

## Matching Detail with Practice: The Essential Elements of National Space Legislation

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### 1. Introduction

One of the most important recent developments in the legal regulation of outer space has been the promulgation of national space legislation by an increasing number of States. This has been despite, or perhaps more likely because the international treaties that form the basis of the law of outer space were drafted from a State-orientated viewpoint.

Although it was contemplated by the drafters of these treaties that national space activities might also be undertaken by non-governmental entities, from the outset the responsibility for such activities was imposed, from an international law perspective, on States. Despite the fact that the range of space activities and the number and type of participants in these activities has grown exponentially since the time that these treaties were finalised, this still remains the position today.

As has been discussed by other speakers at this symposium, the changing nature of space activities, coupled with the increasing array of private participants involved, are among the several important reasons for this development of national space legislation. This paper seeks to set out at least some of the essential elements that one might expect to find in (most) such domestic law. Relevant examples from the Australian national space legislation<sup>2</sup> are referred to, in order to provide practical illustrations of these elements.

### 2. Essential Elements of (most) National Space Legislation

Whilst it is clear that the precise terms of any domestic law fall to be determined by issues of sovereignty and the internal constitutional and administrative requirements of the relevant State – not to mention, of course, its peculiar economic, political, developmental, societal and cultural situation – there are a number of elements that *ceteris paribus* would typically form a basis for most national legislation dealing with activities in outer space.

Many of these elements stem from the terms of the international treaties themselves. As a party to an international (space) treaty, States are bound by the fundamental principle of *pacta sunt servanda* – involving the obligation to comply with these treaty obligations in good faith. Thus, to incorporate these international obligations into a State's domestic space law is simply a manifestation of this fundamental principle.

Some of these elements are set out below:

#### a) The Incorporation of International Obligations into National Law

As just noted, a fundamental reason to enact national space law is to facilitate the formal incorporation of various aspects of the international space treaties into the domestic legal regime of a State. This is particularly the case in those States where implementing

legislation is expressly required, under its constitutional legal system, in order to transform *international* obligations into *national* ones. For example, one of the express objects of the Australian Space Activities Act is:<sup>3</sup>

to implement certain of Australia's obligations under the United Nations Space Treaties

It should be noted, however, that the terms of the implementing legislation – the national space law – will determine precisely how, to what extent and when those international obligations are to form part of the domestic regulatory system. This remains the sovereign prerogative of the State itself – note, for example, the use of the words *certain...obligations* in the Space Activities Act.

Moreover, the incorporation of these international obligations and requirements into the framework of domestic law will need to be done carefully, so as not to give rise to inconsistencies with existing national laws – which most States would already have in place - relating to, for example, broadcasting, media and telecommunications.

#### b) An Interpretation of 'National Activities'

States bear 'international responsibility for national activities in outer space' under article VI of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty).<sup>4</sup> There is, however, no precise clarification provided in the international space treaties as to what constitutes a 'national activity'. In this regard, the terms of the domestic space laws of a particular State will clarify the scope of activities to which it refers

– in essence, representing an interpretation by the drafters of that legislation of what they regard to be 'national activities in outer space', at least for the purposes of that domestic law.

Most domestic laws provide for national activities to be determined on the basis of both territorial and nationality principles (akin to general international law principles relating to State jurisdiction). For example, the Space Activities Act provides that certain space activities carried out in Australia, or by an Australian national outside Australia, are subject to regulation under the legislation and require an appropriate approval under the licensing system it establishes (see further below).

In this way, such national laws often have an extraterritorial effect, an issue that must be taken into account by lawyers when structuring and implementing commercial space activities involving entities with different nationalities.

#### c) Restrictions on Certain Types of Weapons

Article IV of the Outer Space Treaty imposes certain restrictions in relation to 'objects carrying nuclear weapons or any other kinds of weapons of mass destruction'. It has been noted by many commentators that these provisions do not constitute a ban on *all* types of weapons.<sup>5</sup> As a result, there have been more recent initiatives by leading space powers – including the draft Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force Against Outer Space Objects (PPWT)<sup>6</sup> - and calls by the United Nations General Assembly,<sup>7</sup> directed towards such an end.

