

THE AUSTRALIAN REGULATORY REGIME FOR SPACE LAUNCH ACTIVITIES: OUT TO LAUNCH?

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Introduction

The requirement for the authorization and continuing supervision of national activities in outer space undertaken by non-governmental entities, specified under the terms of 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)*,¹ has over time given rise to the promulgation of an increasing body of domestic law dealing specifically with space-related activities in various countries. This has also been driven by the international liability provisions in both the *Outer Space Treaty*² and the *Convention on International Liability For Damage Caused by Space Objects*,³ as space-faring countries seek to formalise domestic legal processes designed to allow them to pass on financial responsibility and recover from private entities the amount of the damages for which the country may be liable at the international level.

This development of national space law is therefore an ongoing process and there are still a significant number of space-faring countries without any meaningful domestic regulatory regime. However, this 'shortfall' of domestic law is likely to recede and there is no doubt that the body of domestic legislation represents one of the real 'growth areas' of space law in the future.

Clearly, as the method and mode of space activities become more complex, as the capital required for these activities leads to ever-increasing 'private' participation, as more countries (and their private corporations) 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 exploration and use of outer space, there will be a greater need for additional clearly defined legal regulation. Not only does this involve the establishment of universally accepted (at least among those countries with an interest in space) international norms, but it also calls for appropriate and practical domestic regulatory provisions.

The fact that this colloquium and a number before it have devoted an entire session – comprising papers from many countries – to 'New Developments in National Space Legislation' is a demonstration of the growing importance of domestic law in the overall regulation of space activities. At each IISL conference, we hear about how plans to introduce new and additional domestic space law in an increasing number of countries – The Netherlands, India, China for example – have been progressed. These provide not only for the domestic implementation of the more general obligations arising under the various space treaties, but also serve to establish national space agencies⁴ and regulate specific space activities.

These developments represent a very positive sign, not only for space lawyers (who will no doubt be involved in well-paid consultancies to assist Governments in the drafting of these laws) but also for the broader space community. It also reflects not just the practical result of a legal obligation – to authorize and supervise – arising out of the Outer Space Treaty. This ‘legalization’ of space activities is a logical and commercial necessity given the burgeoning space technology industry. Greater regulation of 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.

Of course, this assumes that the terms of the domestic laws that are produced 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 an increasing range of worthwhile space activities. The precise terms of any domestic legislation will, first and foremost, be dictated by (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 to maximise the benefits to be gained from space activities in the interests of all humankind.

This paper will briefly consider the regulatory regime that exists in Australia in the broader context of Australia’s Space Policy. The principal domestic space law – the *Space Activities Act 1998* (Cth) (*Space Activities Act*) – was introduced as an intended springboard into a lucrative launch industry. It establishes a quite sophisticated licence system to deal with various aspects of launches from, and return to facilities within Australia’s territory. Although of

course seeking to promote Australia’s interests, it also was designed to extend international cooperation in space activities. However, the optimism that came with the introduction of this legislation – at least in terms of the creation of the launch industry on a significant commercial scale – has yet to materialise. Indeed, as this paper concludes, the focus of the Australian Government’s Space Engagement Policy has more recently shifted markedly away from its overt support of space launch activities to a more ‘pragmatic’ and politically expedient view of its role in outer space activities, based almost entirely on national security concerns.

In the end, at least for the present time, one is left with the impression that Australia has developed an interesting and useful ‘model’ licensing regime – which no doubt is being studied (along with the legislation of other countries) by drafters of future legislation elsewhere – without the real prospect that it will facilitate in a significant way the advancement of a commercial launch industry in the country for the foreseeable future. This is to be regretted, but the current Australian experience illustrates that many variables – of which investment capital and political support are no doubt among the most important – impact upon the development of commercially viable space activities.

