

## LIABILITY FOR INJURY, LOSS OR DAMAGE TO THE SPACE TOURIST

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*With the potential for much growth in the space tourism industry, concerns regarding the state of the law governing the liability for any possible damage, loss or injury to such tourists increase. Presently, liability for space activities by the private sector is subsumed into states' international responsibility and liability. This may prove problematic for the emerging space tourism industry. There are a number of ways of imposing liability: by an international convention on liability for space carriers, by bilateral or multilateral agreements, or by regional and/or domestic legal mechanisms. Regardless of the method, the law will have to examine the type of damage for which claims may be made and the potential fora for making those claims. Space law could follow the law relating to carrier's liability in the air or on the high seas. It is submitted that a modified version of the Montreal Convention offers the best example of how this is to be achieved within outer space law.*

### THE POTENTIAL GROWTH IN THE SPACE TOURISM INDUSTRY

The idea of space tourism is not new<sup>1</sup> but it has not yet lost the "giggle" factor in the public domain. This looks set to change as technological developments in reusable launch technology<sup>2</sup> (e.g. prototype space planes<sup>3</sup> like the Sanger II, the STS-2000 or the X-37) reduce the cost of space travel<sup>4</sup>. But the space tourism industry does not necessarily require space vehicles capable of orbital flight.<sup>5</sup> Indeed, there is a growing

interest in tours to low earth orbits<sup>6</sup> which cost significantly less than Dennis Tito's \$20m. ticket on the Soyuz. Space Adventures, a Virginia based company, starts prices at \$98,000 for suborbital flights. Rutan, the designer of Space Ship One, has suggested that the first flights on the craft could be sold for \$30,000-\$50,000, less than the present cost of climbing Mt Everest<sup>7</sup>. Second generation suborbital space flights could cost between \$7,000 and \$12,000<sup>8</sup> – the same price range as a seat cost on Concorde<sup>9</sup>.

In the business world, space tourism is viewed as a viable industry as evinced by the market research.<sup>10</sup> The Futron Corporation projects that by 2021 the space tourism industry could enjoy revenues of \$700m. for suborbital flights (at an assumed cost of \$100,000 per flight) and \$300m for orbital flights (with an assumed cost of \$5m per two week stay), with the entire industry worth over \$1billion.<sup>11</sup> The role of private sector in the space industry cannot be ignored. The launch of the Telstar satellite on July 10<sup>th</sup> 1962 marked the beginning of private entities' involvement in space. Such involvement has been increasing and is being actively promoted by projects such as the Ansari X-Prize, which hopes to encourage private commercial space flight.

The potential for rapid growth in this area within the next two decades is great but, as with aerospace flight in its early stages, a legal regime governing the liability of

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\* Price quotations are from the Space Adventures website, <http://www.spaceadventures.com/media/faq>.

carriers and other organisations for loss, injury to space tourists should be established. The need for such a regime has been recognised by others, such as Wollersheim<sup>12</sup>, Bhatt,<sup>13</sup> Hurtak,<sup>14</sup> Roberts<sup>15</sup> and Hashimoto.<sup>16</sup> Such a regime is required to encourage and promote this fledgling industry and to deal with the present inadequacies with the existing state of the law.

### THE PRESENT STATE OF THE LAW REGARDING LIABILITY FOR THE SPACE TOURIST

For the purpose of this paper a space tourist is defined as someone who tours or travels into, to, or through space or to celestial bodies for pleasure and/or recreation. Tourists are not mentioned in the *corpus iuris spatialis*, nor are they covered under the Rescue Agreement 1968. Tourism is not mentioned either, but as it is a 'use' of space, it is permissible under art.I of the Outer Space Treaty 1967 (OST).

The concept of State liability is well established by the OST. Under article VI, state parties are responsible for all national activities carried out in space by both governmental and non-governmental agencies.<sup>17</sup> States must supervise and authorise any activities of non-governmental agencies. The state from whose territory the space object was launched, the state procuring the launch state and the state that launches the object are liable for any damage caused to third party state or its natural or juridical persons by such object or its component parts on the Earth, in air or in outer space, including the moon and other celestial bodies. These provisions on liability were expanded and clarified by the Convention on International Liability for Damage Caused by Space Objects 1972.

