the industry. Finally, while national insurance requirements for future suborbital RLVs are adequate for the time being,[178] these vehicles might see a rapid development. It would be wise if we decide in a legal sense early on where we are going to place these vehicles before they start flying across national borders, which inevitably will bring liability claims arising out of incidents and accidents related to the operations of these vehicles.

IV. CONCLUSIONS AND RECOMMENDATIONS

The best method for classifying RLVs is to divide them into two categories: orbital and suborbital. Orbital RLVs would be governed under the space law regime. Suborbital RLVs would be governed by the air law regime, with the addition of some major amendments, and with a transition period during which they would be treated under standards specially designed for them.

The transition period would calm the concerns of suborbital RLV investors who are concerned that the FAA's Office of Regulation and Certification, and not the AST, would obtain jurisdiction over such vehicles. On July 24, 2003, in a Joint Hearing of Congress on Commercial Human Space Flight before the Subcommittee on Space and Aeronautics, Dennis Tito testified, "[a]s far as sub-orbital space flight, we don't know who will regulate us. And it looks like the FAA might be involved in regulating us, at least on the aviation side, and that is very, very scary. The third area that I think is important is that there should be a clear distinction between the Office of Commercial Space Transportation and the aviation side of FAA, because if the aviation side of FAA gets involved, we're going to go on to a bureaucratic deadlock that's going to go beyond my life expectancy,

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[178] In the United States, a recent study on liability risk sharing regimes found the current U.S. liability regime "adequate". According to the AST, "The current liability risk-sharing regime for commercial space transportation is judged to be adequate based on historical acceptability of statutory risk allocation, including risk-based insurance requirements; support of U.S. obligations under relevant treaties; and the ability of the U.S. launch industry to compete for a share of the commercial space launch market." LIABILITY RISK-SHARING REGIME, *supra* note 98, at 10-3.

and, therefore, be very difficult to invest." [179] In the same hearing Elon Musk testified, "We recommend reaffirming the authority to the AST office of the FAA as the primary regulatory agent for space vehicles." [180]

Their concern is that if the FAA Office of Regulation and Certification, which has dominion over the certification of commercial and experimental aircraft, obtains jurisdiction over suborbital RLVs, it will apply the same standards used for aircraft in terms of safety and liability. This "would ensure that commercial space flight never gets off the ground."[181] Suborbital RLVs in the United States should be under AST jurisdiction, even after the initial transition period. AST has the experience and personnel to deal with these vehicles, which in the beginning would be similar in risks and operations to current ELVs. The same should be for other States that have established similar laws and offices for the regulation of space activities.

On the other hand, some members of the emerging space tourism industry, an industry that will initially depend on suborbital RLVs, think these vehicles should never be treated as aircraft. Jeff Greason, president of XCOR Aerospace, has gone a little further and has asked the United States Congress to "shield the fledgling industry from excessively burdensome regulation, establish a formal definition of suborbital rocket that makes clear they are not airplanes, and affirm an individual's right to waive liability before becoming a passenger of one of the planned services."[182] However, it is not necessary to go so far in order to protect the suborbital RLV or space tourism industry while it develops. For example, the airline industry was protected internationally against liability claims. From its be-

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[179] *House Science Subcommittee on Space and Aeronautics and Senate Commerce, Science, and Transportation Subcommittee on Science, Technology, and Space, Joint Hearing on Commercial Human Spaceflight*, 108th Cong. 18 (2003) (statement of Dennis Tito) [hereinafter *Joint Hearing on Commercial Human Spaceflight*]. *See also*, Brian Berger, *Dennis Tito Ready to Invest in Suborbital Rocket, But Wary of Government Regulators*, SPACE NEWS (July 24, 2003), *at* http://www.space.com/missionlaunches/tito_regulations_030724.html (last visited June 6, 2005).

[180] *Joint Hearing on Commercial Human Spaceflight*, *supra* note 179, at 22.

[181] *Id.* at 27.

[182] *Id.*

ginnings through today, it did not have to go as far as waiving complete liability for passenger claims against airlines for accidents in international travel.

Manufacturers and operators of suborbital RLVs should be held liable for damage or injury caused to passengers, but liability should be limited, not waived, as the industry develops. A good precedent is establishing strict liability for the emerging airline industry under the provisions of the Warsaw Convention. Similar provisions could be established for suborbital RLVs used in space tourism. Alternatively, these vehicles can be incorporated into the international air law liability regime, protecting the industries while they grow and develop.

On the boundary issue, the effective approach is the most practical way to resolve this issue. Under this approach, unlike the functionalist or spatialist approaches, both air and space law regimes are maintained without establishing a defining line between airspace and outer space. For suborbital RLVs, the approach means that these vehicles would fall under the regime of air law. These vehicles will be used for space tourism, sounding, and for high-speed transportation of people and cargo between two points on Earth, meaning their effects or purposes are those of a high speed, high altitude aircraft. For orbital RLVs, this approach means they would fall under the regime of space law because their effect or purpose is that of a spacecraft, carrying cargo and people between earth and space.

