

IAC-10.E7.5.15

## **LIABILITY LIMITATION UNDER NATIONAL LAW AND THE LIABILITY CONVENTION**

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### I. Introduction

At international meetings, most recently at the 2009 UN Regional Space Law Conference in Tehran, participants raised the issue of inconsistency between the United States Commercial Space Launch Act (CSLA),<sup>1</sup> and the Liability Convention.<sup>2</sup> This is because the US national law limits liability whereas no limits on liability exist in the Liability Convention. Possible ambiguity about US compliance with the Liability Convention and its treaty obligation to “provide such reparation in respect of the damage as will restore the person ... to the condition which would have existed if the damage had not occurred”<sup>3</sup> deserves to be clarified.

Victim compensation is an important issue. Potential losses resulting from collisions

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<sup>1</sup> 49 U.S.C. 70104 et seq.

<sup>2</sup> Convention on International Liability for Damage Caused by Space Objects, 961 UNTS 187 (1972)

<sup>3</sup> Id. Art. XII,

with space objects can be massive.<sup>4</sup> The risks may be divided into two categories: (1) collision with the surface of the Earth and (2) collisions in outer space.<sup>5</sup> An example of the first risk category would be a large space object causing extensive damage to the surface of the Earth. A precedent for surface liability was set by the then Soviet COSMOS 954 satellite which disintegrated over the Canadian tundra. Most of its radioactive debris is still imbedded in the tundra of Northern Canada. The USSR recognized liability and paid compensation.<sup>6</sup>

The second risk category includes damage in outer space caused by space objects of launching states to space objects of other states and to persons (and property on

<sup>4</sup> The purpose of the CSLA government indemnification program is to provide adequate liability coverage for catastrophic risks; see U.S. study of its liability risk-sharing regime, *infra* n. 31. Catastrophic risk is risk greater than normal casualty risk.

<sup>5</sup> The Liability Convention, Arts II and III, establishes these two categories. The CSLA makes no such distinction; however it applies to both international and domestic claims. On the other hand, the Liability Convention applies only to international claims.

<sup>6</sup> Lyall and Larsen, *Space Law: A Treatise* (Ashgate 2009), at 117.

board) as well as damage to third party states and to their persons. In 2010 the attention of the world was focused on an INTELSAT communication satellite called Galaxy 15.<sup>7</sup> It is registered in the United States. Galaxy 15 went out of control and would not accept commands from INTELSAT. The satellite is located in geostationary orbit (GSO),<sup>8</sup> 36000 kilometers above the Equator. The satellite continued to function as a broadcast satellite because it is energized by its solar collectors. The satellite began drifting East in GSO causing danger of colliding with nearby satellites. As it passed by other satellites it interfered with their radio signals. At one time Galaxy 15 came within 0.05 degrees of separation from another satellite. Amazingly, INTELSAT, with the skilful cooperation of the operators of neighboring satellites, was able to avoid collisions. Considering the extreme sensitivity of the GSO, and the potential havoc that Galaxy 15 could wreck in the

<sup>7</sup> de Selding, *NASA May Move Orbital Debris Off Back Burner*, Space News, July 26, 2010 at 6.

<sup>8</sup><http://space.skyrocket.de> describes the drift of Galaxy 15. Depletion of the batteries finally enabled INTELSAT to regain control of the satellite at the end of 2010. The ITU Constitution, Art 44 characterizes the GSO as a limited natural resource which "must be used rationally, efficiently and economically, in conformity with the Radio Regulations ...taking into account the special needs of the developing countries and the geographical situation of particular countries."

GSO, the risk exposure of the State of registration under the Liability Convention and of INTELSAT is immeasurable. It could be impossible to restore the GSO "to the condition which would have existed if the damage had not occurred."<sup>9</sup>

If Galaxy 15 collided with another satellite in the GSO and its debris damaged other satellites in the GSO, the launching state would be liable under the Liability Convention. The "parts" mentioned in the Liability Convention's definition of space object includes outer space debris. The Convention's Art. 1(d) states that the term "space object" includes component parts of a space object as well as its launch vehicle and parts thereof."<sup>10</sup> Space debris represents the greatest space collision danger<sup>11</sup> one that is increasing with time. The International Space Station has already had several near misses and it can reasonably be expected that it will be impacted by space debris during its time in

<sup>9</sup> Liability Convention, Art. XII. NASA reports that in 2008 and 2009 four satellites in the GSO expired and can no longer be navigated from Earth. They are stuck in the GSO and are collision candidates. There are more than 150 expired, uncontrollable satellites and parts of launch rockets in the GSO; see de Selding article, supra n. 7 at 6.