Under the Convention, liability attaches to the "launching state" absolutely for damage caused by its space object on the surface of the earth or to aircraft flight (art. II). Otherwise liability is imposed where damage occurs because of the fault of the State or the fault of those for whom it is responsible (art.III). Under article IV(1)(a), where space objects of two different launching states collide (other than on the surface of earth) and damage results to a third party state or its persons, they are jointly and severally absolutely liable for damage done on the surface or to aircrafts. Liability for damage caused elsewhere as a result of the collision is fault-based (art. IV(1)(b)). The burden of compensation is apportioned according to the fault of each launching state (art. IV(2)). If this is not possible, the burden is apportioned equally. Launching states that have paid compensation can seek to be indemnified by the other launching states involved under art. V(2). Exoneration from absolute liability may be granted where a launching State establishes that the damage resulted either wholly or partially from gross negligence or from an act or omission done with intent to cause damage on the part of the claimant State (or of natural or juridical persons it represents) provided the launching State's activities were in accordance with international law (art. VI). Claims for compensation are to be pursued through diplomatic channels, or through the Secretary-General of the UN (art. IX). If the claim cannot be resolved in these ways, the Convention makes provision for the establishment of a Claims Commission to resolve the matter (art.s XIV to XX). The Convention excludes any question of state liability towards its own nationals (art. VII (a)). While liability can attach to international intergovernmental organisations, where such bodies accept to be bound by the Convention, there is no

provision for any other non-state parties to accede to it.

While the supervision of the State over non-state actor's activities in space is desirable and necessary, a means of directly suing the third party involved is unavailable to the injured space tourist. Furthermore, as noted by Wollersheim, a state may legally block space activities of private actors in order to avoid exposing themselves to liability, to the detriment of the space tourism industry.

### THE MEANS OF IMPOSING LIABILITY

#### By UN Convention

The UN Committee on the Peaceful Uses of Outer Space (COPUOS)<sup>18</sup> has already been responsible for instituting the five main legal instruments relating to space activities. A convention on the liability of commercial space carriers would be open to worldwide ratification and would ensure uniform law exists in ratifying states. Plus, any change to existing space law liability provisions as set out in the OST or Liability Convention would have to be made by the UN. Unfortunately, the large number of states, particularly space-faring nations, with vested interests in any such convention, would mean the convention will contain some ambiguous provisions in order to facilitate compromise. It would also take some time to achieve consensus among a large number of states. However, consensus within COPUOS usually results in rapid adoption in the General Assembly and ratification by states.<sup>18</sup> The use of such a convention may also be limited in some states, particularly those of a dualist nature.

#### By UN Resolution

Alternatively, COPUOS could establish guidelines in the form of a resolution. These

guidelines would not, of course, be legally binding but they would be drafted by a single body with extensive knowledge and understanding of the field. Over time, the principles it sets out could become customary international law with prolonged usage and adherence. This would take longer than drafting and negotiating a convention and would leave the law uncertain and undefined for decades while the industry developed. This would be far more challenging to a fledgling industry than an ambiguous convention and most undesirable<sup>19</sup>.

#### By Bilateral Agreements/Multilateral Treaties

A large number of such agreements have been drawn up the space law arena<sup>†</sup>. As consensus is only sought among a limited number of states, it should be easier to achieve and take less time. However, the law then lacks uniformity and consistency across various jurisdictions. This can prove difficult for the individual plaintiff bringing a claim in another jurisdiction, providing the treaty can be invoked within the domestic courts. But this may not always be the case. The Montreal and Warsaw Conventions are examples of private multilateral treaties that have managed to overcome these difficulties, on account of their widespread acceptance. Schachter has noted the benefit of using this instrument where specific obligations are

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<sup>†</sup> For example, the agreement between the Government of the Federative Republic of Brazil and the Government of the United States of America on Technology Safeguards Associated with U.S. Participation in launches from the Alcantara Spaceport (18 April 2000) and the agreement among the Government of the Republic of Kazakhstan, the Government of the Russian Federation and the Government of the United States of America on Technology Safeguards associated with the Launch by Russia of U.S. Licensed Spacecraft from the Baikonur Cosmodrome (26 January 1999).

envisaged and a high degree of compliance is sought.<sup>20</sup> Unfortunately, this can generate national demands, which militates against a formulation that can transcend individual national interests. It is submitted that COPUOS and the General Assembly would therefore be a better forum for negotiating such a treaty.