Australia’s Early Involvement in Space Activities

Australia has long been involved in various aspects of space activities. Its technical expertise, geographic location and long and close (some would say too close) alliance with the United States has meant that it has played an important role in tracking and communications activities with all manner of space objects. As early as 1961, Australia had entered into bilateral arrangements with the United States regarding that country’s satellite program, through the *Exchange of Notes constituting*

*an Agreement between the Government of Australia and the Government of the United States of America for Cooperation in a Transit Navigational Satellite Program.*⁵ This and subsequent agreements with the United States led to the establishment of a number of important space tracking stations in Australia. As will be seen below, these continue to play an important role in the evolution of Australia's involvement in space activities.

It was also apparent quite early, as the space faring community looked for places from which to conduct launch activities, that Australia might represent a suitable place from which to launch space objects. Not only is this due to its highly suitable geographical features, but also because of the fact that vast areas of Australia are sparsely populated, thereby lessening the risk of human injury in the event that things go wrong. Moreover, Australia offers other 'infrastructural' advantages – including a stable political climate, technical expertise and a good communications system – which are necessary to allow for the successful development of a launch program.

Indeed the Australian Government entered into a number of early bilateral arrangements with countries that were attracted by the advantages presented for strategic launch activities from remote Australia. In the mid-1970s, Australia entered into an *Exchange of Notes constituting an Agreement between the Government of Australia and the Government of the Federal Republic of Germany concerning the Launching of a Skylark Vehicle and Payload at Woomera for Scientific Purposes.*⁶ This arrangement included an indemnity by the German Government in respect of loss or damage suffered by either the Australian or United Kingdom Governments,⁷ as well as any potential claims for liability against the Australian Government, except where Australia failed 'to exercise any of its

responsibilities' under the arrangement.⁸ A similar arrangement was entered into with Canada in 1976⁹ and there were several launch arrangements agreed with the United States.¹⁰

Nevertheless, it was not until the late 1990s that the Australian Government began to consider seriously the establishment of a significant commercial space launch industry in the country, culminating in the passing through Federal Parliament of the *Space Activities Act*, which came into force on 21 December 1998.

The *Space Activities Act 1998 (Cth)* – a brief overview

As the international commercial launch industry became more competitive and sophisticated, private consortia sought to explore the possibilities of undertaking commercial satellite launch projects from Australia. In April 1997, the American corporation Kistler Aerospace Corporation signed an Operations Agreement with the Australian Government, which provided a licensing framework to allow the company to develop and operate a commercial launch facility at Woomera. Trials were scheduled by its Australian subsidiary, Kistler Woomera Pty Ltd, to commence in early 1999, with a view to initiating a commercial launch service by the end of 1999.¹¹ This has not eventuated, though the Australian Government still describes the Kistler project as 'under development'. Another project (which has also not proceeded) was the proposal by United Launch Systems International to establish a commercial light launch service near Gladstone in Queensland, utilising Russian launch technology, which was anticipated to commence operations by 2001.

A third consortia, operating through the Australian company Asia Pacific Space Centre Pty Ltd (ASPC), had proposed the establishment of a launch facility, again using Russian launch technology, on the

Australian external territory (since 1958) of Christmas Island – which had previously been the site of a phosphate mining operation, then a Casino (both of which are no longer operating to any significant degree) and more recently a detention centre for asylum seekers¹² – some 1800 kilometres north-west of the mainland in the Indian Ocean. The ASPC project is still ongoing, though there are currently some considerable doubts as to the continuing financial health of the consortia.

In response to this largely private sector interest in the development of a launch industry in Australia, the Government enacted the *Space Activities Act*, thereby becoming on the sixth country to introduce specific domestic legislation directed towards space activities.¹³ Prior to this, there had been no existing Australian regulatory framework that directly applied to ‘national’ space activities, including launch activities from Australia. The Government described the principal object of the legislation in terms of ‘reflect[ing] in an Australian law, Australia’s obligations as a signatory to the key United Nations space treaties and provid[ing] a legally certain and predictable environment for the development and operation of Australia’s space launch facilities.’¹⁴

In keeping with this objective, the primary purposes of the legislation were stated as follows:¹⁵

‘(a) to establish a regulation regime for commercial space activities carried out either from Australia or by Australian nationals outside Australia;

(b) 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];

(c) to implement certain of Australia’s obligations under the UN Space Treaties; and

(d) to implement certain of Australia’s obligations under specified space cooperation agreements.’