<sup>10</sup> See discussion in Lyall and Larsen. *Space Law, A Treatise*, supra n. 6, at 107.

<sup>11</sup> Id.

orbit.<sup>12</sup> No way has been found to remove the increasing amount of space debris. The origin of much debris cannot be identified and compensation for outer Space debris may never be made. Given the massive impacts and exposure to liability it is no wonder that the Netherlands declined to register the satellites of the New Skies Company when the New Skies Company settled in the Netherlands.<sup>13</sup> The potential liability under the Liability Convention was too great.

Under the Outer Space Convention, Art VI,<sup>14</sup> the State authorizing the launch is duty-bound to supervise the entry into outer space of their commercial operators. The State can insist or impose operating conditions that minimize the risk of damage.<sup>15</sup> If the State issues a permit then it is treaty-bound to continue to supervise the operator to assure the operator continues to comply with the OST and with

the permit conditions.<sup>16</sup> The authorizing state has the option to eliminate the risk altogether by refusing to issue a permit because the risk is too great. If the commercial operator is refused a permit or the conditions are too onerous, then the operator can approach another state for a permit.<sup>17</sup> A so-called 'flag of convenience' state may be induced to issue a permit; that is, a state which may not have the interest or the ability to adequately oversee the activities of the operator, and if a catastrophe occurs then it may not have the resources to make the make full reparations.

Potential victim states, which include all space faring states, have a significant interest in enforcement of the Liability Convention.

## II. The Liability Convention

The Liability Convention is a treaty. It is not only a compact among the parties to the treaty, it is the law of the land of each party. Under the United States Constitution, Art. VI, "all Treaties made, or which shall be made, under the Authority of the United

<sup>12</sup> *Id.* Other examples of outer space liability exposure include the collision of the Iridium and the Russian Cosmos satellites in 2009.

<sup>13</sup> *Id.* at 88.

<sup>14</sup> Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space including the Moon and Other Celestial Bodies, (OST), 610 UNTS 205 (1967).

<sup>15</sup> See the Inter Agency Space Debris Committee mitigation rules, UNGA Res. 62/217

<sup>16</sup> The permitting process under the CSLA, 49 U.S.C 70104, is the US implementation of its OST Art. VI treaty obligation

<sup>17</sup> For example example the Protostar satellite registration in ITU by Belarus; note the maritime experience with 'flags of convenience' in Lyall and Larsen supra n. 6, at 94-95, *id.* at 570.

States, shall be the supreme Law of the Land;” and laws which are contrary to the Constitution are invalid.<sup>18</sup>

It is important to note how limited is the scope of the Liability Convention itself. The Convention implements the Outer Space Treaty<sup>19</sup> that has much broader scope. The OST, Art VII, makes each State Party to the OST broadly liable for damage to another State Party for any damage caused by its space objects. The scope of the Liability Convention is narrowed to absolute liability for damage caused by space objects to the surface of the Earth and to aircraft in flight (Art II). For damage caused elsewhere to space objects of one launching state to space objects of another launching state, compensation is on a fault basis liability regime (Art III). Furthermore, the Convention is interpreted to compensate only for damages directly caused and does not compensate for damages caused indirectly.

However, the principle of international liability for damages caused is based on the broader general principle of customary international law that a state is liable to other states for all damages caused and that the causing state is required to repair

<sup>18</sup> See renewed U.S. policy commitment to enforcement of international space law in its National Space Policy of the United States of America, issued by the White House on June 28, 2010.

<sup>19</sup> OST, Art. VII, supra n. 14

the damage in full.<sup>20</sup> The basic principle of international liability is well recognized by international arbitration tribunals in cases such as the Trail Smelter Arbitration (U.S. v. Canada), 33 AJIL 182 (1939) and 35 AJIL 684 (1941); The Permanent Court of International Justice (PCIJ) recognized the principle in the Chorzow Factory case (Germany v. Poland) 1928 PCIJ 4, Ser. A, No. 13 and the International Court of Justice (ICJ) applied it in the Corfu Channel case (UK v. Albania) 1949 ICJ Rep. 1. Furthermore, the principle is accepted by the International Law Commission.<sup>21</sup> Being a treaty, the Liability Convention applies among states. However victims bringing claims against individual commercial operators may find it more expedient to proceed privately in national courts rather than to ask their national governments to request reparations from other states under the Convention. In the national court they retain control over their own claims rather than relying on the political vagaries of state to state litigation. Direct claims are possible if allowed by and subject to national law.

