

by Michael J. Listner

# The Legal Frontier of Commercial Space Regulation

**T**he advent of commercial space, in particular space tourism via sub-orbital flights, is causing a paradigm shift from government spaceflight activities. This transition, which has found support in the United States, brings legal and policy challenges that will test the current body of international and domestic space law and influence its evolution.

Frans G. von der Dunk, Harvey and Susan Perlman, Othmer Professor of Space, Cyber and Telecommunications Law LL. M. Program at the University of Nebraska-Lincoln, College of Law, is a worldwide authority on legal issues of commercial space. Professor von der Dunk is also the administrator of Black Holes BV, a firm he founded in 2007 to offer consultation on matters regarding international space law and policy.

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## The Issue of Liability

**T**he first wave of space tourism came with the Russian Federation sale of Soyuz capsule seats for trips to the International Space Station brought the first wave of space tourism. These flights have been infrequent, and do not present many legal issues except for perhaps the insistence by NASA that tourists visiting the ISS waive liability against the United States for any inju-

ries they might sustain within modules registered to the United States.

More controversial is the emerging commercial sub-orbital flight industry, promoted by companies like Virgin Galactic. Unlike tourist flights

to the ISS, suborbital flights will be more frequent, and as such will likely present more legal and policy problems. One significant legal challenge is liability. Startup companies such as Virgin Galactic face the threat of substantial liability, given the high-risk nature of the suborbital space flight, a threat that could very well prevent companies from getting off the ground because of exorbitant insurance costs.

A possible solution is the approach taken by the Warsaw Convention at the beginning of the airline industry. The Warsaw Convention proposed to ▶▶



Virgin Galactic's SpaceShipTwo will enable a new and potentially controversial era in commercial spaceflight.

Credits: Virgin Galactic/Mark Greenberg



Artist's conception of Virgin Galactic's passengers. The legal status of space tourists, and whether or not they should be granted the title of astronaut, is still undefined.

Credits: Virgin Galactic

insulate the airline industry from liability, allowing it to move past its infancy. Similarly, the commercial space industry in the United States is finding havens with many states including Virginia, Texas, and Florida, which passed limited or no liability statutes for commercial space flight companies doing business within their jurisdictions.

Professor von de Dunk notes however, that a condition of limited liability will not be granted to commercial space flight companies indefinitely. He foresees liability as an evolutionary issue, where commercial space flight companies are initially granted a non-liability regime, and later transitioned gradually to a regime of liability. This regime will evolve as the industry matures and grows, and with it the regulatory environment and the consumers' demand that commercial operators accept more liability for their operations. However, even with no liability or limited liability, commercial space operators are not guaranteed that an incident during operations will not result in a lawsuit. It is likely that an incident resulting in injury or death of a tourist will cause lawyers to test the legal validity of no liability or limited liability waivers in the courts of the United States.

## Regulation of the Commercial Space Industry

Another area of concern is regulation of the commercial space industry. Commercial space in the United States falls under the regulatory author-

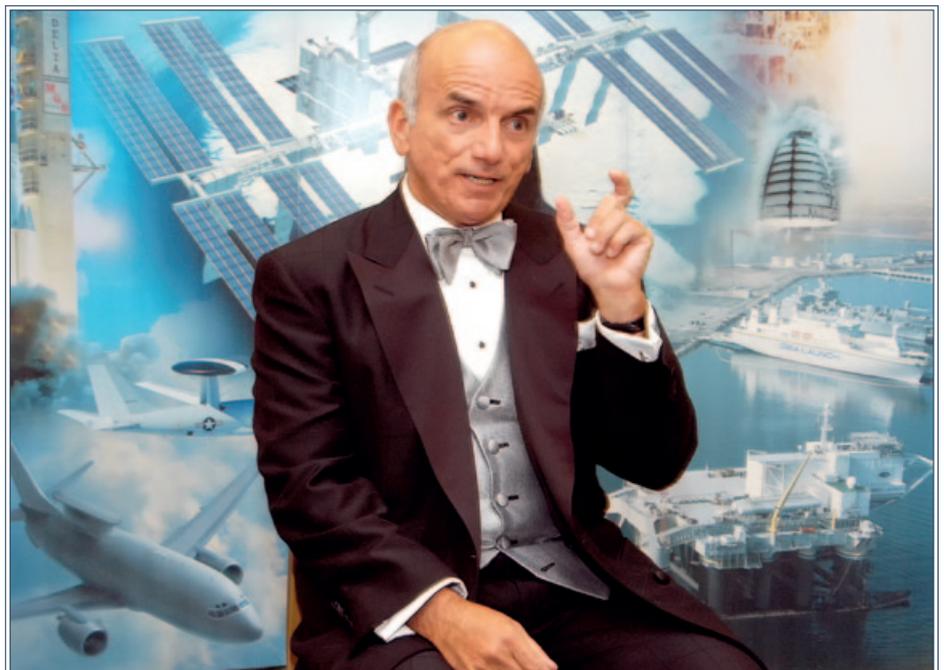
ity of the Federal Aviation Administration (FAA). The FAA's involvement with commercial space began with the passage of the Commercial Space Launch Amendments Act of 2004 (CSLA), which established a protocol of "informed consent" for spaceflight passengers, and created a new experimental launch permit for test and development of reusable suborbital launch vehicles.