The Government also established the Space Licensing and Safety Office (SLASO) to regulate space activities undertaken under the legislation.

As a general comment, the legislation has clearly ‘succeeded’ in respect of purposes (b)¹⁶ and (c)¹⁷ above, though with respect to purpose (a) and despite the broad title of the legislation, it is only concerned with civil space launch and return activities under the more general rubric of ‘commercial space activities’. Purpose (d) was added to the legislation under the *Space Activities Amendment (Bilateral Agreement) Act 2001* (Cth) to take into account the *Agreement between the Government of Australia and the Government of the Russian Federation on Cooperation in the Field of the Exploration and Use Of Outer Space for Peaceful Purposes*¹⁸ (discussed below).

Much has been written about the specific terms of the legislation and it is therefore not necessary to repeat in detail the express provisions of the document in this paper.¹⁹ However, it is probably useful to outline in general terms the licensing regime that has been established under the legislation in relation to launch activities. It probably represents the most complex launching regime in the world so far. The *Space Activities Act* creates a number of different licences to deal with specific space (launch-related) activities. These are:

1. 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’;²⁰
2. 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'.²¹ 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';²²

3. Overseas Launch Certificate – required for an Australian national to launch 'a space object ... from a launch facility located outside Australia';²³
4. 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.²⁴

The legislation also provides for the possibility of an Exemption Certificate in relation to these activities, to be issued in circumstances set out in the relevant Regulations, which could, for example, be issued in an emergency landing situation.²⁵

It should also be noted in passing that the *Space Activities Act* was also amended in 2002 by the *Space Activities Amendment Act 2002 (Cth)*, which sought to address the vexed question among space lawyers – where does space begin – by incorporating into the definition of a 'launch', a 'launch vehicle', a 'return' and a 'space object' for the purposes of the legislation a reference to 'the distance of 100 [kilometres] above mean sea level'.²⁶ This is, as far as this author is aware, the first example of domestic law that refers to a specific 'demarcation point' for the purposes of applying space-related regulation and, should it be eventually be extensively adopted and followed elsewhere, may represent evidence tending towards the

eventual creation of a new customary international rule in the future.²⁷

The (Still) Birth of Commercial Launch Industry

Buoyed by the apparent private sector interest in Australia as a commercial launch site and having established the domestic regulatory regime to authorise and supervise launch activities from (and to) Australia, the Australian Government embarked on a strategy designed to enable the country to enter the space launch market. As mentioned above, it entered into a bilateral Cooperation Agreement with Russia in May 2001, which came into force on 12 July 2004, replacing a more general agreement that had been entered into with the Soviet Union in December 1987.²⁸

Unlike the earlier agreement, the 2001 agreement specifically related to the development of launching activities. It specified areas of cooperation between Australia and Russia involving 'the launching of space apparatus'²⁹ and 'the conduct of commercial operations and outer space launches',³⁰ with a specific long term goal being 'the creation on the territory of Australia of an international cosmodrome for the launch of payloads into outer space using Russian launch vehicles'.³¹ A major aim in concluding this agreement was to pave the way for progress in the development of the launch facility project at Christmas Island. The agreement also dealt in some detail with issues of intellectual property, technology transfer and contained a cross-waiver provision for liability.³²

At the time of entering into the agreement with Russia, the Australian Government heralded the establishment of Australia as a 'significant player in the satellite launch industry'³³ and pledged US\$52 million (A\$100 million based on the then current exchange rate) towards the development of the A\$800 million Christmas Island facility. Moreover, the Government anticipated that

over the following ten years, Australia could reasonably expect to gain between 10-20% of the worldwide demand for satellite launches, generating approximately A\$2.5 billion of revenue to Australia.³⁴

Unfortunately, the initial euphoria following the passing of the *Space Activities Act* and the conclusion of the bilateral agreement with Russia has not (yet) translated into any significant progress towards a viable launch industry in Australia. There have been significant market rumours as to the financial viability of the Christmas Island project. In addition, the Indonesian Government has continued to raise its concerns that a faulty launch could cause damage and injury within its territory (Christmas Island is only 350 kilometres south-west of the island of Java).³⁵

These issues, coupled with the post September 11 geopolitical climate, have resulted in a change of focus by the Australian Government as to how it believes the country should engage in space activities. This new more 'pragmatic' approach is reflected both in the Government's policy paper – *Australian Government Space Engagement: Policy Framework and Overview*³⁶ - and its more recent decisions in relation to the application of its space technology and towards missile defence. Both of these developments are briefly discussed below. What is quite clear is, at least under the current circumstances, the establishment of a significant space launch industry does not represent a primary goal for the Australian Government.