### III. Private claims against the Commercial Satellite Operators

It may now seem odd in 2010 that national governments should assume the liability of

<sup>20</sup> Larsen & Lyall, *Space Law : A Treatise*, supra n. 6 at 103.

<sup>21</sup> UN Doc. A/56/10 (2001)

private commercial satellite operators. Why should mature space businesses like Boeing, Lockheed, Space-X, Arianespace, INTELSAT and SES not assume full primary responsibility for their own commercial activities as part of the cost of doing businesses just like other business operators? The reason for state protection of space businesses from liability can, in part, be traced back to the historic fact that the Liability Convention, just like the other space law conventions, was negotiated and concluded at a time when it was assumed that states would be the main satellite operators in outer space. At that time it was logical to make states liable for their outer space activities because they were the only actors in outer space. Besides, the principle of state liability for damage to other states was already established by customary international law. The Liability Convention has not been subsequently amended to make private commercial satellite operators directly liable under the Convention for injurious consequences of their space business activities. We remain in the current awkward legal regime under which, if SES suffers damage from collision with an INTELSAT Galaxy satellite, SES must ask the its government to bring a claim against the launching state of Galaxy 15, under the

Convention.<sup>22</sup> Launching states are directly liable for commercial activities of satellite operators over which they have little daily routine oversight except through the permitting process. The risk exposure should make States Parties nervous,<sup>23</sup> particularly if the launching state is a small country with few financial resources. The State of registry may be able to recover fully from a large resourceful commercial operator like INTELSAT, but many satellite operators are marginally funded. Their main resource may be the permit to launch a satellite

The suborbital satellite operators, like Virgin Galactic, are a new group of actors in outer space. They have not yet grown into a mature industry like the communication satellite operators. They have yet to prove themselves reliable. All the same, their launching states are liable under the Liability Convention for the damage they may cause and which is subject to the Liability Convention. The safety practices of the suborbital operators are being questioned. For their transportation of astronauts to the International Space Station, NASA wants to hold them up to NASA's safety standards. In its plans for use

<sup>22</sup> Note that claims often involve insurance companies as parties; U.S. launch operators are required to obtain insurance, 49 U.S.C. 70112; see discussion next page.

<sup>23</sup> See New Skies Company, Lyall and Larsen, *supra* n. 6 at 471.

of private commercial operators to transport astronauts to the ISS, NASA announced it wants to study and significantly upgrade the flight safety of the suborbital operators and to sort out “all indemnification and liability issues” before entering into contract with the suborbital operators for transportation of astronauts.

<sup>24</sup>

States already have the OST Art. VI treaty obligation to make sure that private commercial operators are in compliance with the treaty. They commonly require the private operators to obtain insurance in order to compensate victims as well as reimburse authorizing states for their risk exposure under the Liability Convention. In establishing the amounts of required insurance, the governments have estimated the ‘maximum probable loss’ (MPL) and have used that as a guide to how much insurance is required. In the United States a federal law,<sup>25</sup> requires the applicant to obtain third party liability insurance in the amount of not more than \$500 Mill. as well as \$100 Mill. insurance to indemnify the federal government in the event space launch operators damage government facilities. In return, a second US law,<sup>26</sup>

<sup>24</sup> Amy Klamper, Congressional Committees Overhauling Obama’s NASA Plan, Space News, at 6, 26 July, 2010.

<sup>25</sup> 49 U.S.C. 70112

<sup>26</sup> 49 U.S.C. 113

provides that the US government (through the U.S. Department of Transportation) shall pay the claims of third party victims against the private commercial operator above and beyond the insured amounts up to an ultimate limit of \$1.5 Billion. Since such payment may exceed moneys authorized by the Congress, the law authorizes the U.S. government to obtain from the Congress a supplementary appropriation to meet the additional expense.