For registration and certification issues, orbital RLVs should remain within the regime of space law. Space standards similar to the international SARPs contained in the Annexes to the Chicago Convention should be established for these vehicles and all other space vehicles or objects. The Registration Convention should be amended to accommodate orbital RLVs, and a definition of space object should be adopted which would include these vehicles. Suborbital RLVs should be included under the regime of air law. The international framework for these vehicles should be created under the auspices of the ICAO by either amending existing conventions or establishing new ones.

In terms of national liability and risk management of orbital RLVs, the current system of insurance requirements or financial reserves for States involved in space launches should

be maintained. The operations of these vehicles are going to be very similar to the operations of ELVs. The current systems are appropriate. For international liability, the Liability Convention should be amended to include orbital RLVs. In the case of national liability for suborbital RLVs, the current national systems of risk management and liability should also be maintained, but only during the transition period. In the long term, it would be appropriate to incorporate these vehicles into the regime of air law once they become commonplace and operate as safely as conventional aircraft. For international liability of suborbital RLVs, the Montreal Convention should be amended to include these types of operations.

Finally, scientists, engineers, policy makers, and law experts should work together both at ICAO and at UNOOSA to begin establishing rules and parameters defining the different types of RLVs. Differentiating orbital and suborbital RLVs would resolve much of the debate of where to place these vehicles. This distinction is a logical way to determine the applicable regime for each of the different types of RLVs. Nevertheless, one thing is certain; RLVs are going to be part of our near and far future and just like every other activity that in which humankind has been engaged, this one will also need regulation. Ideas and knowledge must be exchanged so one day the dream of one ancient Chinese official can be fulfilled and "boldly go where no one has gone before."[183]

[183] Gene Roddenberry, creator of "Star Trek", coined this famous phrase in his popular science fiction series.

THE EVOLUTIONARY STAGES OF THE LEGAL SUBCOMMITTEE OF THE UNITED NATIONS COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE (COPUOS)

Sergio Marchisio[*]

I. GENERAL

International space law has undergone a deep evolution since it first began in the 1950s. Space activities and globalisation now underline a profoundly changed legal framework. On the one hand, we have seen new paths and inputs; the evolution of space activities in a number of fields emerging from scientific and technological development; an increased number of Nation-States involved in space activities; the commercialisation and privatisation of some space activities; and partnerships between and among Nation-States, international organisations and private entities.[1] On the other hand, we have also seen the consolidation of new sectors, where space activities have an impact: protection of the environment and natural resources management; prevention of natural and human-induced disasters; global communications; and, space industry development in a drive towards growth.[2]

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[1] *See International Organisations and Space Law: Their Role and Contributions*, 3 PROC. ECSL COLLOQUIUM 6-7 (Noordwijk, 1999).

[2] On the beginning of space law, *see* Eilene Galloway, *The History and Development of Space Law: International Law and United States Law*, VII ANNALS OF AIR AND SPACE LAW 295- 317 (1982).

To be sure, the world is vastly different today than it was when the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS), was first established. At that time, the complex issues that had to be resolved had the additional complication of the intense Cold War rivalry. It is to be recalled, in fact, that shortly after the launching of the first artificial Earth orbiting satellite, the Soviet *Sputnik I*, the Permanent Representative of the United States to the United Nations wrote to the Secretary-General, requesting that an item, "Programme for International Co-operation in the Field of Outer Space", be placed on the 1958 General Assembly agenda. The letter called for the Assembly to establish an *ad hoc* committee to make the necessary detailed studies and recommendations as to what specific steps the Assembly might take to further humanity's progress in outer space and to assure that outer space [would] be used solely for the benefit of all humankind.

On 13 December 1958 the U.N. General Assembly established the UNCOPUOS, as an *ad hoc* body with eighteen members.[3] One year later, on 12 December 1959, the General Assembly gave it the status of a permanent body and reaffirmed the mandate given to it by U.N. member States.[4] From a juridical point of view, the UNCOPUOS was qualified as a standing subsidiary organ of the General Assembly, in accordance with the Charter of the United Nations (U.N. Charter).[5]

In considering the legal nature of the UNCOPUOS, two elements are indeed to be taken into account. Firstly, the Committee was not established as an independent international organization founded on a treaty, like the specialized agencies of the United Nations, but as an organ of the General Assembly. Sec-

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[3] Question of the Peaceful Use of Outer Space, G.A. Res. 1348, 13th Sess. (1958) [hereinafter G.A. Res. 1348], *available at* http://www.un.org/documents/ga/res/13/ares13.htm (last viewed July 17, 2005).

[4] International Co-operation in the Peaceful Uses of Outer Space, G.A. Res. 1472, 14th Sess. (1959), *available at* http://www.un.org/documents/ga/res/14/ares14.htm (last viewed July 17, 2005).

[5] "Such subsidiary organs as may be found necessary may be established in accordance with the present Charter." Charter of the United Nations, June 26, 1945, art. 7(2), 59 Stat 1031 [hereinafter U.N. Charter]. "The General Assembly may establish such subsidiary organs as it deems necessary for the performance of its functions." *Id.* at art. 22.