A Revised 'Market-Driven' Approach to Space Engagement

Following a review by the Department of Industry, Tourism and Resources into Australia's space-related activities, the Government issued its revised space engagement policy in November 2003,

updating it again in July 2004. It provides a clear message to space lawyers and the broader space industry – there is no pressing necessity, and consequently no support for a centrally funded 'space office' or a 'dedicated space program' in Australia.³⁷ Instead, the focus of future engagement with space activities would be driven by those areas where Australia 'has competitive advantages'. In this respect, it is anticipated that much of Australia's participation in space activities will revolve around the provision of technological expertise and ground station tracking services, utilising several of those facilities established under the terms of bilateral arrangements, particularly with the United States.

Despite the promulgation of the *Space Activities Act* and the initial support provided for the Christmas Island project, it was clear that the Government would not provide any further tangible beneficial support to facilitate the emergence of a significant launch industry. According to its policy document, this did not preclude the development of private launch operations, but only if 'they are commercially viable and sustainable'.³⁸ The document does highlight the 'success' of the Hyshot Scramjet launch project, with the first launch having taken place from Woomera in July 2002, and indicates that the program may be extended.³⁹ However, apart from this, there are no positive indications regarding any other aspect of launch activities. Indeed, although the Christmas Island Spaceport project is mentioned, this is largely to publicise the Government's previously announced funding without any indication at all as to future Government initiatives. Under the heading of 'Emerging Issues and Opportunities' there is no reference at all to space launch services.⁴⁰

Of course this raises questions as to whether a private launch industry will be established in Australia in the foreseeable future. The experience in other launching

countries indicates the need for significant Government support, during the period in which it is still 'immature' and unable to be self-sufficient, if a viable space launch industry is to emerge.⁴¹ The view that has now been taken by the Australian Government is that 'self-sufficiency' is not necessarily a goal with respect to space activities.⁴² The previously stated aim to become a significant participant in the commercial space launch industry no longer prevails. The Government has instead determined that the Australian space industry is to develop 'on its merits' and without any particular preferential treatment. In this respect, the document equates the space industry with 'other high-technology areas' – aerospace, electronics, advanced manufacturing, systems and software engineering, defence industries – all of which will need to compete for Government support through generic funding programs.⁴³

The document makes no mention of the possibility of an Australian Space Agency being established. Various elements of the Australian space industry, such as the recently formed (April 2003) Australian Space Network (ASN),⁴⁴ have publicly reiterated the benefits of a national Space Agency. In the Asian region, countries such as Singapore, Thailand, Taiwan, China, Japan and India have established domestic Space Agencies, which have provided significant momentum and input into the ongoing development of the broader space activities in those countries. Despite the focus that the establishment of an agency would provide in Australia, the idea does not appear to have gained Governmental support, further inhibiting the evolution of space and space-related activities, including the development of a commercial space launch industry.

Overall, the approach taken by the current Australian Government to its engagement in space activities, at least as evidenced by its 2003/2004 policy paper, indicates an

about-face in relation to the development of a private launch industry. No longer is there a sense of 'urgency' about the need to promote Australia as an attractive and appropriate place for non-governmental entities to engage in launch activities. Of course the comprehensive regulatory framework put in place under the *Space Activities Act* does allow for the development of a launch industry. However the Government has determined that it will not make available any of the much-needed incentives to enable this to happen.

