whose registry an object is launched must retain jurisdiction and control over the object and any personnel thereof;<sup>17</sup>
- States must avoid harmful contamination and adverse environmental consequences from the introduction of extraterrestrial matter; if it believes an activity or experiment by it or its nationals in space would potentially harm

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10 See Paul Stephen Dempsey, *Public International Air Law* 743-45 (McGill 2006).

11 Outer Space Treaty Art. II.

12 Outer Space Treaty Art. III.

13 Outer Space Treaty Art. IV.

14 Outer Space Treaty Art. V. Article V of the Outer Space Treaty imposed an obligation upon States to render astronauts “all possible assistance in the event of accident, distress, or emergency” and on landing in the territory of another State, to provide for their safe and prompt return to the State of registry of their space vehicle.

15 Outer Space Treaty Art. VI. Article VI of the Outer Space Treaty imposes upon States international responsibility for national activities in space, including the activities of both governmental and non-governmental entities.

16 Outer Space Treaty Art. VII. Article VII provides that States that (a) launch, (b) procure the launch, or (c) from whose territory an object is launched, are internationally liable for damage caused to another State or its national or juridical persons by such object whether in the air or in space.

17 Outer Space Treaty Art. VIII. Article VIII of the Outer Space Treaty requires that space objects and component parts found in a State shall be returned to the State of registry.

- or interfere with activities of other States in space, it must consult with such States before proceeding;<sup>18</sup> and
- States must inform the UN Secretary General of the “nature, conduct, locations and results” of its activities in space.<sup>19</sup>

Several of these provisions are elaborated upon in the Rescue Agreement of 1967. Among its 90 ratifying States, the Rescue Agreement requires, *inter alia*, the following:

- States which discover that spacecraft personnel have suffered an accident or are experiencing distress or have made an emergency or unintended landing shall immediately notify the UN Secretary General and the “launching authority” (i.e., the State or intergovernmental organization responsible for launching the space object),<sup>20</sup> or if it cannot determine that authority, the discovering State shall make a public announcement;<sup>21</sup>
- States must return the objects found to the launching authority, upon request; expenses incurred in recovering and returning a space object shall be borne by the launching authority.<sup>22</sup>

Several of these provisions also are elaborated upon by the Liability Convention. Among the obligations the Liability Convention imposes upon the 86 States that have ratified it are that the “launching State” (i.e., the State that launches, procures the launch, or from whose territory or facility a space object is launched)<sup>23</sup> shall be absolutely liable for damage caused by its space object on the surface of the Earth or to an aircraft in flight,<sup>24</sup> and liable for negligence for damage caused elsewhere than on the surface of the Earth to a space object of another State or to persons or property on board.<sup>25</sup>

Article VIII of the Outer Space Treaty provides that the State of registry shall retain jurisdiction and control over a space object and any personnel thereon, whether in space or on a celestial body. But it does not define the “State of registry.” The Registration Convention of 1976 provides elaboration for the 51 States that ratified it. The Registration Convention defines the “State of registry” as the launching State (recall the definition above)<sup>26</sup> on whose registry a space object is carried.<sup>27</sup> The Convention requires that every space object

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18 Outer Space Treaty Art. IX.

19 Outer Space Treaty Art. XI.

20 Rescue Agreement Art. 6.

21 Rescue Agreement Art. 1, Art. 5.

22 Rescue Agreement Art. 5(3).

23 Liability Convention Art. I.

24 Liability Convention Art II.

25 Liability Convention Art. III.

26 Liability Convention Art. I.

27 Registration Convention Art. I.

launched be entered in appropriate registry that the launching State shall maintain.<sup>28</sup> It defines the information that shall be carried on the registry.<sup>29</sup> The Convention also requires that the State of registry must notify the UN Secretary General of space objects which were, but no longer are, in Earth orbit.<sup>30</sup> In addition to these multilateral conventions, additional legal obligations are imposed upon States through customary international law, a variety of United Nations Security Council and General Assembly Resolutions, and a growing body of “soft law.”<sup>31</sup>

## II Federal Space Agencies

A growing number of States have promulgated national space legislation that establishes a governmental institution with jurisdiction over space activities and confers various regulatory powers and promotional obligations upon it. For example:

