

## DOES THE RESCUE AGREEMENT APPLY TO SPACE TOURISTS

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### **ABSTRACT**

The Rescue Agreement does not address the issue regarding space tourists. This is because the persons who could travel to outer space were only astronauts or personnel of spacecrafts at the time when the Agreement was drafting. The question whether the Rescue Agreement can apply to space tourists will arise when commercial human spaceflights are available. The paper firstly examines the meaning of “astronauts” and “personnel” in the Outer Space Treaty and the Rescue Agreement to see if space tourists will fall into these categories. The paper then analyzes why the Rescue Agreement will not apply to the space tourists without further ado. Finally, it discusses the possibility of a broad interpretation of the Rescue Agreement in accordance with Vienna Convention on the Law of Treaties to include space tourists in the category of “personnel of spacecrafts” so that the Rescue Agreement can apply to space tourists.

### **INTRODUCTION**

When Russian Space Agency sending individuals to International Space Station (ISS) and the US encouraging commercial space flights by either the governmental legislation<sup>1</sup> or prizes made available to the public by various organizations,<sup>2</sup> China also has space plans to steadily develop space technology including manned spaceflights. In 2003, China became the

third country – after Russia and the US – to send an astronaut Yang Liwei into Earth orbit. In 2007, China launched a space probe to orbit the Moon, which has paved the way for sending Chinese to the Moon. Recently, news reported that preparations of the first China-made space station are well under way for a launch.<sup>3</sup> “Once the technology was more mature, more reliable”, Mr. Sun Laiyan, the chief of China National Space Administration, said that there was a possibility of having “not only male tourists, but female too”, for a space flight.<sup>4</sup> Actually, foreign space travel agencies have already come to China to explore the market. A US space adventure company and a Hong Kong space travel agency announced in 2005 that they would introduce the suborbital tour package to people in Guangzhou.<sup>5</sup> Mr. Eric Anderson, Chairman of Space Adventure, voiced his plans for Chinese space tourism when he attended a conference in China in April 2011.<sup>6</sup> Two Chinese tycoons have already paid Virginia-based Space Adventures and British-based Virgin Galactic respectively for taking suborbital space flights.<sup>7</sup> More Chinese express their interests in traveling aboard a spaceship. As American private launch enterprises have been endeavored to develop reusable launch vehicles which may offer more affordable prices to space tourists, Mr. Anderson expects that about 50,000 or 5 million tourists will be sent into outer space within 50 years,<sup>8</sup> while industry forecasters predict nearly 13,000 passengers may participate in space tourism by

2021.<sup>9</sup>

Despite the long-term commercial possibilities of human space flights remains to be seen, law and relevant regulations concerning space tourism in both international and national levels need to be developed and applied. Space lawyers have been considering and discussing many legal issues such as applicability of air or space law, authorization, registration, licensing, liability for space tourists and third parties, space insurance, status of space tourists, criminal jurisdiction, celestial property rights and safety etc.<sup>10</sup> This paper only focuses on the legal issue whether the Rescue Agreement will apply to the space tourists.

### **“ASTRONAUTS”, “PERSONNEL” AND “SPACE TOURISTS”**

Space travel era started with the activities carried out by governmental organizations and professional staff. Both the Outer Space Treaty and the Rescue Agreement use “astronauts” and “personnel” to refer to these persons.<sup>11</sup> However, there are no definitions of the two terms in these international instruments. The question whether space tourists fall into the categories of “astronauts” or “personnel of a spacecraft” so that they will enjoy the rights conferred by the Rescue Agreement has been debated among space lawyers.

Literally, the terms “astronauts”, “personnel of a spacecraft” and “envoy of mankind” have different meanings. According to Professor Hobe, “‘astronaut’ has a more explorative or scientific meaning, ‘personnel’ has a more functional meaning, and ‘envoy of mankind’ has a more humane meaning.”<sup>12</sup> Different approaches towards the legal status of space tourists come from the different interpretations of these terms. Consequently, some commentators believe that space tourists could be regarded as “astronauts”

or “personnel of a spacecraft”, and others doubt it.