Nevertheless, one would expect to see included in domestic space legislation a requirement that any non-governmental entity engaged in a space activity verify (perhaps even under oath) that, in the case of a launching activity, there is no nuclear weapon or weapon of mass destruction involved in any way with the particular space object and space activity. For example, Regulation 4.01 of the Australian Space Activities Regulations 2001 (Space Regulations) – which expand on the general provisions of the Space Activities Act – stipulates that one of the prerequisites before an overseas launch certificate (authorizing an Australian national to launch from overseas) can be granted is that:<sup>8</sup>

[n]o part of the space object or objects concerned, in which the person has an ownership interest, must be or contain a nuclear weapon or a weapon of mass destruction of any other kind.

Indeed, the Space Regulations go on to require that, as part of the application procedure for such a certificate, a statutory declaration (made under oath) must be provided with the application verifying that this is the case.<sup>9</sup> Further, the Space Regulations also provide that if any part of the space object to be launched in which the applicant has an ownership interest contains any fissionable material, the relevant Minister's written approval must be presented.<sup>10</sup>

#### d) Establishment of a Licensing Regime for Non-Governmental Entities

Article VI of the Outer Space Treaty requires 'the appropriate State' to authorize and continually supervise national activities in outer space undertaken by non-governmental entities. There is some conjecture as to

how, in practice, the need for continuing supervision might be undertaken in circumstances where the relevant space activity is a cooperative venture between a number of States where one State has overall control and management of the activity on a continuing basis. No doubt, however, internal arrangements between the cooperating States would be put into place to allow for each State to, in some way, exercise a degree of supervision, at least in relation to those aspects of the activity (and over its nationals who may be involved in its ongoing operation) in which it has a specific interest.

The obligation to 'authorize' the activity is, however, more straightforward. Under most domestic legal systems, whenever a person wishes to engage in a specific activity that may require certain restrictions or involve issues of sensitivity – for example, opening a casino or a pub – he/she would be required to apply for a licence to engage in that activity. So it is with space activities. To satisfy the authorization obligation specified in article VI of the Outer Space Treaty, States would typically, under the terms of their domestic legal regimes, establish a licensing system for those of its nationals who propose to undertake space activities.

This can be through the creation of a comprehensive 'one size fits all' licence regime or, more likely, via the establishment of different forms of licence, depending upon the particular space activity for which authorization is being sought. The Space Activities Act creates a number of different licences to deal with specific space (launch-related) activities as follows:

i) Space Licence – required to 'operate a launch facility in Australia, or do

anything directly connected with operating a launch facility in Australia, using a particular kind of launch vehicle' or to use 'particular flight paths';<sup>11</sup>

ii) Launch Permit – required to launch 'a particular space object' or 'a particular series of launches of space objects that ... having regard to the nature of any payloads to be carried, may appropriately be authorised by a single launch permit from a launch facility located in Australia'.<sup>12</sup> The permit may also 'authorise particular space objects to be returned, in connection with the launch or launches, to a specified place or area in Australia';<sup>13</sup>

iii) Overseas Launch Certificate – required for an Australian national to launch 'a space object ... from a launch facility located outside Australia';<sup>14</sup>

iv) Authorization of Return – required for the return to a place anywhere in Australia of a space object that was not launched from a launch facility located within Australia;<sup>15</sup>

v) The legislation also provides for the possibility of an Exemption Certificate in relation to various space activities, to be issued in the circumstances set out in the Space Regulations, which could, for example, be in a situation requiring an emergency landing.<sup>16</sup>

An obvious point – but one that, for the sake of clarity should also be expressed in the national space law - is that the Government is not required to apply for a licence in relation to a space activity that it itself is undertaking. As an example, the Space Activities Act provides that:<sup>17</sup>

This Division does not apply to:

(a) the Commonwealth; or

(b) a person acting as an employee or agent of the Commonwealth or as a member of the Defence Force.

Example: The Commonwealth and a private company are to carry out a launch as joint venturers. The Commonwealth would not need a space licence or launch permit etc. to do so, but the private company would (unless the company were acting as an agent of the Commonwealth, in which case it too would be exempt from this Division).