Rather, as well as concentrating on those areas where Australia has some technical expertise, the Government sees its engagement in space and space-related activities as an integral part of the country's national security, which is also inextricably linked to its established military and strategic international alliances, particularly with the United States. If anything, these concerns have increased following the events of 11 September 2001, the 2002 Bali bombings, which resulted in the deaths of 88 Australians (out of a total of over 200 deaths) and Australia's active involvement as part of the 'Coalition of the Willing' during the action in Iraq which began in March 2003. This focus is evidenced by recent actions referred to below. A consequence is that, at this stage and within this political context, the development of a commercial space launch industry is not perceived as representing a necessary element in Australia's broader strategy for space and space-related activities.

Engaging in Space as part of a Military and Strategic Alliance

Over the past few months, the Australian Government has decided to engage in a number of space-related activities in conjunction with its closest strategic partner, the United States. In January 2004, it announced that Australia would play an important role in President Bush's recently formulated plans to expand the United

States space program, through the involvement of the Tidbinbilla Deep Space Tracking Centre (near Canberra) as an important communications centre for proposed manned missions to Mars. At the time, Australian Deputy Prime Minister John Anderson stated that he hoped there was an ongoing role for Australia in the expanded American program.⁴⁵

In March 2004, Australia and the United States concluded an agreement to significantly expand their joint military cooperation through the development of advanced terrestrial and space-related radar and early warning systems. More significantly (and symbolically), following on from this initiative, Australia announced in June 2004 that it would commit to joining the United States missile defence program. A 25-year Memorandum of Understanding was signed in July providing the framework for the areas of cooperation between the two countries,⁴⁶ which could, according to Australian Defence Minister Robert Hill, even extend to the deployment of ballistic missile interceptors near Australian capital cities. This was the first time such a possibility had been canvassed.⁴⁷

While this is quite clearly a long term proposal, it has given rise to significant disquiet not only among various political elements within Australia but also among Australia's neighbours in the region, particularly China and Indonesia, who view it as encouraging an arms race and contributing to regional instability. If anything, their concerns have been exacerbated in recent days (late August 2004) by the announcement that Australia planned to acquire long-range cruise missiles designed to give its defence force the 'most lethal capacity' for air combat in the region.⁴⁸ This has taken place as Australia seeks to take a greater role in efforts to control North Korea's nuclear weapons program and is a major participant in the multi-nation Proliferation Security

Initiative (PSI), which has introduced new principles of interdiction in relation to the flow of equipment that may be used for the development of weapons of mass destruction.⁴⁹

Concluding Remarks – An Idea Ahead of its Time?

The *Space Activities Act* has been aptly described as 'an interesting and generally positive contribution to the national implementation of international space law'.⁵⁰ The legal regime that has been established in Australia is a sophisticated and detailed example of domestic space law, particularly in the areas of licensing mechanisms for commercial space launches (and returns) and the regulation of financial responsibility for liability. Moreover, it is in certain aspects also quite innovative, and will add to the perennial discussion of 'where space begins', perhaps eventually promoting broader State acceptance of the 100 kilometre 'boundary' and giving rise to the emergence, over time, of an important customary rule.

Yet, while these innovations are of great interest to space lawyers, the stark fact remains that the creation of well constructed domestic regulatory systems will not of itself be sufficient to facilitate the establishment of a long term and viable commercial launch industry. Obviously, appropriate domestic legislation and the creation of a well qualified administrative body within Government are highly desirable (and increasingly necessary) elements. However, in the absence of a long term strategy of Governmental support, this will in all likelihood not be enough to sustain the industry through the difficult embryonic stages of its development.

In Australia's case, the Government's approach to the development of a commercial space launch industry has been a case of 'two steps forward – one and a half steps back'. The optimism (some

would say misguided) that accompanied the promulgation of the legislation and the agreements with Russia has not yet resulted in anything reasonably approaching the creation of a viable and self-supporting industry. This is not to say that it may not happen in the future, but this will require, among other things, a reversal of Governmental policy in relation to space and space-related activities. The political exigencies of a post September 11 world have significantly altered the landscape of Australia's space policy and highlighted the military and national security concerns of the country associated with its engagement with space. Along the way, the prospect of a commercial space launch industry, at least for the present time, has (to keep with the military theme) become collateral damage.