### **Astronauts in the Outer Space Treaty**

To interpret these terms, one must bear in mind the circumstance under which the concerned treaties were drafted.<sup>13</sup> “Astronauts” is used in Article V of the Outer Space Treaty and in the title and preamble of the Rescue Agreement. The plain meaning of “astronaut” is “A person trained to make rocket flights into outer space” in Webster’s.<sup>14</sup> This definition of “astronaut” contains two elements for a person to be qualified as an astronaut: first, one has been professionally trained as such. Second, he/she operates a spacecraft going on a space mission. In accordance with this definition, some scholars construe the term in a narrow sense: only those persons who pilot or operate a spacecraft are considered as astronauts.<sup>15</sup> Therefore, persons like space engineers and scientists etc. are not astronauts.<sup>16</sup> Others construed the term in a broad way. According to them, a person who is employed on a spacecraft on a mission and who is serving some purpose in aid of the voyage,<sup>17</sup> such as an engineer and a scientist capable of carrying out scientific experiments and of knowing his and his colleagues’ work in the event of a replacement shall be considered as an astronaut.<sup>18</sup>

Article V of the Outer Space Treaty confers status of “envoy of mankind” to astronauts. “Envoy” has two meanings: “1, A high-ranking diplomat sent to a foreign country to execute a special mission or to serve as a permanent diplomatic representative”; “2, A messenger or representative”.<sup>19</sup> Astronauts as “envoy of mankind” certainly do not have the same status as diplomats in international relations; therefore they do not enjoy the diplomatic privileges and immunities. They are representatives of mankind sent to outer space or universe. Some legal writers consider “envoy of mankind” only has

symbolic value, from which no specific legal rights or duties are resulted.<sup>20</sup> Others recognize the importance roles that astronauts play in the “development of mankind”.<sup>21</sup> In fact, astronauts are heroes bravely entering a world that had never been touched by mankind. In doing so, astronauts have faced great risks that no human beings had experienced before. States honor astronauts as “envoy of mankind”, on the one hand, to acknowledge their contribution to the development of mankind and to encourage their pioneer spirit, and on the other hand to protect them against high risks. The principle and the obligation for states to render astronauts in distress all possible assistance are placed immediately after the expression that the states shall regard astronauts as envoy of mankind.<sup>22</sup> This implies that astronauts being considered as envoy of mankind has some legal value. According to one commentator, astronauts are defined as “envoy of mankind” “in order not to deprive the subjects of their nationality and to allow them to acquire a super-national status”.<sup>23</sup> During the negotiation of the Rescue Agreement, “envoy of mankind”, in the mind of several delegates, would also mean to exclude astronauts “engaged in military activities which were threat to world peace”.<sup>24</sup>

### **“Personnel” in the Outer Space Treaty**

“Personnel” are also used in Article VIII of the Outer Space Treaty. This article concerns jurisdiction and control of the launching state over any personnel onboard an object launched into outer space. Why “personnel” instead of “astronauts” is used in this article and whether the two terms have the same meaning?

“Personnel” is a word used in daily life. It generally refers to “people employed in an organization or engaged in an organized undertaking”.<sup>25</sup> Therefore, the interpretation of this term to include “only the persons who exercise certain functions with respect to the

operation of the space vehicle”<sup>26</sup> seems more acceptable. At the time when the Outer Space Treaty was drafting, all people onboard spacecrafts were assumed to work for space flight missions and not for their private purposes. They were astronauts in either a narrow or a broad sense. “Astronauts” in Article V of the Outer Space Treaty emphasizes the important status of astronauts in outer space and calls for all possible assistance to them when their lives are in danger. The purpose of Article VIII is to establish jurisdiction and control over the object and persons thereof when they are in outer space. Whatever status of the persons onboard a spacecraft is not important. Therefore, “personnel” was used to properly reflect the then situation, namely, astronauts in a narrow or broad sense were the only persons to be sent into outer space. Space tourism that remains to be seen today could not be considered by the Treaty drafters decades ago.