#### e) Creation of (Criminal) Offences

It follows from the establishment of a mandatory licensing regime that, in the (admittedly unlikely) event that a non-governmental entity conducts a space activity that falls within the ambit of the national legislation without the requisite licence(s), that would constitute an offence under that legislation, possibly of a criminal nature. In addition, a failure to comply with the various conditions of a granted licence would also constitute an offence. Clearly, without such provisions, the establishment of the licence regime would be ineffective.

Under the Space Activities Act, both criminal and civil offences are created. For example, a person who launches a space object from a launch facility in Australia without a launch permit (or exemption certificate) commits an offence punishable as follows:<sup>18</sup>

(e) in the case of a body corporate - a fine not exceeding 100,000 penalty units; or

(f) in the case of an individual - imprisonment for a term not exceeding 10 years, or a fine not exceeding 600 penalty units, or both.

In addition to this, the legislation creates a series of 'civil penalty provisions', the contravention of which does not constitute an offence, but may

result in a penalty calculated as follows:<sup>19</sup>

(a) in the case of a body corporate - 5,000 penalty units; or

(b) in the case of an individual - 500 penalty units.

#### f) Establishment of an Appropriate Government Body

The creation of a licence regime brings with it the need to establish (if no such body already exists) an appropriately mandated Government agency with the responsibility to undertake such functions as the following;

i) liaise with, and be the point of contact for any non-governmental entity that might consider undertaking a relevant space activity;

ii) accept any applications under the legislation;

iii) assess such applications;

iv) make decisions and issue the relevant licences where warranted;

v) undertake any other matters of a supervisory nature as are appropriate under the relevant legislation; and

vi) advise the relevant Minister on all matters relating to space activities.

In the case of Australia, the Government has established the Space Licensing and Safety Office (SLASO) to '[a]ssist the development of Australian space activities through the efficient administration' of the Space Activities Act and the Space Regulations.<sup>20</sup> Under the regime that has been established, SLASO must ensure that space activities do not jeopardise public safety, property, the environment and Australia's national

security, foreign policy or international obligations; that there is adequate third-party insurance (or other appropriate financial comfort) in place to cover proposed and actual space activities; and that any accidents that may occur are investigated.<sup>21</sup>

The Australian Government initially sought to establish SLASO on a 'cost-recovery' basis, anticipating that, as launch sites in Australia became commercially viable, its operating costs would be recovered from launch operators.<sup>22</sup> This expectation was predicated on the underlying assumption that Australia would become the site of a significant commercial launch service industry. In reality, this has not eventuated for a variety of reasons,<sup>23</sup> and is unlikely to do so.<sup>24</sup>

#### g) Clarification of the 'Geographical' Ambit of the Legislation (or – 'What is Space'???)

From the perspective of administrative certainty, one might expect that national space legislation may clarify the precise activities that fall within the relevant scope of activities for which a licence should be sought. Although this has not proven, thus far at least, to be a major cause for concern in relation to those domestic space laws that do not define the geographical (ie altitude above the Earth) scope of the licensing regime, it might be that, in certain circumstances, a lack of a precise definition could lead to uncertainties as to which (launch) activities are regulated.

To address the issue for the purposes of the Space Activities Act, the legislation incorporates into the definitions of a 'launch', a 'launch vehicle', a 'return' and a 'space object' a reference to 'the distance of 100

[kilometres] above mean sea level'.<sup>25</sup> At the time of introducing this clearly defined point, the relevant Minister for explained that it was necessary to:<sup>26</sup>

provide certainty to industry about the point where industry players become subject to the provisions [of the legislation since] the issue that there is uncertainty as to where "outer space" begins given that there is no definitive explanation of the term in either Australian or international law.