### Regional Instruments

Directives governing liability could be drafted for specific regions, like the 1977 Intercosmos Agreement. While this could promote commercial space flight in one region and thus encourage other states to follow suit, global cohesion, uniformity and accessibility would be lacking in the law as a whole. In airspace law, the presence of European regulations<sup>‡</sup> in addition to the Warsaw Convention (WC) proved overly complex, as noted by Awori<sup>21</sup>. This has been significantly ameliorated by the Montreal Convention 1999 (MC), to which the European Community is a party.

### Domestic Legal Instruments

By leaving such matters to individual states, the law in this area will develop in an incremental and haphazard way, lacking uniformity on the world stage and potentially within the state itself. Convincing states to alter their existing law and to submit to a convention that pre-empts state law may prove difficult. Many non-space faring states may see no reason and have no motivation to create such an instrument. It would take many years for all

<sup>‡</sup> Council Regulation (EC) No 2027/97 of 9 October 1997, Official Journal of the European Union, L 285, 17.10.1997; Regulation (EC) No 889/2002 of the European Parliament and of the Council of 13 May 2002 amending Council Regulation (EC) No 2027/97 Official Journal of the European Union, L 140, 30.05.2002.

or even a majority of states to do so. Plus, all ratifying states to the existing OST would still be liable to be sued directly for any injury caused by the space activities carried out by organisations and private operators in that state for damage caused to third parties on the surface.

It is submitted that either a new private multilateral treaty be drafted like the MC or a similar instrument by COPUOS to be approved by the General Assembly. The latter is preferred as the UN would appear to be a more appropriate forum. A convention on carriers liability for space tourists would provide an appropriate legal framework for the tourism industry. It would examine the apportionment of liability between States and private enterprise. While States will maintain supervisory and licensing functions, private space carriers will be expected to shoulder a fair burden of liability. Injured space tourists should be able to directly sue them in the appropriate forum.

### APPLICABILITY OF A CONVENTION

The initial problem with such a treaty is the potential scope of its applicability. If it applies to passengers carried into outer space, it could potentially exclude LEO space tourists. The primary difficulty lies in defining where the application of air law ends and that of outer space law begins, a difficulty that has existed in space law since its inception.<sup>22</sup>

Two primary philosophies exist – the spatialist philosophy and the functionalist philosophy<sup>23</sup>. The former favours the establishment of a defined boundary between air and space. This has the benefit of clarity but dispute continues as to where this line should be drawn. Options include the lowest perigee of a satellite, the meteorological atmosphere<sup>24</sup> or the level of

aerodynamic lift. Goedhart favours a double boundary of 50-60km and 100-110km with a non-sovereign mesospace between.<sup>25</sup> This approach suits a place-intensive application of space law. The latter philosophy favours a definition based on activities – air space activities are bound by air law and space activities by space law. This appears reasonable but difficulties arose with the development of hybrid technology, such as space shuttles. Ultimately, the problem was set aside by the international community without having being affirmatively dealt with one way or another. Attempting to resolve this dispute could prove to be the stumbling block of any new convention.

In order to govern the convention's applicability, it would better to follow the air law approach. Under it, the journey starts and finishes with embarkation and disembarkation. It pre-empts all claims occurring in between these points and claims arising out of activities associated with embarking and disembarking. Entry and exit onto a space vehicle, installation or station/module and activities associated with entry and exit would be suitable equivalent points in a space law convention.

#### THE TYPE OF DAMAGE, LOSS OR INJURY

In air law, only claims for injury sustained as a result of an accident may be brought under the MC. There is no definition for 'accident' provided for in the MC or in the Warsaw Convention. However, the court in *Air France v. Saks* 470 U.S. 392 (1985) has defined it as an unexpected or unusual event or happening that is external to the passengers own internal reaction to the usual, normal and expected operation of the aircraft which causes injury.

A similar approach in space law would function well and has the benefit of being tried and tested familiar formula, notwithstanding the ambiguous limits on what may be considered and accident. That ambiguity provides judges with a degree of flexibility in deciding cases, though from air law it is clear that it does not necessarily facilitate the development of precedent.

#### Physical Injury

With regard to space tourists, it is arguable that space travel is still an ultra hazardous activity, proof having been borne out by both the Challenger and Columbia disasters. Aerospace flight was also considered ultra hazardous in the 1920s but this did not prevent the negotiation and signing of the Warsaw Convention imposing some measure of liability on carriers. Furthermore, the hazardous nature of space travel did not prevent the dependents of those lost with the Challenger disaster from suing in the domestic courts<sup>§</sup>.