### **“Personnel” in the Rescue Agreement**

“Astronauts” is used in the title and preamble of the Rescue Agreement, while “personnel” is used in the operative part of the Agreement. Questions may arise whether they are used in this way on purposes and whether there are different meanings between the two terms. Before answering the questions, it is useful to recall how the text of the Agreement was drafted.

USSR and USA were the first states capable of launching manned spaceflights. Both of them initiated the international agreement on the rescue of astronauts and spacecrafts making emergency landings by proposing a draft text respectively in 1962.<sup>27</sup> However, most non-space faring countries were more concerned about drafting a convention on international liability for damage caused by space objects. So, despite the Legal Subcommittee tentatively agreed on the text of a preamble and three

articles of a treaty on assistance and return of astronauts in 1964,<sup>28</sup> it was not until 1967 when two accidents occurred causing the death of three US and one Soviet astronauts,<sup>29</sup> a need for an international agreement on the rescue and return of astronauts became urgent.

“Astronauts” and “the crews of spaceships” were used in the USSR’s proposals, while USA used the term “personnel of space vehicles/spacecrafts” in its proposals. Similar terms such as “personnel of a spacecraft” appeared in the Australia and Canada joint proposal and “personnel of a space object” in Japan’s proposed amendment.<sup>30</sup> Interestingly, France’s revision of the draft Agreement proposed that “Each Contracting Party shall facilitate the departure from its territory of persons on board a spacecraft which has made an emergency landing” (emphasis added).<sup>31</sup>

Questions arose whether the Agreement should contain two different expressions: “the crew of a spaceship” and “astronauts” as they were in the Soviet’s draft; and whether all the members of the crew of a spaceship are astronauts.<sup>32</sup> Although whether and how the questions were discussed are unknown to the author, Italian delegation’s explanation some years later can shed some light on the answer to the questions. Italy used the term “personnel of a spacecraft” in its proposal. It explained that the proposal “refers to personnel (or crew) and not specifically to astronauts, since everyone on board has a right to assistance for humanitarian reasons”.<sup>33</sup> In the view of Italy, “personnel” and “crew” are synonyms. The term “crew” can be understood as “all the people working on a ship, plane etc.”<sup>34</sup> Therefore, the “personnel” has the same meaning as the “astronauts” in a broad sense. Although Italy proposed that everyone on board has a right to assist, at the time when the Rescue Agreement was drafting, only crew members and not passengers were

eligible to take a space flight.

The final text of the Rescue Agreement chose the term “personnel”. It neither protects a narrow group of astronauts, nor imposes obligations on states to provide all possible assistance to a broad category of persons onboard. Therefore, the Rescue Agreement clarified the “personnel of a spacecraft” in the Rescue Agreement, as professor Stephen Gorove correctly observed,

to include not only astronauts, that is people who are trained to pilot spacecraft but also other persons assigned to and accompanying the spacecraft, such as a scientist or physician on a space mission. On the other hand, the term would not appear to include regular passengers..., since such persons would not form normally under the category of “personnel”.<sup>35</sup>

### **Space Tourists or Passengers**

The coming space tourism is generally understood as “providing services for humans to access and experience space for adventure and recreation”.<sup>36</sup> A space tourist refers to “a person who travels to and experiences space for adventure and recreation”.<sup>37</sup>

Space tourists do not fit the definition of astronauts because, first, they are not highly trained as such. Second, they have nothing to do with the operation of a spacecraft. Third, they travel into outer space not for the benefit and development of mankind, but for their own pleasure.<sup>38</sup> The obvious non-professional nature of the space tourists supports the view that space tourists are not astronauts.<sup>39</sup>