This was the first example of domestic space-related law that referred to a specific 'demarcation point' for the purposes of regulating national space activities. It has not generally been followed in the domestic space law of other countries – Australia was just the 6<sup>th</sup> country to pass national space law<sup>27</sup> - but a recent and even more significant development in this regard was the inclusion of an express definition of 'outer space' in the PPWT referred to above.<sup>28</sup>

Should developments such as these eventually be extensively adopted and followed elsewhere, it may represent evidence tending towards the eventual creation of a new customary international rule in the future.<sup>29</sup> This may become very important in relation, for example, to the regulation of commercial sub-orbital space tourism activities, which, at least under current technological constraints, are capable of taking paying passengers to an altitude slightly in excess of 100 kilometres above the Earth.<sup>30</sup>

To accommodate this demarcation for the purposes of the legislation, a consequential change is that the definition of a 'space object' in the Space Activities Act differs from that which appears in the United Nations space treaties.<sup>31</sup> The Australian legislation defines a space object as follows:<sup>32</sup>

"space object" means a thing consisting of:

(a) a launch vehicle; and

(b) a payload (if any) that the launch vehicle is to carry into or back from an area beyond the distance of 100 [kilometres] above mean sea level;

or any part of such a thing, even if:

(c) the part is to go only some of the way towards or back from an area beyond the distance of 100 [kilometres] above mean sea level; or

(d) the part results from the separation of a payload or payloads from a launch vehicle after launch.

h) Establishment of a National Register and a Mechanism to furnish Information for the United Nations Register

Under the terms of the Convention on Registration of Objects Launched into Outer Space (Registration Convention),<sup>33</sup> the State of registry<sup>34</sup> is required both to maintain a national register and to furnish certain information about the launch of space objects to the Secretary-General of the United Nations, who maintains an 'international' register.<sup>35</sup> National space legislation should thus include provision for the establishment of a national register (assuming one was not already in existence) and also for the formalisation of a mechanism by which the requisite information is transmitted to the United Nations.

Part 5 of the Space Activities Act provides for the establishment of a Register of Space Objects to be maintained by the relevant Minister. However, perhaps as an oversight, there is no provision outlining a process by which the relevant information to be sent to the Secretary-General of the United Nations.

Presumably this task falls within the responsibility of SLASO.

### i) A Requirement of 'Direct Financial Responsibility' for Third Party Claims

One of the most important elements that should be included in domestic space legislation stems from the general international liability provisions found in the Outer Space Treaty<sup>36</sup> and the more detailed liability regime specified in the Liability Convention, which imposes liability on a 'launching State' for certain damage caused by a space object.<sup>37</sup> In the absence of specific indemnities in relation to claims by third parties, or where the various exceptions and exonerations contained in the Liability Convention do not apply, a launching State will bear this international obligation of liability.<sup>38</sup>

As a consequence, the enactment of national laws enables space-faring States to formalise domestic legal processes that would allow them to pass on financial responsibility to, and recover from their national non-governmental entities the amount of the damages for which the State may be liable at the international level. Of course, this does not remove the international obligation of liability of a launching State under the Liability Convention, but does enable it to put in place a domestic mechanism by which it can transfer the financial 'risk' associated with this potential international liability for third party claims.

Although there are no such limitations included in the Liability Convention, in order to meet the concerns of commercial enterprises considering a space activity, it is open to the relevant State to limit this 'indemnity' to a

specific maximum amount and/or for a specific time period.

The Space Activities Act is quite specific in this regard. One of the express objects of the legislation is:<sup>39</sup>

to provide for the payment of adequate compensation for damage caused to persons or property as a result of space activities regulated by [the legislation]

The legislation establishes a liability regime with this goal in mind. It provides for either absolute liability<sup>40</sup> or fault liability<sup>41</sup> on the part of the launch operator in circumstances largely mirroring the terms of the articles II and III of the Liability Convention.<sup>42</sup> This domestic regime is applicable in circumstances where Australia is a launching State, but only during the 'liability period', which is defined as follows:<sup>43</sup>

(a) for the launch of a space object - the period of 30 days beginning when the launch takes place, or such other period as is specified in the regulations; and

(b) for the return of a space object - the period beginning when the relevant re-entry manoeuvre is begun and ending when the object has come to rest on Earth, or such other period as is specified in the regulations.

