

demnification for claims above the insurance coverage amounts. Congress has been extending this sunset provision, expiration date, since 1988 through amendments to the Act. It is probably the biggest factor affecting United States competitiveness in the launch industry right now, and will most likely be amended before the next expiration date.

## 6. Other Countries

Other countries that currently have space launch capabilities and that also have some kind of liability regime for space launches include: Brazil, India, Israel, Japan, South Africa, Sweden, Ukraine and the United Kingdom.<sup>163</sup> For the regimes of these States and the regimes of States previously discussed, the following table provides a comparison of each of them.<sup>164</sup>

Table 1 Comparison of National Liability Regimes

Country	Commercial Space Launch Capability ELV Name(s) (launcher affiliation)	Insurance Requirements for Third Party Liability	Number of Tiers of Licensee Government Third Party Risk Sharing	Launch Licensee's Required Amount of Third Party Liability Insurance	Government Supplied Third Party Liability Indemnification
Australia	No, but foreign interest (foreign commercial)	Yes	2	MPL, similar to U.S. method	No Limit
Brazil	Under development VLS (government)	Draft	2 (Proposed)	Not Specified (but launch risk-based)	Unknown
China	Yes, Long March (government)	Yes	2	\$100 million (client can request another \$300 million)	No Limit

<sup>163</sup> For detailed information on the liability regime of these countries, see *Annexes 1 to 18, supra* note 80, at ch. 4.

<sup>164</sup> All data from the table was adopted from Table 4-4 of the AST report on risk sharing liability, *LIABILITY RISK-SHARING REGIME, supra* note 98, at 4-13.

Europe (ESA)	Yes, Ariane (government)	Yes	2	\$53 million at current exchange rate (400 million French francs)	No Limit
India	Yes, GSLV (government)	Yes	2	Not Specified	No Limit
Israel	Under Development Shavit (commercial)	No	N/A	Not Specified	None
Japan	Yes, H-IIA (government)	Yes	2	\$50 million or \$200 million (depending on launch vehicle)	No Limit
Russia	Yes, Cosmos, Dnepr, Rockot, START, Soyuz, Zenit, Proton, Molniya, Tsyklon, Strela (government)	Yes	2	\$80 million to \$500 million (depending on launch vehicle)	No Limit - By contract only
South Africa	No	Yes	1	Not Specified	None
Sweden	No	Yes	2	Not Specified	None
Ukraine	No, but affiliated with foreign ventures - Zenit (commercial)	Yes	N/A	Not Specified	Not Specified
United Kingdom	No	Yes	1	\$142 million	None
United States	Yes, Atlas, Delta, Minotaur, Taurus, Pegasus (commercial) Athena	Yes	3	MPL (but not more than \$500 million). Current licensed ELVs have MPLs of from \$0.25 million to \$261 million (Delta IV)	\$1.5 billion above the MPL (as adjusted post-1988 inflation)

ESA = European Space Agency; MPL = maximum probable loss; ELV = expendable launch vehicle; GSLV= Geostationary Launch Vehicle; VLS = Vehiculo Lancador de Satelites; N/A=Not available. All amounts in USD, unless specified.

Table 1 illustrates that the United States is the only State with a three-tier system for third party liability, making it the most complex system. Additionally, the United States is the only State with an expiration date and a cap for government indemnification, which affects the United States' competitiveness. On the other hand, Australia and the United States are the only States in which the required amount of insurance is based on MPL. This is advantageous because it provides a flexible way of determining the insurance amounts based on the type of operations conducted under the license. This flexibility is an excellent way to incorporate RLVs into the current risk-sharing regime. Finally, under some of the liability regimes, notably the United States and Australia, steps have been taken to incorporate the RLV into the current ELV regime. Although this seems like a logical step, it only impacts orbital RLVs. They will have operations similar to ELVs, with the difference that they can re-enter the Earth's atmosphere to be used again. Since suborbital RLVs operate differently, they will be examined in the next section as to the viability of incorporating them into the current aviation liability risk regime.

#### *F. International Air Carrier Liability and the Reusable Launch Vehicle*

The Montreal Convention<sup>165</sup> will be in force when RLVs begin operation.<sup>166</sup> Under the Montreal Convention, the liable

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<sup>165</sup> Montreal Convention, *supra* note 7.

<sup>166</sup> "Warsaw system" refers to the Convention for the Unification of Certain Rules Relating to International Carriage by Air and all its protocols, additional protocols and agreements. Convention for the Unification of Certain Rules Relating to International Transportation by Air, opened for signature Oct. 12, 1929, 49 Stat. 3000, 137 L.N.T.S. 11. This system was replaced by the Convention for the Unification of Certain Rules Relating to International Carriage by Air, 28 May 1999, (1999 Montreal Convention), which incorporates all of the protocols, additional protocols and agreements of the Warsaw System. Montreal Convention, *supra* note 7. The Montreal Convention entered into force on November 4, 2003 and as of July 10, 2005, there were 65 parties to the Convention. For list of parties to the convention, see <http://www.icao.int/icao/en/leb/mtl99.htm> (last visited July 10, 2005). For more on the new Montreal Convention see Amana, *supra* note 105.

party is the operating carrier because liability arises from a contract in which the carrier has the obligation to transport passengers in a safe manner.<sup>167</sup> The State where such airline is registered is never held liable. This principle contrasts sharply with the one contained in the Liability Convention regarding space objects, where liability is placed upon the launching State of the space object and no contractual relationship is required.<sup>168</sup> Additionally, the type of liability under the Montreal Convention is strict liability, whereas under the Liability Convention it is a mix of absolute and fault liability.<sup>169</sup> Finally, the Montreal Convention is applicable to international carriage by air, whereas the Liability Convention applies only to the launching of space objects.<sup>170</sup>

The two drastically different regimes raise two questions. First, which applies to RLVs? Second, can the principles of the aviation liability regime be applied to them? There cannot be a definitive answer because there are insufficient experience, statistics and data regarding suborbital RLV performance. However, some theories can be posited. Following the theory that the Liability Convention would only be applicable to orbital

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<sup>167</sup> Article 17 of the Montreal Convention stipulates, "[t]he carrier is liable for damage sustained in case of death or bodily injury of a passenger upon condition only that the accident which caused the death or injury took place on board the aircraft or in the course of any of the operations of embarking or disembarking." Montreal Convention, *supra* note 7, at art. 17. Thus, the liability is imposed upon the carrier and not the State. It is interesting to note that the term "bodily injury" is defined in the United State's regulations as, "physical injury, sickness, disease, disability, shock, mental anguish, or mental injury sustained by any person, including death." 14 C.F.R. § 440.3(a)(1) (2000). In the definition, mental anguish is included as being a form of bodily injury, an interpretation that caused much litigation under the Warsaw system, because the term bodily injury was never defined, not even in the new Montreal Convention of 1999. Maybe, in the future, International Public Air Law attorneys can borrow from these regulations, at least as a parallel or example in the United States, in order to support their views or influence a judicial decision.

<sup>168</sup> Liability Convention, *supra* note 4, at arts. II - V.

<sup>169</sup> The Liability Convention Articles II and III clearly establish both types of liability. *Id.* at arts. II - III. The strict liability in the Montreal Convention arises from the contract of carriage where the general rule is duty of care. See *supra* section III.C, for more on the types of liability.

<sup>170</sup> See Liability Convention, *supra* note 4, at arts. II - III. See also Montreal Convention, *supra* note 7, at art. 1.