With respect to the proposition that since space tourists are not assumed to work on a space mission, they would also not fall into the category of “personnel”,<sup>40</sup> opponents argued that Article VIII of the Outer Space Treaty establishes jurisdiction and control of state of registry over any personnel on board a space

object. The drafters' intention is clear not to exempt passengers from the jurisdiction and control of the state of registry. If the "personnel" in the Outer Space Treaty refers to all persons in outer space, the term in the Rescue Agreement should contain the same ordinary meaning.<sup>41</sup> However, space tourists were even not in the drafters' imagination at the time when the Outer Space Treaty and the Rescue Agreement were drafting. It is unreasonable to gather that the drafters intended to include space tourists in the category of personnel of spacecrafts in the Rescue Agreement.

### **APPLICABILITY OF THE RESCUE AGREEMENT TO SPACE TOURISTS**

Ideally, as the delegation of Italy said 44 years ago that "everyone on board has a right to assistance for humanitarian reasons", however, space lawyers doubt whether the Rescue Agreement should apply to the space tourists or spaceflight participants without further ado.<sup>42</sup> Manfred Lachs, the late judge of the ICJ, and Dr. Vereshcherin, the former USSR Vice President of Intercosmos, believed that when the regular space journeys occur, greater clarification or creating a special legal status for passengers might be necessary.<sup>43</sup>

There are arguments favoring that the Rescue Agreement should apply to the space tourists. In addition to the reason that space tourists can be included in the category of astronauts or personnel of spacecrafts, it is also because, according to a commentator, the space law treaty language "clearly encompasses both government and commercial operations".<sup>44</sup> In this regard, one should not ignore the conditions set forth for commercial operations. Article VI of the Outer Space Treaty also clearly stipulates that the activities carried out in outer space and on celestial bodies by non-governmental entities (private enterprises) must be authorized and continuously supervised by the appropriate state.

The appropriate state shall ensure that the entities will carry out space activities in accordance with the provision of the Outer Space Treaty. Incompliance with the Outer Space Treaty in the course of carrying out space activities by non-governmental entities shall incur international responsibility of the state. This Article reflects the theory of state responsibility in international law. Article 8 of the Draft Articles on Responsibility of States for Internationally Wrongful Acts reads that "The conduct of a person or group of persons shall be considered an act of a State under international law if the person or group of persons is in fact acting on the instructions of, or under the direction or control of, that State in carrying out the conduct".<sup>45</sup> Accordingly, when a state authorizes a private entity to carry out space activities, the conduct of the entity shall be attributed to the state. The state shall bear responsibility if the act of the authorized entity violates an international obligation of the state. Therefore, space treaty law does not apply directly to individuals and private entities. On the contrary, it only applies to states. Space activities carried out by private entities are governed by national law, through which a state authorizes and supervises private entities to launch space objects, for instance, or to carry out other space activities.

Another challenge against the proposition regarding the non-applicability of the Rescue Agreement to space tourists is based on sentiments of humanity. It argues that if a commercial spacecraft had an emergency landing, it would be absurd to rescue only pilots and crew members of the spacecraft and leave the passengers in grave danger.<sup>46</sup> However, the drafting history of the Rescue Agreement shows that a number of states did not agree this humane-based argument in the course of discussion of the draft Rescue Agreement, as Prof. Bin Chen observed:

...for humanitarian reasons, they would unhesitatingly give every assistance to astronauts in distress. But this in itself is not an adequate reason why they should enter into legal obligations binding themselves on how they should discharge this essentially humanitarian task.<sup>47</sup>

Eventually, the expression of “envoy of mankind” was considered in the rescue of astronauts or personnel of spacecrafts, to which all states should be committed.<sup>48</sup> Some learned space lawyers remain the same proposition nowadays.<sup>49</sup>