Unless there has been a breach of the relevant licence, or the damage has been caused by an operator who has failed to obtain a required licence (in which case there is unlimited liability), the legislation provides for a maximum amount of liability equal either to the 'Maximum Probable Loss' (MPL), initially set as a statutory ceiling of A\$750 million. At the time of introducing the legislation, this was considered as important, in order not to impose uncommercial and/or uncompetitive obligations upon launch operators.<sup>44</sup>

Although it would be relatively straightforward to simply require commercial entities in all circumstances to take out appropriate commercial insurance against third party claims for the extent of the specified (maximum) damage, this would often be impractical (given the relative lack of depth of the international space insurance market) and unreasonably costly. As a result, it would be preferable for the legislation to provide an element of flexibility as to how a non-governmental entity might satisfy this 'indemnity' goal, whilst still remaining commercial in its terms and not representing an unreasonable barrier to entry for commercial operators.

With this in mind, the Space Activities Act enables commercial entities applying for a licence to demonstrate 'direct financial responsibility' as an alternative to taking out insurance (which, as noted, it may in any event find impossible). Article 47 of the legislation provides that the holder of a specific licence satisfies the 'insurance/financial requirements' for a launch or return if:<sup>45</sup>

a) throughout the liability period for the launch or return, the insurance requirements in section 48 are satisfied; or

(b) the holder has, in accordance with the regulations, shown direct financial responsibility for the launch or return for an amount not less than the amount that would otherwise have been applicable under subsection 48(3) for the launch or return.

#### j) Other Elements

The limitations on the length of this paper do not allow for discussion in relation to other (possible) elements that may form part of domestic space law. Once again, these will depend on the specific requirements of the relevant State and the particular space

activities being envisaged, and may include such matters as:

i) Restrictions relating to the export of space-related technology;

ii) Issues relating to safety, investigations and accidents;

iii) Provisions facilitating the implementation of specific inter-Governmental cooperation agreements;

iv) Obligations relating to particular concerns of national security.

#### **Concluding Remarks**

The evolution of national space law has escalated quite dramatically over the past decade, but remains an ongoing process, since there are still a number of space-faring States without any meaningful domestic regulatory regime. However, this 'shortfall' of domestic law is likely to recede over time and there is no doubt that the development of a significant body of domestic legislation represents one of the real 'growth areas' of space law in the future.

Moreover, as the method and mode of space activities becomes more complex, as the capital required for these activities leads to ever-increasing 'private' participation, as more States (and their nationals) become involved in national activities in outer space, and as humankind develops an even broader understanding of the potential 'benefits' to be derived from the peaceful exploration and use of outer space, there will be a greater need for additional clearly defined legal regulation.

Not only does this involve respect for the universally accepted international norms already in existence, but it also



calls for appropriate and practical domestic regulatory provisions. It will be increasingly necessary that these international and national legal rules complement each other and encourage widespread acceptance and implementation of standardized principles to deal with the challenges presented by the seemingly limitless desire of humankind to engage in new types of activities in outer space.

Although the already existing and proposed national laws do and will differ in accordance with the specific requirements and goals for each particular State, it is important that careful consideration be taken of the elements outlined in this paper when drafting such laws, so as to ensure that there is a general level of uniformity in the overall approach taken towards the ongoing use and exploration of outer.

This 'legalization' of space activities is a logical and commercial necessity, given the burgeoning space technology industry and the increasing spectrum of space activities. A broader and more relevant body of national regulation for space activities will provide increased certainty for all concerned with the peaceful uses of outer space. This in turn will serve to encourage participation by a larger number of interested parties in both the private and public spheres.

In this way, the development of domestic legal space rules, complementing as they do the broader international principles accepted by the international community, will allow humankind to continue its quest to (quite literally) broaden the frontiers of our universe.

Of course, this assumes that the terms of the domestic laws (and international principles) that are enacted provide the

appropriate balance between a proper and accountable regulatory regime and the need to allow for flexibility and innovation in the uses of outer space, particularly as the advances in technology allow for this increasing range of laudable space activities.

Overall, the precise terms of any domestic legislation will also be dictated by (real and perceived) national interest and security concerns. It is to be hoped that these will, in most cases at least, be reconciled with the broader issues of international cooperation and collaboration so as to enable the participants to maximise the benefits to be gained from space activities in the interests of all humankind.

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<sup>2</sup> Space Activities Act 1998 (Cth) (Space Activities Act).