- Canada established the Canadian Space Agency, giving it jurisdiction to plan, direct, manage and implement programs for space research and development; transfer technology, encourage commercial exploitation of space. Its President is appointed to a five year term, and oversight is provided by a 19-member Advisory Board.<sup>32</sup>
- Argentina created a National Commission on Space Activities, giving it jurisdiction to conduct research, advanced engineering; development of national space projects; and training research, technology transfer, cooperation, and technical assistance.<sup>33</sup>
- Chile created the Chilean Space Agency (a Presidential advisory committee) to propose national space policy, coordinate it, encourage scientific, technology and academic interaction, as well as the study of and dissemination of information of space activities.<sup>34</sup>
- Russia established the Russian Space Agency, headed by a board; it issues licenses, certification of space technology; and ensures the safety of space activities. It manufactures and delivers space machinery and space infrastructure; it maintains the space registry, and concludes treaties.<sup>35</sup>

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28 Registration Convention Art. II.

29 Registration Convention Art. IV.

30 Registration Convention Art. IV(3).

31 See Steven Freedland, *For Better or Worse? The Use of ‘Soft Law’ Within the International Legal Regulation of Outer Space*, XXXVI Annals of Air & Space L. 409 (2011).

32 Paul Stephen Dempsey, SPACE LAW Ch. 14 (Thomson Reuters/West 2012).

33 Paul Stephen Dempsey, SPACE LAW Ch. 10 (Thomson Reuters/West 2012).

34 Paul Stephen Dempsey, SPACE LAW Ch. 15 (Thomson Reuters/West 2012).

35 Paul Stephen Dempsey, SPACE LAW Ch. 29 (Thomson Reuters/West 2012).

- Many other States have established federal space agencies, including Korea, South Africa, Sweden, and the United Kingdom.
- The United States has a number of different space agencies including the National which regulates commercial activity in space.<sup>36</sup>

### III National Space Policies

A number of States have established national space policies in their domestic legislation.<sup>37</sup> For example:

- Belgium’s policy seeks to ensure the safety of people and property, protect the environment, advance the optimal use of air space and outer space, protect strategic, economic and financial interests of the State, and fulfill Belgium’s obligations under international law.<sup>38</sup>
- The European Union’s policy calls for freedom of access, exploration or use space; the use of space for self-defense; the peaceful exploration and use of space; it calls upon EU member States to abide by and implement ITU recommendations and regulations, and adopt the Committee on the Peaceful Uses of Outer Space [COPUOUS] Space Debris Mitigation Guidelines.<sup>39</sup>
- Japan’s policy calls for development of scientific research and technology development; the satisfaction of social needs; space economics; international cooperation; development of the space industry; and the preservation of the space environment.<sup>40</sup>
- Korean policy calls for the peaceful use and scientific exploration of space; the Aeronautical and Space Administration [NASA], addressing scientific and technological issues, and the Office of Commercial Space Transportation within the Federal Aviation Administration [FAA], enhancement of national security and the national economy; and the use of space to raise the standard of living.<sup>41</sup>

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36 These statutes are set forth in Paul Stephen Dempsey, *SPACE LAW* (Thomson Reuters/West 2012). See also, <[www.faa.gov/about/office\\_org/headquarters\\_of\\_fices/ast/](http://www.faa.gov/about/office_org/headquarters_of_fices/ast/)> (visited Sept. 11, 2012).

37 See e.g., Paul Stephen Dempsey, “*Overview of United States Policy and Law*” in *National Regulation of Space Activities 373-404* (R. Jakhu ed. 2010), and Paul Stephen Dempsey, “*The Evolution of US Space Policy*”, XXXIII *Annals of Air & Space Law* 324-43 (2008).