There may be three reasons for states, in particular non-space-faring states, to be unwilling to extend their obligations under the Rescue Agreement to space tourists. First, states agree to provide all possible measures to assist astronauts or personnel of spacecrafts in distress or having emergency landings, because astronauts or personnel of spacecrafts go on a space mission for the benefit and development of mankind. The obligation of taking all possible measures to rescue astronauts are greater than the obligation under Article 25 of the Chicago Convention, which requires only “practicable” assistance by the state on which a landing is made.<sup>50</sup> Unlike astronauts or personnel of spacecrafts, space tourists travel into outer space only for their interests or pleasure just like passengers in commercial aircrafts. Considering the expression of the French delegation during the negotiation of the Rescue Agreement that the Rescue Agreement applied “only to flights that are experimental and scientific in nature”, and that a new treaty would have to be negotiated when such flights may become utilitarian or commercial in character,<sup>51</sup> there is a doubt that States will be willing to render such greater assistance to regular space travelers.

Second, the Rescue Agreement has established an absolute and unconditional obligation to return astronauts or personnel. However, in the

course of the discussions of the Rescue Agreement, France and Austria asserted several times respectively that return of astronauts shall be subject to national legislations concerning, for example, asylum and aliens etc.<sup>52</sup> The possibility that an astronaut might seek asylum in a state on whose territory he has landed was finally viewed as not a real problem because astronauts who really wish to defect would find a more convenient way of doing so.<sup>53</sup> Nevertheless, states may assert that space tourists must be subject to national laws concerning aliens. Therefore, states would not be obliged to return space tourists unconditionally. In addition, whether space tourists must be returned to launching authorities is another question. It may be more convenient to return a space tourist to the representative of the country of his/her nationality or of the country where he/she has a permanent residence.

Third, unlike Article 5 of the Rescue Agreement, which states that expenses incurred in fulfilling obligations to recover and return a space object or its component parts shall be borne by the launching authority, the Rescue Agreement does not include any similar provision concerning expenses incurred in fulfilling obligations to rescue and return astronauts. This is because astronauts are considered as envoys of mankind. Contracting Parties are obliged to fulfill their duties in this respect without any financial claims.<sup>54</sup> According to some commentators, the Rescue Agreement may only reflect the interests of the two superpowers at the time<sup>55</sup> and it is “lack of reciprocal benefit to the non-space power”.<sup>56</sup>

Some scholars suggested a broad interpretation of the Rescue Agreement to include space tourists in the category of “personnel of spacecrafts”.<sup>57</sup> This concerns a question whether the applicable scope of an international treaty can be broadened when a new development has taken place. There is such possibility in

international humanitarian law. For example, the military technology has been rapidly developing. The existing international treaties of war are not capable to prohibit all kinds of new weapons of non-discrimination and massive destruction. The Martens Clause in international humanitarian treaties enables “populations and belligerents [to] remain under the protection and empire of the principles of international law, as they result from the usages established between civilized nations, from the laws of humanity and the requirements of the public conscience.”<sup>58</sup> In the opinion of the ICJ, Martens Clause “has proved to be an effective means of addressing the rapid evolution of military technology.”<sup>59</sup> Therefore, it is also possible to extend the assistance provided by Contracting Parties under the Rescue Agreement to space tourists in case there is a similar clause in space law treaties, in particular the Rescue Agreement.

Another approach is to interpret the terms of “astronauts” and “personnel of spacecrafts” in the Rescue Agreement in accordance with Article 31 paragraph 3 of the Vienna Convention on the Law of Treaties. Article 31 paragraph 3 stimulates that to interpret a treaty, the subparagraphs (a) and (b) shall be taken into account, together with the context:

(a) any subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions;

(b) any subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation;

Since there are no definitions of the “astronauts” and “personnel of spacecrafts” in the Rescue Agreement, it is possible for the Contracting Parties to subsequently make an agreement on the interpretation of these terms to include space tourists or spaceflight participants in the categories of “astronauts” or “personnel of

spacecrafts” so as to extend the parties obligations with respect to the rescue and return of the personnel of spacecrafts to spaceflight passengers. An agreement regarding the interpretation of a treaty or the application of its provisions is an agreement “to clarify the meaning of a treaty or to serve in some other manner as a guide for application”.<sup>60</sup> This agreement must be made between the parties to the interpreted treaty after the treaty was concluded.