<sup>3</sup> Space Activities Act, section 3(c).

<sup>4</sup> Open for signature 27 January 1967, in force 10 October 1967, 610 UNTS 205.

<sup>5</sup> See, for example, Jackson Maogoto and Steven Freeland, 'Space Weaponization and the United Nations Charter: A Thick Legal Fog or a Receding Mist?', (2007) 41:4 *The International Lawyer* 1091-1119.

<sup>6</sup> For an analysis of the PPWT, see Steven Freeland, 'The 2008 Russia / China Proposal for a Treaty to Ban Weapons in Space: A Missed Opportunity or an Opening Gambit?', (2008) 51 *Proceedings of the Colloquium on the Law of Outer Space*, 261-271.

<sup>7</sup> Refer to the numerous United Nations General Assembly Resolutions, beginning with Resolution 36/97C, 9 December 1981 which

have been directed towards the 'Prevention of an arms race in outer space.' The political dimensions of this issue in the early 1980s were indicated by a split, along ideological grounds, on the main thrust of these resolutions: see Nandasiri Jasentuliyana, *International Space Law and the United Nations*, 1999, Kluwer Law, The Netherlands, 82.

<sup>8</sup> Space Regulations, Regulation 4.01 (2).

<sup>9</sup> Space Regulations, Regulation 4.03 (4) (e).

<sup>10</sup> Space Regulations, Regulation 4.03 (4) (f).

<sup>11</sup> Space Activities Act, sections 15 and 18.

<sup>12</sup> Space Activities Act, sections 11 and 26 (1).

<sup>13</sup> Space Activities Act, section 26 (2).

<sup>14</sup> Space Activities Act, section 12 (a).

<sup>15</sup> Space Activities Act, sections 14 (a) and (b).

<sup>16</sup> Space Activities Act, section 46.

<sup>17</sup> Space Activities Act, section 16.

<sup>18</sup> Space Activities Act, sections 11 (e) and (f). See also sections 12 (d) and (e) in relation to an overseas launch certificate, sections 13 (f) and (g) in relation to a launch permit, and sections 14 (d) and (e) in relation to authorisation for return to Australia of an overseas-launched space object. By contrast, operating a launch facility in Australia without a space licence does not constitute an offence under the legislation, but does give rise to a civil penalty (section 15). The Crimes Act 1914 (Cth) specifies the current value of a penalty unit as is applicable under the Space Activities Act.

<sup>19</sup> Space Activities Act, sections 81 (3) (a) and (b). See generally sections 80-83.

<sup>20</sup> Space Licensing and Safety Office Fact Sheet, <<http://www.innovation.gov.au/Industry/Space/Pages/SpaceLicensingandSafetyOfficeFactSheet.aspx>> (accessed 15 May 2010).

<sup>21</sup> Under the terms of the Space Activities Act, there is a differentiation between an 'accident' and an 'incident'. Under the legislation, a 'suitably experienced and qualified investigator' must be appointed in the case of an accident, but need not be in the case of an incident (sections 85, 86 and 88).

<sup>22</sup> Australian Ministry for Industry, Science and Resources, 'Explanatory Memorandum to the Space Activities Bill 1998', December 1998 page 8, <[www.aph.gov.au](http://www.aph.gov.au)> (accessed 21 August 2004).

<sup>23</sup> For a description of the travails of the proposed Australian launch service industry, see Steven Freeland, 'When Laws are Not Enough – the Stalled Development of an Australian Space Launch Industry', (2004) 8 *University of Western Sydney Law Journal* 79-95.

<sup>24</sup> In November 2008, an Australian Senate Standing Committee on Economics handed down its report entitled 'Lost in Space? Setting a new direction for Australia's space science and industry sector', in which it concluded (at paragraph 4.16) that:

'While not opposed in principle to Australia regaining its role as a launch site if a commercial venture wishes to do so (whether for satellites or tourists), the committee does not see this as likely, nor as something the government should be supporting with taxpayers' money'.

<sup>25</sup> Space Activities Act, section 8.

<sup>26</sup> Australian Ministry for Industry, Science and Resources, 'Explanatory Memorandum to the Space Activities Amendment Bill 2002', February 2002 page 4, <[www.aph.gov.au](http://www.aph.gov.au)> (accessed 23 May 2005).