38 Paul Stephen Dempsey, *SPACE LAW* Ch. 12 (Thomson Reuters/West 2012).

39 Paul Stephen Dempsey, *SPACE LAW* Ch. 17 (Thomson Reuters/West 2012).

40 Paul Stephen Dempsey, *SPACE LAW* Ch. 24 (Thomson Reuters/West 2012).

41 Paul Stephen Dempsey, *SPACE LAW* Ch. 25 (Thomson Reuters/West 2012).

- Russian policy calls for the use of outer space for peaceful purposes; improvement and development of rocket and space technology; piloted space flights; promotion of the well-being of its citizens; ensure national security and defense; solve global problems; study earth and outer space; and develop science and technology.<sup>42</sup>
- Ukrainian national space policy calls for socio-economic development and scientific progress; promoting welfare; developing the national economy, national security and defense; accepting responsibility under international law and treaties; enhancing national sovereignty, international links, and the global economy; and preventing environmental damage.<sup>43</sup>
- The United States has embraced a variety of national policies over time, including leadership, cooperation, peace, defense, science and technology, cost effectiveness, commercialization and environmental protection.<sup>44</sup>

#### **IV Registration Requirement**

So as to comply with the Registration Convention, several States require that all space objects launched by its corporate or individual citizens be registered. Australia and Belgium are among them, with Belgium creating a National Register in accordance with the Registration Convention.<sup>45</sup>

#### **V Licensing Requirements**

As recently as 2012, COPUOUS recommended that, “Space activities should require authorization by a competent national authority; the authorities and procedures, as well as the conditions for granting, modifying, suspending and revoking the authorization should be set out clearly to establish a predictable and reliable regulatory framework . . . . The conditions for authorization should be consistent with the international obligations and commitments of States, in particular under the United Nations treaties on outer space . . . .”<sup>46</sup>

One of the major ways in which States seek to protect national safety and adherence to their international obligations is through the process of licensing. For example:

- Australia requires that the launch facility, launch vehicle, flight path must be effective and safe; applicants must submit design and engineering plans; prior to launching, they must receive approval from local ambulance, fire,

42 Paul Stephen Dempsey, *SPACE LAW* Ch. 29 (Thomson Reuters/West 2012).

43 Paul Stephen Dempsey, *SPACE LAW* Ch. 33 (Thomson Reuters/West 2012).

44 These statutes are set forth in Paul Stephen Dempsey, *SPACE LAW* Chapters 35-40 (Thomson Reuters/West 2012).

45 These statutes are set forth in Paul Stephen Dempsey, *SPACE LAW* (Thomson Reuters/West 2012).

46 COPUOUS, Legal Subcomm. 52st Sess. A/AC.105/C.2/2012/LEG/L.1 (Mar. 2012).

police; environmental approvals also are required; applicants must identify their organizational structure and financial standing; program management plan, their technology security plan, and their emergency plan; one may receive a launch permit or exemption certificate for launch and return, and a space license up to 20 years; launch must not be conducted in a way likely to cause harm to public health or safety or damage property; no nuclear weapon or weapon of mass destruction, no fissionable material may be launched without prior approval; insurance and financial requirements also are imposed.<sup>47</sup>

- In Belgium one must obtain prior authorization to engage in space activities; environmental studies are required.<sup>48</sup>
- Brazil requires a license of Space Launching Activities; it may contain restrictive or conditioning clauses; technical, economic and financial qualifications are imposed upon licensees.<sup>49</sup>
- Hong Kong requires a license to launch, procuring a launch, operate a space object, or engage in any activity in space; the operations must not jeopardize public health or safety of persons or property; activities must be conducted consistently with international obligations, and not impair national security; licensees must prevent contamination, and avoid interference with others.
- Ireland provides that a rocket may not be operated without a license.<sup>50</sup>
- In Norway, one may not launch without permission from Norway, from Norwegian territory, vessels or aircraft, or launches by a
- Norwegian citizen or resident in areas not subject to sovereignty.<sup>51</sup>
- South Africa requires a license for a launch from South African territory, or on behalf of South African incorporated or registered company, or for the operation of a launch facility; safety standard are imposed; and compliance is required with international obligations and responsibilities.<sup>52</sup>
- In Sweden, no space activity is permitted without a license on Swedish territory or by a Swedish person; it may be restricted in a manner deemed appropriate; receiving signals from space is not considered to be a space activity, nor is a sounding rocket launch; an application in writing must be submitted to the National Board for Space Activities.<sup>53</sup>
- In the United Kingdom, a launch, operating a space activity or any activity in outer space (other than leasing a space segment satellite capacity, transponders) requires a license; the activity may not jeopardize public health or safety of persons or property, and must be conducted in a manner consistent