However, space flight is attendant with far more risks than aerospace flight. The increased G-forces on the body can result in some discomfort, deafness, cardio-vascular stress etc. Blindness may be caused by the force of acceleration on a detached retina and the movement of blood in zero-G can result in facial swelling. Renal calculus can be aggravated<sup>26</sup>. There is also the risk of radiation poisoning from the Atlantic Anomaly. Furthermore, remaining in space for more than twenty-four hours increases the effect and incidence of space sickness<sup>27</sup>. It is submitted that while liability should attach for injury to limbs or loss of life sustained as a result of an accident, discomfort from space sickness should not

<sup>§</sup> E.G. *Smith v. Morton Thiokol Inc.*, Case No. 87-398-CIV-ORL-19, 712 F. Supp. 893; 1988 U.S. Dist. LEXIS 16919.

ground a claim unless the discomfort could have been ameliorated but such amelioration was deliberately denied to the tourist.

### Psychological Damage, Disappointment and Emotional Anguish

Purely psychological injury, without any accompanying physical injury, has proved to be most problematic for courts at both national and supranational levels. In air law, courts have proved generally less willing to extend liability to cover psychological injury. The MC does not permit claims for damages arising out of mental injury. The Warsaw Convention never stated definitively that such claims were not permitted, though the French text provided for “lesion corporelle”. In *Rosman et al vs. TWA Inc* and *Herman vs. TWA*<sup>†</sup>, the New York Court of Appeal concluded that recovery for mental anguish was permissible only as a direct result of physical injury and was not a cause in itself under the WC.<sup>28</sup> Recovery for pure psychological injury was not allowed in *Morris v. KLM Royal Dutch Airlines* and *King v. Bristow Helicopters Ltd*<sup>\*\*</sup>.<sup>29</sup>

The Liability Convention defines “damage” as “loss of life, personal injury or other impairment of health; or loss of or damage to property of States or of persons, natural or juridical, or property of international intergovernmental organizations”. The World Health Organisations defines ‘health’ as a “state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”.<sup>30</sup> Thus the Liability Convention on conventional, international definitions appears to include psychological injury within existing liability parameters. But this issue has not been tested.

However, while it is arguable that psychological and physical injury should be treated the same in law, the fact remains that the two continue to be distinguished. Therefore, in view of the present undecided state of the law on the subject, it is advisable that pure psychological injury, direct or indirect, remains outside the realm of compensatable injury. As the law clarifies, liability could be extended to encompass this.

Traditionally, contract law does not recognise claims for disappointment and emotional distress arising out of a breach of contract. However, in *The Mikhail Lermontov*<sup>††</sup><sup>31</sup>, claims for disappointment and emotional anguish did succeed where the ship had sunk eight days into the two-week cruise. The High Court of Australia permitted recovery where the claim proceeded from physical inconvenience of the breach or where one of the contracts objects was to provide enjoyment or relaxation. Despite the parallel between cruise ships and space carriers for tourists, recovery for such claims should not be permitted directly under a space law convention. It would be unfair if claims for direct psychological injury were disallowed but claims for emotional distress were permitted.

### Other Losses

Claims for the loss incurred because of destroyed or damaged baggage should be permitted. Liability should not attach if the loss occurred due to an inherent defect, quality or vice of the baggage. This parallels article 17.2 of the MC. It is unlikely that baggage for space tourists would be extensive in any case given the limits on cabin space and payloads, at least in the pioneer phase of the industry.

<sup>†</sup> 314 NE 2d 848.

<sup>\*\*</sup> [2002] 2 WLR 578.

<sup>††</sup> (1993) 111 A.L.R. 298.

Losses for delay should also be recoverable where the tourist can show provable damage. Liability should not attach if the carrier took all reasonable measures to prevent delay or if it was impossible to take such measures. This parallels articles 19 of the MC.