<sup>27</sup> The previous countries were the United States, Sweden, the United Kingdom, the Russian Federation and South Africa: see Frans G von der Dunk, 'Launching from "Down Under": The New Australian Space Activities Act of 1998', (2000) 43 *Proceedings of the Colloquium on the Law of Outer Space* 132, 139.

<sup>28</sup> Article I (a) of the PPWT defines outer space as the:

'space beyond the elevation of approximately 100 km above ocean level of the Earth'.

<sup>29</sup> See *North Sea Continental Shelf Cases (Germany v Denmark; Germany v The Netherlands)* [1969] ICJ Reports 3. It has long been accepted that customary international law represents one of the 'sources' of space law: see Vladlen S Vereshchetin and Gennady M Danilenko, 'Custom as a Source of International Law of Outer Space', (1985) 13:1 *Journal of Space Law* 22.

<sup>30</sup> In September and October 2004, the manned space vehicle SpaceShipOne twice reached an altitude of just over 100 kilometres and safely returned to Earth to claim the US\$10 million Ansari X Prize, a space competition modelled on contests at the time of early aviation: see Steven Freeland, 'Up, Up and .... Back: The Emergence of Space Tourism and its Impact on the International Law of Outer Space', (2005) 6(1) *Chicago Journal of International Law* 1-22. The most high-profile private industry entity currently seeking to develop a commercial space tourism business, Virgin Galactic, is basing its spacecraft on the same technology utilised by SpaceShipOne. For an analysis of recent developments in relation to the evolution of a space tourism 'industry', see Tanja Masson-Zwaan and Steven Freeland, 'Between Heaven and Earth: The Legal

Challenges of Human Space Travel', (2010) 66:11/12 *Acta Astronautica* 1597-1607.

<sup>31</sup> Article 1 (d) of the Convention on International Liability For Damage Caused by Space Objects (Liability Convention), open for signature 29 March 1972, in force 1 September 1972, 961 UNTS 187, defines a space object as follows:

'The term "space object" includes component parts of the space object as well as its launch vehicle and parts thereof.'

<sup>32</sup> Space Activities Act, section 8.

<sup>33</sup> Open for signature 14 January 1975, in force 15 September 1976, 1023 UNTS 15.

<sup>34</sup> Article I (c) of the Registration Convention defines the 'State of Registry' as:

'a launching State on whose registry a space object is carried in accordance with article II'.

<sup>35</sup> Registration Convention, articles 2, 3 and 4.

<sup>36</sup> Article VII of the Outer Space Treaty prescribes the general terms giving rise to international liability for damage caused by an object launched into outer space. The scope of international liability is then elaborated in the subsequently concluded Liability Convention.

<sup>37</sup> Article 1 (c) of the Liability Convention defines a launching State as follows:

'(i) A State which launches or procures the launching of a space object;

(ii) A State from whose territory or facility a space object is launched'.

<sup>38</sup> For a detailed discussion of the terms of the Liability Convention, see Steven Freeland, 'There's a Satellite in my Backyard! – Mir and the Convention on International Liability For Damage Caused by Space Objects', (2001) 24:2 *University of New South Wales Law Journal* 462-484.

<sup>39</sup> Space Activities Act, section 3(b).

<sup>40</sup> Space Activities Act, section 67.

<sup>41</sup> Space Activities Act, section 68.

<sup>42</sup> Article II of the Liability Convention provides as follows:

'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.'

Article III of the Liability Convention provides as follows:

'In the event of damage being caused elsewhere than on the surface of the earth to a space object of one launching State or to persons or property on board such a space object by a space object of another launching State, the latter shall be liable only if the damage is due to its fault or the fault of persons for whom it is responsible.'

<sup>43</sup> Space Activities Act, section 8.

<sup>44</sup> Australian Ministry for Industry, Science and Resources, 'Explanatory Memorandum to the Space Activities Bill 1998', December 1998 page 9, <www.aph.gov.au> (accessed 21 August 2004).

<sup>45</sup> Space Activities Act, sections 47 (2) (a) and (b).