47 Paul Stephen Dempsey, SPACE LAW Ch. 11 (Thomson Reuters/West 2012).

48 Paul Stephen Dempsey, SPACE LAW Ch. 12 (Thomson Reuters/West 2012).

49 Paul Stephen Dempsey, SPACE LAW Ch. 13 (Thomson Reuters/West 2012).

50 Paul Stephen Dempsey, SPACE LAW Ch. 22 (Thomson Reuters/West 2012).

51 Paul Stephen Dempsey, SPACE LAW Ch. 28 (Thomson Reuters/West 2012).

52 Paul Stephen Dempsey, SPACE LAW Ch. 30 (Thomson Reuters/West 2012).

53 Paul Stephen Dempsey, SPACE LAW Ch. 32 (Thomson Reuters/West 2012).



with international obligations; it may not impair national security; and the license may include conditions permitting inspection by the regulator.<sup>54</sup>

## **VI Operational Restrictions**

In order to reduce the likelihood of personal, property or environmental damage, a number of States impose operational restrictions on the launch of space objects. For example:

- In Australia, no launch is allowed that may create a hazard to aircraft, person or property; no launch is permitted into a prohibited area or restricted area; no launch is allowed higher than 400 feet in controlled airspace except in an approved area or in accordance with air traffic control clearance; and no launch is permitted within three nautical miles of an aerodrome.<sup>55</sup>
- In, Hong Kong no contamination of space is permitted, nor is interference with others;
- and the disposal of payload on termination of activities is required.<sup>56</sup>
- In Ireland, launches are prohibited if there is a collision hazard, in controlled air space, near an aerodrome, or at night into clouds.<sup>57</sup>

## **VII License Suspension & Revocation**

Many States have also imposed various enforcement mechanisms in their national space legislation. License suspension or revocation is an important regulatory means to ensure compliance. For example:

- In Australia, a licensee may have its license suspended or revoked if it contravenes a license condition, endangers national security, or violates foreign policy or international obligations.<sup>58</sup>
- In Belgium, a license may be suspended or revoked for failure to respect conditions imposed upon the license, or an infringement of law, of public order, or the safety of people or property.<sup>59</sup>
- In Korea, such action may be taken based on licensee incompetence, bankruptcy or violation of legislation, delaying a launch for more than a year

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54 These statutes are set forth in Paul Stephen Dempsey, *SPACE LAW* (Thomson Reuters/West 2012).

55 Paul Stephen Dempsey, *SPACE LAW* Ch. 11 (Thomson Reuters/West 2012).

56 Paul Stephen Dempsey, *SPACE LAW* Ch. 20 (Thomson Reuters/West 2012).

57 These statutes are set forth in Paul Stephen Dempsey, *SPACE LAW* (Thomson Reuters/West 2012).

58 Paul Stephen Dempsey, *SPACE LAW* Ch. 11 (Thomson Reuters/West 2012).

59 Paul Stephen Dempsey, *SPACE LAW* Ch. 12 (Thomson Reuters/West 2012).

without cause, obtaining a license by false means, engaging in threats to national security or abnormalities in safety.<sup>60</sup>

- In Russia, a failure to comply with instructions or orders, the discovery of false data, the dissolution of legal entity, or a violation of license conditions may result in suspension or revocation.<sup>61</sup>
- South Africa may amend, suspend or revoke a license if any condition was violated, or the operations pose an unacceptable safety risk.<sup>62</sup>
- In Sweden, the license may be withdrawn if conditions disregarded; imprisonment of up to one year may be imposed.<sup>63</sup>
- In the United Kingdom, a license may be suspended or revoked if a condition imposed thereon is not complied with, or such action is required for public health, or national security, or in order to comply with international obligations.<sup>64</sup>

### VIII Liability

A number of State national space laws include provisions for liability. For example:

- In Australia, liability is imposed upon a responsible property to pay compensation for damage caused to third party by the space object; however, no liability is allowed where the claimant has engaged in gross negligence or intent to cause damage; the statute of limitations is one year; if the government of Australia is liable, the party must pay indemnify the State for its liability; but if the launch or return of the space object was under a permit or certificate, indemnification is limited to the insured amount.<sup>65</sup>
- In Belgium, if the State is liable, it has the right to file counterclaim against operator; damage to Belgian citizens is assessed by three experts.<sup>66</sup>
- In Italy, a citizen harmed may receive compensation from the State, even when the State has not received compensation under the Liability Convention; the statute of limitations is five years.<sup>67</sup>
- In Japan, JAXA assumes entire liability; if the damage caused by willful misconduct of parties related to the launch, it may seek compensation therefrom.<sup>68</sup>