## JURISDICTION

### The State of Registry

The unique character of space as a *res communis*<sup>32</sup> has meant that the jurisdiction and ownership of space objects has been a prime issue at the forefront in the development of space law. This could prove most useful in the creation of a new convention. Under article VII of the OST, states to which a space object is registered retain jurisdiction and control over it and any personnel thereof, while in space or on a celestial body. The ownership of an object is not affected by its presence in space or on a celestial body. State parties to the Moon Agreement retain jurisdiction over any installations and buildings on the moon (art.28). Under article V of the International Space Station Agreement, partner states retain jurisdiction over the flight elements of the space station registered thereto in accordance with article II of the Registration Convention. The state of registry could be made as the primary jurisdiction for all claims for all injuries occurring on space objects. If this approach is adopted, the registration of all space objects will be critical in answering jurisdictional questions and the importance of the Registration Convention will increase.

### The Launching State

The launching state is defined in art. of the Liability Convention as the state "which launches or procures the launching of a space object" or "the state from whose

territory or facility a space object is launched". However, as private entities may actually be the parties who launch or procure the launch, this formulation may be seen to become somewhat detached from the reality of space flight. Any convention should include the state which has supervisory jurisdiction over the private actor under article VI of the OST, the state which has licensed the launch as well as the state from which the launch takes place. Launches that take place from ocean platforms in the high seas should be treated as having been launched from the State exercising control and jurisdiction over that platform.

### Other Potential Fora

The MC provides for five potential fora for claims under article 33: before the courts of the carrier's domicile, its principal place of business, the place of business through which the contract was made; the courts of the destination; or the territory of a state party in which at the time of the accident the passenger has his or her principal and permanent residence and to or from which the carrier operates services for the carriage of passengers by air, either on its own aircraft or on another carrier's aircraft pursuant to a commercial agreement. By following this approach, the state of registry would be viewed as the equivalent of the State whose nationality an aircraft claims.

This approach has the benefit of clarity. Introducing the carrier's location eliminates some of the difficulties attendant with deciding the jurisdictional questions. However, there are still some problems with wholesale incorporation of the MC into space law. This approach does not reflect the unique role of the State and its obligations in space law. Injuries sustained while on a space or celestial installation would be

decided on the carrier's location without any reference to traditional space law concepts, such as the launching authority or the state of registry.

It is submitted that the convention permit a number of possible fora that could have jurisdiction over accidents in the absence of an exclusive jurisdiction clause – the state of registry, the state which has supervisory jurisdiction over the private actor (under article VI of the OST), the state which has licensed the launch, the state with jurisdiction over the launch site, the state in which the carrier or tour operator or manufacturer is domiciled; its principal place of business or the place of business through which the contract was made.

### LIMITATIONS ON LIABILITY

Limitations on liability have a number of benefits for industry. Steel observes that such limitations encourage investment, ensure a level playing field for all operators, provide comfort to the insurance industry and discourages punitive recovery.<sup>33</sup> Three distinct approaches have been taken. The Limitation of Liability for Maritime Claims Convention 1976 placed a cap on the number of passengers who could claim. But it was amended by the 1996 Protocol to reflect the WC approach.<sup>34</sup> It is not recommended that space law adopt such an approach. It has proved dissatisfactory in the maritime field and can operate to do an injustice to worthy plaintiffs.

The second approach is to limit the amount a passenger could claim, as exists under both the Warsaw and the 1974 Athens Convention. There is no global limit on the number of passengers who may claim. There is no just reason for avoiding unlimited liability within the convention system where the carrier has been at fault.

The MC has altered this by creating a two-tier system with regard to liability. It is the preferred approach for space law. Under Article 17, the carrier is liable in the event of death or bodily injury of a passenger caused by an accident on board the aircraft or in the course of any of the operations of embarking or disembarking. Contributory negligence of the passenger may reduce or eliminate liability under article 20.

In the first tier, there is a cap of 100,000 SDRs (art.21.1) for injury irrespective of fault. However, the second tier has a presumption of fault and liability is unlimited (art.21.2). The onus is on the carrier to show that the injury did not occur as a result of the negligence or wrongful omission of it or its servants (21.2.a) or that it occurred solely because of the negligence or other wrongful act of a third party (21.2.b). This represents a good balance between the needs of the industry and the need for justice for the passenger. Admittedly, this approach was only followed after the aviation industry was developed and did not require extensive protection from liability at the expense of individual plaintiffs. By contrast, the commercial space flight industry is still only emerging. The concept of absolute limited liability or physical injury or death could serve to discourage potential tourists, especially where they have dependants. Furthermore, domestic tort law has continually been moving away from limited liability as evinced by the creation of new torts.