For the same reason, broad interpretation of the Rescue Agreement is possible when Contracting Parties’ subsequent practice in the application of the Rescue Agreement establishes their agreement regarding the definitions of “astronauts” and “personnel of spacecrafts” and the applicable scope of the Rescue Agreement. The “agreement” in subparagraph (b) means a concordance held among the parties to the interpreted treaty with regard to its meaning.<sup>61</sup> “Practice” is the sum totals of a number of applications as long as they “establish the agreement of the parties regarding its interpretation”.<sup>62</sup> When the provisions of a treaty are invoked to support a decision or the pleadings of a state in a legal dispute or when the provisions of a treaty are the cause for introducing new national law etc., it can be considered an “application”.<sup>63</sup>

However, up until now, there is no subsequent agreement concluded among parties to the Rescue Agreement regarding the interpretation of “astronauts” and “personnel of spacecrafts” or the application of the Rescue Agreement. There are few practices involving the US national law<sup>64</sup> and intergovernmental agreement on international space station,<sup>65</sup> from which no agreement regarding the definition of astronauts and personnel has been established.

## **CONCLUSION**

Every treaty is concluded under certain circumstance. From the historical intention of the Rescue Agreement drafters, it seems improper to interpret the Rescue Agreement too broad to address the issue regarding the space tourists, which was even not imaged by the drafters during the negotiation of the Agreement. The Rescue Agreement was made especially for astronauts in either narrow or broad sense as they are considered as envoy of mankind. From the sentiment of humanity, everyone on board a spacecraft, no matter what his/her legal status is, has a right to assistance and to be rescued when his/her life is in danger. To make it a legal obligation for states Parties to the Rescue Agreement, the Contracting Parties' subsequent agreement is necessary. This agreement can either be concluded by parties to the Rescue Agreement or established through their subsequent practice in the application of the Rescue Agreement. In a word, Contracting Parties to the Rescue Agreement have the final say on this issue.

#### Notes

<sup>1</sup> The Commercial Space Launch Amendments Act of 2004, H.R.5382, Pub. L. No. 108-492, 108<sup>th</sup> Cong., 2d Sess. See Hughes, Timothy Robert & Rosenberg, Esta, Space Travel Law (and Politics): The Evolution of the Commercial Space Launch Amendments Act of 2004, 31 *J. Space L.* 1 (2005).

<sup>2</sup> Thomas Brannen, Private Commercial Space Transportation's Dependence on Space Tourism and NASA's Responsibility to Both, 75 *J. Air L. & Com.* 639, p.644.

<sup>3</sup> China unveils rival to International Space Station, 26 April 2011, <http://www.guardian.co.uk/world/2011/apr/26/china-space-station-tiangong>, last visit on 17 August 2011.

<sup>4</sup> China Considers Entering Space Tourism Race, Sat, Oct 14, 2006, <http://www.aero-news.net/index.cfm?do=main.activexpost&id=c45cf5c2-f29c-4abd-a9b8-648d55f22424>, last visit on 17 August 2011.

<sup>5</sup> Guangzhou Daily, 3 March 2005.

<sup>6</sup> Chinese Space Tourism in ten years, USD 50 Millions for Two Weeks, 11 April 2011, <http://finance.stockstar.com/MS2011041200000570.shtml>, last visit on 17 August 2011.