60 Paul Stephen Dempsey, SPACE LAW Ch. 25 (Thomson Reuters/West 2012).

61 Paul Stephen Dempsey, SPACE LAW Ch. 29 (Thomson Reuters/West 2012).

62 Paul Stephen Dempsey, SPACE LAW Ch. 30 (Thomson Reuters/West 2012).

63 Paul Stephen Dempsey, SPACE LAW Ch. 32 (Thomson Reuters/West 2012).

64 Paul Stephen Dempsey, SPACE LAW Ch. 34 (Thomson Reuters/West 2012).

65 Paul Stephen Dempsey, SPACE LAW Ch. 11 (Thomson Reuters/West 2012).

66 Paul Stephen Dempsey, SPACE LAW Ch. 12 (Thomson Reuters/West 2012).

67 Paul Stephen Dempsey, SPACE LAW Ch. 23 (Thomson Reuters/West 2012).

68 Paul Stephen Dempsey, SPACE LAW Ch. 24 (Thomson Reuters/West 2012).

- In Korea, the person who launches is liable for damages it causes.<sup>69</sup>
- The Russian Federation guarantees full compensation for personal and property damage, but no fault for damage in territory or outside the jurisdiction of a State; fault liability exists for any other place (such as outer space).<sup>70</sup>
- In South Africa, the licensee for is liable for the damages it causes.
- In the United Kingdom, one must indemnify the UK government against any claims for damage or loss.<sup>71</sup>

## **IX Insurance**

A number of States impose insurance requirements upon those who engage in space activities. For example:

Australia requires insurance in the amount of the maximum probable loss; insurance is intended to indemnify Australia for potential liability under the Liability Convention.<sup>72</sup>

Hong Kong requires insurance against liability Incurred for damage or loss suffered by third parties.<sup>73</sup>

In Korea, a licensee must insure against liability in amount capable of compensating for damages; the minimum amount is set by Ministry of Science and Technology.<sup>74</sup>

Both the Russian Federation and Ukraine require insurance coverage in amount set by legislation.<sup>75</sup>

Other States, including Japan and South Africa, also require insurance.<sup>76</sup>

## **X Conclusion**

As the global economy grows, so too will commercial activities in space. As is the case with multinational corporations in other trade sectors, the ability of any individual nation to regulate them is circumscribed. Moreover, a fragmented and unharmonious patchwork of national laws governing such issues

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69 Paul Stephen Dempsey, SPACE LAW Ch. 24 (Thomson Reuters/West 2012).

70 Paul Stephen Dempsey, SPACE LAW Ch. 29 (Thomson Reuters/West 2012).

71 These statutes are set forth in Paul Stephen Dempsey, SPACE LAW (Thomson Reuters/West 2012).

72 Paul Stephen Dempsey, SPACE LAW Ch. 11 (Thomson Reuters/West 2012).

73 Paul Stephen Dempsey, SPACE LAW Ch. 20 (Thomson Reuters/West 2012).

74 Paul Stephen Dempsey, SPACE LAW Ch. 25 (Thomson Reuters/West 2012).

75 Paul Stephen Dempsey, SPACE LAW Ch. 29, 33 (Thomson Reuters/West 2012).

76 These statutes are set forth in Paul Stephen Dempsey, SPACE LAW (Thomson Reuters/West 2012). See also, UN COPUOUS, Legal Subcomm. 14th Sess. A/AC.105/C.2'L224 (April. 2001).

as safety, security, environmental harm, and liability will impede the ability of space commerce to reach its full potential. But since there has been little enthusiasm in the world community for the promulgation of multilateral Space Law conventions since the failed 1979 Moon Agreement, it appears that States have little option but to promulgate their own domestic legislation to protect themselves and their citizens from liability and harm.

States are well advised to establish regulatory institutions to regulate space activities in a way that protects their citizens and their land from damage or injury, to protect their environment, to ensure safety, and to cover the costs of catastrophic loss when it occurs. National space laws are an important means toward achieving those public policies.