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¹ Open for signature 27 January 1967, in force 10 October 1967, 610 U.N.T.S. 205.

² *Outer Space Treaty* Article VII.

³ Open for signature 29 March 1972, in force 1 September 1972, 961 U.N.T.S. 187.

⁴ For example, in Argentina, Brazil, Canada, Chile, France, Japan, South Africa, Russian Federation and Ukraine: United Nations Office for Outer Space Affairs website (accessed 25 August 2004).

⁵ 5 June 1961, [1961] ATS 10.

⁶ 19 December 1974-11 February 1975, [1975] ATS 6.

⁷ The various States of Australia had been 'colonies' of the United Kingdom before independence on 1 January 1901, and the United Kingdom at the time maintained facilities and operations at the Woomera site.

⁸ Article 5.

⁹ *Exchange of Notes constituting an Agreement between the Government of Australia and the Government of Canada relating to the Launching of a Canadian Scientific Rocket from Woomera* 26-27 August 1976, [1976] ATS 22.

¹⁰ For example, *Exchange of Notes constituting an Agreement between the Government of Australia and the Government of the United States of America concerning the Launching of Seven Aerobee Rockets* 18 September 1973, [1973] ATS 25 and *Exchange of Notes constituting an Agreement between the Government of Australia*

and the Government of the United States of America on the Launching of Sounding Rockets 1 September 1987, [1987] ATS 13.

¹¹ Australian Ministry for Industry, Science and Resources, *Explanatory Memorandum to the Space Activities Bill 1998* December 1998 at page 4 (accessed at www.aph.gov.au on 21 August 2004).

¹² The establishment of a detention centre on Christmas Island has itself been the cause of some concern: 'Detention centre threatens Russia's Christmas island space project' *SpaceDaily* 15 April 2002 (accessed at www.spacedaily.com on 16 April 2002).

¹³ The previous countries were the United States, Sweden, the United Kingdom, the Russian Federation and South Africa: Frans G von der Dunk 'Launching from "Down Under": The New Australian Space Activities Act of 1998' [2000] *Proceedings of the Forty-Third Colloquium on the Law of Outer Space* 132 at 139 (footnote 9).

¹⁴ Australian Ministry for Industry, Science and Resources, *Explanatory Memorandum to the Space Activities Bill 1998* December 1998 at page 4 (accessed at www.aph.gov.au on 21 August 2004).

¹⁵ *Space Activities Act 1998* (Cth) section 3.

¹⁶ Part 4 of the *Space Activities Act 1998* (Cth) sets out a comprehensive regime regarding the liability of launch operators. For a detailed description see Ricky J Lee 'The Australian Space Activities Act 1998: Building the Regulatory Capacity for a Launch Industry' [2003] *Proceedings United Nations/International Institute of Air and Space Law Workshop on Capacity Building in Space Law* United Nations, New York 53 at 83-92.

¹⁷ Australia has ratified each of the 5 United Nations space treaties.

¹⁸ 23 May 2001, [2004] ATS 17.

¹⁹ For more details on the legislation, see, for example, von der Dunk note 13 above and Lee note 16 above.

²⁰ *Space Activities Act 1998* (Cth) section 15.

²¹ *Space Activities Act 1998* (Cth) sections 11 and 26(1).

²² *Space Activities Act 1998* (Cth) section 26(2).

²³ *Space Activities Act 1998* (Cth) section 12(a).

²⁴ *Space Activities Act 1998* (Cth) sections 14(a) and (b).

Australia has previously been the 'unintended' return destination for space objects. The most well-known example was in 1979, when several tonnes of debris from the United States' US\$2.6 billion Skylab space station, at the time the largest space object ever to orbit the Earth, crashed into the Great Australian Desert, having re-entered the Earth's atmosphere several thousand kilometres from its planned orbital track. This provoked a hurried and rather embarrassed apology to the Australian Government by United States President Jimmy Carter: 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 at 463.

²⁵ *Space Activities Act 1998* (Cth) section 46.

²⁶ *Space Activities Act 1998* (Cth) section 8.