<sup>7</sup> Jake Hamilton, Tycoon gets set to blast off, 30 Nov. 2006, [http://www.chinadaily.com.cn/china/2006-11/30/content\\_746476.htm](http://www.chinadaily.com.cn/china/2006-11/30/content_746476.htm), last visit on 17 August 2011.

<sup>8</sup> Supra footnote 7.

<sup>9</sup> Arthur Piper, Barack Obama's Enthusiasm for Expanding the Private Sector's Role in Space Is Timely as Global Regulation Loosens, 64 No. 5 *Int'l B. News* 33, October, 2010, p.29.

<sup>10</sup> See Steven Freeland, Fly Me to the Moon: How Will International Law Cope with Commercial Space Tourism? *Melbourne Journal of International Law*, Vol. 11, 2010; Zhao Yun, Legal Certainty in Outer Space, 74 *J. Air L. & Com.* 959, Fall 2009; Stephan Hobe, Legal Aspects of Space Tourism, 86 *Neb. L. Rev.* 439, 2007; Frans G. von der Dunk, Space for Tourism? Legal Aspects of Private Spaceflight for Tourist Purposes, *Proceedings of the Forty-Ninth Colloquium on the Law of Outer Space* (2006): 18-28. IAC-06-E.6.1.06. Steven Freeland, Up, Up and . . . Back: The Emergence of Space Tourism and Its Impact on The International Law of Outer Space, 6 *Chi. J. Int'l L.* 1, Summer 2005.

<sup>11</sup> "Astronauts" is in Article V of the Outer Space Treaty and in the title and preamble of the Rescue Agreement; "Personnel" is in Article VIII of the Outer Space Treaty and in Articles I-IV of the Rescue Agreement.

<sup>12</sup> Stephan Hobe, Legal Aspects of Space Tourism, 86 *Neb. L. Rev.* 439, 2007, p.455.

<sup>13</sup> The circumstances existing at the time of the conclusion of a treaty is important. See Article 62 of the Vienna Convention on the Law of Treaties.

<sup>14</sup> See Richard W. Scott, Jr., Policy/Legal Framework for Space Tourism Regulation, *Journal of Space Law*, Vol. 28, No. 1, 2000, p.3.

<sup>15</sup> Paul G. Dembling and Daniel M. Arons, The Treaty on Rescue and Return of Astronauts and Space Objects, 9 *William and Mary Law Review*, 630 (1968), p.643.

<sup>16</sup> Zhao Yun, A Legal Regime for Space Tourism: Creating Legal Certainty in Outer Space, 74 *J. Air L. & Com.* 959, Fall 2009, p.978.

<sup>17</sup> Hamllton DeSaussure, Astronauts and Seaman-A Legal Comparison, *Journal of Space Law*, vol.10, No.2, 1982, p.168.

<sup>18</sup> Gabriella Catalano Sgrosso, Legal Status of the Crew in International Space Station , *Proceedings of the Forty-Second Colloquium on the Law of Outer Space* (1999), p.36.

<sup>19</sup> *Black's Law Dictionary*, 9<sup>th</sup> edition, 2009, p.642.

<sup>20</sup> Stephan Hobe, Legal Aspects of Space Tourism, 86 *Neb. L. Rev.* 439, (Nebraska Law Review) 2007, p.455.

<sup>21</sup> Jürgen Cloppenburg, Legal Aspects of Space Tourism, in Marietta Benkö and Kai-Uwe Schrogl (eds.) *Space Law, Current problems and perspectives for future regulation*, Eleven International Publishing, 2005, p.201.

<sup>22</sup> UNGR 1962 (XVIII), The Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, adopted on 13 December 1963, Clause 9; Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, Article V.

<sup>23</sup> Gabriella Catalano Sgrosso, Legal Status of the Crew in International Space Station , *Proceedings of the Forty-Second Colloquium on the Law of Outer Space* (1999), p.36.