Nonetheless, a balance should be achieved between the conflicting needs. Therefore, it is submitted that a similar two-tier system be adopted in space law for death and bodily injury. But losses incurred on account of delay and for the loss of baggage should be



capped as the MC does in art.19. Such provisions would be particularly suitable in space law given the additional risk of justifiable delays in departure or arrival where the weather has significant impact of the decision to launch or to land.

Any new treaty should also include provisions stating the time limit for bringing a claim. The Liability Convention sets a time frame of "not later than one year following the date of the occurrence of the damage or the identification of the launching State which is liable" (art. X). The MC in art. 35 designates a timeframe of two years during which an action may be brought. A time frame of two years should be imposed with time running from the date of the occurrence of the damage or the identification of the party which is liable. It is also submitted that there should be an upper time limit for claims against the manufacturers of the vehicle, space suits, module, installations or component parts etc. and a suitable cap on liability imposed on a similar two-tier approach.

Clauses attempting to reduce or eliminate liability in contracts for the carriage of people should be deemed to be null and void in disputes arising under a convention, as under article 26 of the MC. The rest of the contract should remain unaffected.

#### WAIVERS FOR TORT ACTIONS

Waivers are mandatory in the U.S. for space contracts for the carriage of goods under the Commercial Space Launch Act 1984. Originally, waivers were not held to exclude liability in tort absolutely in such contracts e.g. *Lexington Insurance v. Mc Donnell Douglas*<sup>§§</sup>.<sup>35</sup> The CSLA introduced a reciprocal waiver requirement in s.70112(b) for parties involved in launch activities. In

<sup>§§</sup> No. 481713 (Cal. Supr. Ct., Orange Co., May 1990).

*Appalachian Insurance v. Mc Donnell Douglas*<sup>§§</sup>, the Court of Appeal concluded that compliance with this requirement did not prevent a party suing where injury resulted from wilful, wanton, reckless or gross conduct. However, in *Martin Marietta v. Intelsat*<sup>¶¶</sup> the court came to the opposite conclusion finding that to permit tort claims in such contracts would clearly undermine legislative intent.<sup>36</sup> Liability in tort could only attach where there was an additional duty outside of the launch contract. The Commercial Space Act 2003 has extended the requirement of reciprocal waivers of claims to be executed between crew and other space flight participants and the licensees, permittees and Federal Government.

It is submitted that there should be no mandatory requirement for waivers for space tourists against the licensee or carrier. Such a requirement could negatively impact on the industry by discouraging many potential tourists. Furthermore, the balance of expertise found in space contracts for the carriage of cargo between the parties involved does not generally exist between the parties to a space tourism contract. The Convention would pre-empt the majority of space tourist claims. Claims made on the surface of the earth while in training etc. before the commencement of the journey would be unaffected by the Convention and there is no reason why such activity should be subject to a waiver.

#### REVIEW CLAUSE

Any convention should also contain a review clause. This should ensure the law continues to facilitate both industry and passengers and that the caps on liability

<sup>§§</sup> 262 Cal. Rptr. 716 (Cal. Ct. App. 1989).

<sup>¶¶</sup> 763 F. Supp. 1327 (D. Md. 1991), aff'd in part, rev'd in part, 978 F.2d 140 (4th Cir. 1992).

continue to be appropriate. The Registration Convention provides for a review ten years after the date of entry into force under art.X. The Liability Convention has a similar clause but allows for a review where one third of state parties request it and the majority concur (art. XXVI). The MC has a five year periodic review clause under art.24. Given the potential for rapid growth, technological advance and economic change, a five year periodic review clause would be appear to be appropriate for the commercial space flight industry.

### INSURANCE

Private carriers should be obligated by any convention to be insured. This is especially necessary if liability is potentially unlimited. Article 50 of the MC requires carrier's to maintain adequate insurance. Article 25 of the Space Activities Act 1993 of the Russian Federation makes insurance compulsory for all space carriers. Article 48 of the Australian Space Activities Act 1988 also makes insurance a requirement to obtain a launch licence.

### CONCLUSION

A legal regime governing liability for loss, injury or damage to the space tourist should be established. This will serve to promote and protect the emerging space tourism industry and deal more realistically with the issue of liability. Such a regime would be best established through a UN convention on carrier's liability. It should roughly follow the Montreal Convention with a two tier system of liability, a review clause and a similar range of applicability.

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