Superficially it may appear that the United States has by statute imposed a limit on liability for damage to other states. But that is not the case. In fact the statute only limits the liability exposure of the private commercial operators. “The purpose of these variable and total limits is to ensure that commercial space activities are not deterred by an inability fully to off-set either by insurance or otherwise any U.S. international liability for damage consequent on the activity.”<sup>27</sup> Several states, other than the United States, have adopted similar schemes. Several states establish the actual amounts of required insurance, not by statute, but by government fiat based on its survey of the ‘maximum probable loss.’<sup>28</sup>

<sup>27</sup> Lyall and Larsen, Space Law, A Treatise, supra n. 6, at 115).

<sup>28</sup> Id,

The statutory limit on the operators' liability for damages caused may, in effect, be viewed as a temporary subsidy to limit their risk exposure and thus to enable them to obtain insurance because the U.S. Congress provided only a temporary limit on their liability. The latest U.S. reiteration of the statute expires in 2012. The U.S. Congress will in 2012 review the situation and consider whether the launch companies are financially mature enough assume full responsibility for damages caused by their business activities. The decision whether to renew the statute will to some extent depend on whether full insurance coverage can be purchased at a reasonable price.<sup>29</sup>

The scope of the US Law<sup>30</sup> is much narrower than the scope of the Liability Convention. Furthermore, the law provides that U.S. government payment of claims is not available to flight participants in suborbital tourist flights authorized by the U.S. Government. Hughes and Rosenberg conclude that the government decided that its risk of loss of flight participants was too

<sup>29</sup> The U.S. Congress did not intend an unlimited duration of government indemnification. Senator Rockefeller, Chairman of the Senate Commerce Committee, said that the new legislation extends the US Government's indemnification of commercial launch operators' "liability for another three years, that is until December 2012, and I expect we will reassess the market before that time to see if the commercial space industry is ready to assume full risk and responsibility." Space News, January 4, 2010, at 8.

<sup>30</sup> 49 U.S.C. 70413

great for the government to assume. "Because crew and space flight participants are not 'third parties' under the statutory definition, claims of crew and space flight participants against other entities involved in the licensed or permitted activity are neither covered by statutory-based insurance requirements nor are they covered claims eligible for indemnification under the CSLA or implementing regulations at 14 CFR 440.19(a)." <sup>31</sup>

## Conclusion

<sup>31</sup> Hughes and Rosenberg, Space Travel (and Politics): The Evolution of the Commercial Space Launch Act Amendments of 2004, 31 J. Space L. at 61 - 63 (2005)). See also Study of Liability Risk-sharing Regime in the United States for Commercial Space Transportation mandated by law, 49 U.S.C. 70113: "[F]oreign competitor Arianespace had put a cap on the liability insurance required of its customers, and had arranged for government indemnification of any claims above that cap. (Emerging foreign competitors, such as Russia and China, eventually did the same.)" This study concluded that current international risk sharing regimes were not likely to change if the United States terminated its risk-sharing regime, see [http://www.faa.gov/about/office\\_org/headquarters\\_offices/ast/reports\\_studies/](http://www.faa.gov/about/office_org/headquarters_offices/ast/reports_studies/) last visited Aug. 29, 2010.

The United States and other states which have adopted domestic insurance requirements for private commercial launch operators and limited the liability of these operators, did not thereby limit their liability under the Liability Convention. The distinguishing features are:

1. These domestic regulations were designed to support the fledgling private space launch industry.<sup>32</sup>
2. The U.S. legislation compensates individuals who bring claims against the space launch operators that obtained launch permission from the United States. It is designed to pay individual domestic and international claims that fit within the scope of the Commercial Space Launch Act.
3. The object and scope of the indemnification scheme under the Commercial Space Launch Act differs from that of the Liability Convention. The U.S. government indemnification regime is limited to third party liability for catastrophic launch-related claims in excess of the required maximum probable loss insurance, up to \$1.5 billion.

4. Claims under the Commercial Space Launch Act are paid by the U.S. Department of Transportation. Claims under the Liability Convention must be brought by foreign States against the U.S. Department of State because it involves and international treaty obligations.
5. Finally, the liability regime of the Commercial Space Launch Act differs from that of the Liability Convention. The CSLA regime is based on one single liability standard. Under the Liability Convention, Art. II, liability is absolute for damage to the surface of the Earth and to aircraft flight, and Art III damages occurring elsewhere are based on fault.

In conclusion the U.S. Commercial Space Launch Act does not limit the treaty compensation obligations incurred under the Liability Convention. The two legal regimes are separate and independent.

<sup>32</sup> Note that the 2010 White House National Space Policy Statement is silent on the issue of a risk sharing legal regime, whereas the previous White House policy statement expressed support