²⁷ 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: 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.

Much has been written about the possible limits as to where outer space begins. For a cross section of views on the issue see, for example, Bin Cheng 'International Responsibility and Liability for Launch Activities' [1995] 20:6 *Air & Space Law* 297, I.H.Ph Diederiks-Verschoor *An Introduction to Space Law* (2nd ed) 1999 Kluwer Law International, The Hague at 1-21 and Virgiliu Pop 'A Celestial Body is a Celestial Body is a Celestial Body' [2001] *Proceedings of the Forty-Fourth Colloquium on the Law of Outer Space* 100.

²⁸ *Agreement between the Government of Australia and the Government of the Union of Soviet Socialist Republics on Co-operation in Space Research and the Use of Space for Peaceful Purposes* 1 December 1987, [1987] ATS 27.

²⁹ *Agreement between the Government of Australia and the Government of the Russian Federation on Cooperation in the Field of the Exploration and Use Of Outer Space for Peaceful Purposes* 23 May 2001, [2004] ATS 17, Article 1(a) (2001 *Agreement*).

³⁰ 2001 *Agreement* Article 5(1).

³¹ 2001 *Agreement* Article 4(j).

³² 2001 *Agreement* Article 10.

³³ The then Minister for Industry, Science and Resources Nick Minchin, quoted in Michael Perry 'Australia Announces Christmas Island Spaceport' *SpaceFlight* 25 June 2001 (accessed at www.space.com on 25 August 2004).

³⁴ 'Australia Signs Space Launch Agreement With Russia', *Space Daily*, 23 May 2001 (accessed at www.SpaceDaily.com on 25 May 2001).

³⁵ 'Detention centre threatens Russia's Christmas island space project' *SpaceDaily* 15 April 2002 (accessed at www.spacedaily.com on 16 April 2002).

³⁶ Issued by the Australian Department of Industry, Tourism and Resources (the revamped name of the Department of Industry, Science and Resources) in July 2004 (accessed at www.industry.gov on 22 August 2004). This is (slightly) revised from the version first issued in November 2003.

³⁷ *Australian Government Space Engagement: Policy Framework and Overview* at 3.

³⁸ *Australian Government Space Engagement: Policy Framework and Overview* at 3.

³⁹ *Australian Government Space Engagement: Policy Framework and Overview* at 9.

⁴⁰ *Australian Government Space Engagement: Policy Framework and Overview* at 13.

⁴¹ For a discussion on the merits of Government protection of the private launch industry in the United States see Tanja L Masson-Zwaan 'The Martin Marietta Case: Or how to Safeguard Commercial Space Activities' [1993] 18:1 *Air & Space Law* 16.

⁴² *Australian Government Space Engagement: Policy Framework and Overview* at 2.

⁴³ *Australian Government Space Engagement: Policy Framework and Overview* at 11.

⁴⁴ ASN comprises a group of nine private and public stakeholders including several sections of the CSIRO (Commonwealth Science and Industrial Research Organisation), the Australian Space Industry Chamber of Commerce (ASICC), Macquarie University and a number of private technology companies. It was developed with the assistance of the New South Wales State Government.

⁴⁵ 'Australia to play role in Mars mission' *AAP News* 15 January 2004 (accessed at <http://news.ninemsn.com.au> on 15 January 2004).

⁴⁶ 'Australia to commit to Son of Star Wars missile program' *SpaceWar* 20 June 2004 (accessed at www.spacewar.com on 23 June 2004).

⁴⁷ Tom Allard 'Home bases for missile defence: Hill' *The Sydney Morning Herald* 23 June 2004, page 10 column 1.

⁴⁸ 'Australia to Acquire New Longer Range Cruise Missiles' *SpaceDaily* 26 August 2004 (accessed at www.spacedaily.com on 27 August 2004).

⁴⁹ For details of the PSI and the principles of interdiction, see The White House, Office of the Press Secretary Fact Sheet 'Proliferation Security Initiative: Statement of Interdiction Principles' 4 September 2003 (accessed at www.state.gov on 17 June 2004).

⁵⁰ von der Dunk note 13 above at 139.