<sup>24</sup> The views of the delegations of Bulgaria and Russia, see A/Ac.105/C.2/L.28/rev.1, 14 December 1967, Nandasiri Jasentuliyana & Roy S. K. Lee, *Manual on Space Law*, Vol. III, 1981, Oceana Publications, New York, p.188 & p.190. Argentina proposed that “an ‘astronaut’ is a civilian explorer, exclusively for peaceful purposes, who is carrying out his duties as a representative of mankind in outer space, including the Moon and other celestial bodies”. A/AC. 105/C.2/L.23; 23 June 1967, Nandasiri Jasentuliyana’s book, p.147.

<sup>25</sup> *Concise Oxford English Dictionary*, Oxford University Press, 2008.

<sup>26</sup> Jürgen Cloppenburg, Legal Aspects of Space Tourism, in Marietta Benkö and Kai-Uwe Schrogl (eds.) *Space Law, Current problems and perspectives for future regulation*, Eleven International Publishing, 2005, p.201.

<sup>27</sup> A/Ac.105/C.2/L.2, 6 June 1962; A/Ac.105/C.2/L.3, 8 June 1962.

<sup>28</sup> Paul G. Dembling and Daniel M. Arons, The

Treaty on Rescue and Return of Astronauts and Space Objects, 9 *William and Mary Law Review*, 630 (1968), p.636.

<sup>29</sup> Nandasiri Jasentuliyana & Roy S. K. Lee, *Manual on Space Law*, Vol. III, 1981, Oceana Publications, New York, p.57.

<sup>30</sup> See Nandasiri Jasentuliyana & Roy S. K. Lee, *Manual on Space Law*, Vol. III, 1981, Oceana Publications, New York, pp.112, 113, 129 & 131.

<sup>31</sup> *Ibid.*, p.125.

<sup>32</sup> A/Ac. 105/21; Annex IV, 26 October 1964.

<sup>33</sup> A/Ac.105/C.2/L.21, 22 June 1967.

<sup>34</sup> *Oxford Advanced Learner's Dictionary*.

<sup>35</sup> Stephen Gorove, Interpreting salient provisions of the Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space, *Proceedings of the eleventh colloquium on the law of outer space*, 1969, p.93.

<sup>36</sup> Dimitrios Buhalis, *Tourism Business Frontiers: Consumers, Products and Industry*, Elsevier Butterworth-Heinemann, 2006, p.159.

<sup>37</sup> *Ibid.*

<sup>38</sup> Zhao Yun, A Legal Regime for Space Tourism: Creating Legal Certainty in Outer Space, 74 *J. Air L. & Com.* 959, Fall 2009, p.979.

<sup>39</sup> Francis Lyall & Paul B. Larsen, *Space Law A Treatise*, Ashgate Publishing Limited, 2009, p.129. Hamllton DeSaussure, Astronauts and Seaman-A Legal Comparison, *Journal of Space Law*, vol.10, No.2, 1982, p.168.

<sup>40</sup> Stephen Gorove, Interpreting salient provisions of the Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space, *Proceedings of the eleventh colloquium on the law of outer space*, 1969, p.93.

<sup>41</sup> Stephan Hobe, Legal Aspects of Space Tourism, 86 *Neb. L. Rev.* 439, (Nebraska Law Review) 2007, p.455. Mark J. Sundahl, The Duty to Rescue Space Tourists and Return Private Spacecraft, *Journal of Space Law*, Vol. 35, No.1, 2009, p.186.

<sup>42</sup> Frans G. von der Dunk, A Sleeping Beauty Awakens: The 1968 Rescue Agreement after Forty Years, *Journal of Space Law*, Vol. 34, No.2, 2008, p.433.

<sup>43</sup> Hamllton DeSaussure, Astronauts and

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<sup>44</sup> Mark J. Sundahl, The Duty to Rescue Space Tourists and Return Private Spacecraft, *Journal of Space Law*, Vol. 35, No.1, 2009, p.180.

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