However, some representatives of the commercial suborbital and orbital space flight industry were concerned that a regulatory framework for commercial human space flight could be detrimental to the industry. This concern was not unanimous as many in the industry, including commercial space-

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flight advocates, insurers, suppliers and infrastructure institutions responsible for spaceports, felt that a regulatory framework would be an important prerequisite to commercial human spaceflight activities. Congress agreed with this view and included a provision within the CSLAA that limits the ability of the FAA to promulgate safety regulations for commercial human spaceflight vehicles. The provision was slated to end December 23, 2011, but Congress granted an extension until 2015.

While the provision in CSLAA prevents the FAA from issuing new safety regulations, it does not prevent the FAA from actively monitoring commercial human spaceflight activities, nor does it prevent the FAA from performing other duties granted to it by the CSLA. Despite the extension of this moratorium, it is apparent that the commercial ►►



Dennis Tito, the first paying space tourist to fly to the ISS, pictured here at the 40th Space Congress in 2003. - Credits: NASA

human spaceflight industry will not be shielded forever from the FAA's scrutiny. Professor von der Dunk feels that when the FAA regains full authority to issue safety regulations, it will be keen to maintain a balance between regulating the operators and safety, instead of proceeding in an overly burdensome manner.

## The Status of Passengers Flying into Outer Space

Another area of legal and policy issues identified by Professor von der Dunk is the status of passengers flying into outer space. To be recognized as an astronaut, the current regime of international space law poses three conditions: a person must be in an object located in space, conducting activities for the benefit and in the interests of all countries, and he must be regarded as an envoy of mankind. A person who meets this definition has certain legal rights, most notably the right of being rescued and returned to his nation of origin in case of distress in accordance with the Rescue Agreement of 1968.

The upcoming generation of space tourists, however, may not meet the

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legal definition of astronauts primarily because they are in space for leisure. Professor von der Dunk observes that aside from not meeting the legal definition of astronaut, there is also the further distinction of whether future participants in commercial space activities are acting as flight crew or space flight participants, and whether they will be afforded the rights of astronauts under current international law. He speculates that even though future commercial space participants may not technically qualify under current international law, basic humanitarian rights, which constitute customary law outside of the treaties, will persuade nations to come to the rescue also of these individuals as appropriate.

## A Paradigm Shift

While the paradigm shift of commercial space has the support of the government of the United States, other nations, including the European Union (EU) members, have expressed mixed

feelings. According to Professor von der Dunk, the culture of the EU is less inclined to allow commercial enterprise to enter into government controlled activities. On the other hand, the EU and its members acknowledge the potential benefits that commercial space could offer, and so he expects that the EU will observe the United States to evaluate the development of commercial space before venturing into its own program.

If and when the EU will engage in commercial space, it will need laws and regulations to address activities. To that end, Professor von der Dunk comments that from the viewpoint of the EU, there are two levels to regulating commercial space. First, the EU sees commercial space law as already being regulated by the current international space law treaties, including the Outer Space Treaty of 1967 and the Liability Convention of 1972. Second, at the domestic level, the EU may follow to a certain extent the United States' approach, including legislation and FAA regulations, like Sweden was considering for its own commercial space industry.

## Final Remarks

International law concerning commercial space could prove more problematic than domestic law. Professor von der Dunk notes that it is too early to consider a legally-binding treaty because there is a lack of experience with commercial space flight. However, customary international law for commercial space flight could provide legal precedent based on practices and experience from the commercial space activities of the United States.

Whether commercial space will live up to its expectations remains to be seen. What is certain is that the legal and regulatory environment will challenge and evolve the current body of space law and regulation to meet demands placed upon it. Whether that evolution will meet the demands created by commercial space remains to be seen.

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A Soyuz capsule upon landing. Will the Rescue Agreement apply for space tourists making an emergency landing in a foreign country? - Credits: NASA