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**RESCUING SPACE TOURISTS:
A HUMANITARIAN DUTY AND BUSINESS NEED**

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ABSTRACT

The success of the space tourism industry will rely on the ability of space companies to ensure the safe return of tourists from their space adventure. In order to help ensure the safety of their passengers, every tourism company will need to have a plan in place to rescue passengers in an emergency – whether this rescue takes place on land, on the high seas, or in space. This plan must be created against the background of a thorough understanding of international space law regarding the duty to rescue.

This paper explores the controversial topic of the duty to rescue under existing space law treaties and makes the case for an expansive interpretation of the treaties that would require states to rescue space tourists. This being said, space companies are advised not to rely on state action to rescue tourists in distress, but are instead urged to make their own arrangements to help ensure the safety of their customers and, in turn, limit their exposure to liability. To assist companies in this task, this paper sets forth the essential components of a rescue policy that should be adopted by every space tourism company.

I. INTRODUCTION

As sub-orbital space tourism companies prepare to launch their maiden flights, the primary concern for these companies is the safety of their customers. A steady flow of customers is essential to the success of the tourism business model and this flow will only be possible if the flight is viewed by the public as at least moderately safe. Safe operations will also reduce the risk that a space tourism company would be

subjected to crushing liability following an accident involving tourists. Ultimately, the success of the space tourism industry depends on a clean safety record. A catastrophic accident could set the industry back a decade or more.

In order to ensure the safety of their passengers and preserve the health of the tourism industry, companies will have to adopt a multi-faceted risk management policy. Among the most critical elements of this policy will be a plan for

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the rescue of the passengers on board the spacecraft. This plan must address rescue on land, on the high seas and, if passengers are at risk of being stranded in orbit, in outer space.

This rescue policy must be drafted with a clear understanding of the international law regarding the duty of states to rescue passengers in distress. Unfortunately, it is not clear whether space tourists are beneficiaries of the rescue obligations set forth in the relevant space treaties. Clarity is also lacking with respect to other aspects of the duty to rescue, such as whether rescue in space is ever required.

This paper seeks to assist space tourism companies by attempting to clarify the extent to which such companies can rely on states to assist with the rescue of space tourists. Following a general explication of the duty to rescue created under the space treaties, the author will explore the fundamental questions regarding (1) whether the duty to rescue applies to commercial ventures and (2) whether tourists are beneficiaries of the duty to rescue. Finally, the author will make a series of recommendations to space companies regarding the formulation of their rescue policies.

II. THE DUTY TO RESCUE

The duty to rescue is set forth in three treaties: the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (the “Outer Space Treaty”), the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Space (the “Rescue Agreement”), and the Agreement Governing the Activities of

States on the Moon and Other Celestial Bodies (the “Moon Agreement”).¹

Article V of the Outer Space Treaty requires states to “regard astronauts as envoys of mankind . . . and render to them all possible assistance in the event of accident, distress, or emergency landing on the territory of another State Party or on the high seas.”² In addition to requiring the rescue of astronauts after an emergency landing, this provision has been interpreted as requiring states to take all possible measures to rescue astronauts in space, since the “distress” which triggers the duty is not qualified with respect to the location of the astronauts.³ By the same token, the plain language of the Outer Space Treaty appears not to require rescue upon an emergency landing on Antarctica or a celestial body since the duty is triggered by emergency landings only when “on the territory of another State Party or on the high seas.”

¹ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, 610 U.N.T.S. 205 [hereinafter Outer Space Treaty]; Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, Apr. 22, 1968, 672 U.N.T.S. 119 [hereinafter Rescue Agreement]; Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, Dec. 5, 1979, 1363 U.N.T.S. 3 [hereinafter Moon Agreement].

² Outer Space Treaty, *supra* note 1, art. V. The language of Article 5 closely tracks the wording of Paragraph 9 of the Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, G.A. Res. 1962 (XVIII), U.N. Doc. A/RES/1962 (Dec. 24, 1963), 3 I.L.M. 157. The Outer Space Treaty also requires astronauts to provide “all possible assistance” to each other. Outer Space Treaty, *supra* note 1, art. V.

³ See, e.g., R. Cargill Hall, *Rescue and Return of Astronauts on Earth and in Outer Space*, 63 AM. J. INT’L L. 197, 205 (1969) (explaining that “Article V is cast in terms sufficiently broad to encompass earth-to-space rescue.”).

Elaborating on the requirements of the Outer Space Treaty, Article 2 of the Rescue Agreement requires that upon the unintended landing of “personnel of a spacecraft” upon the territory of a contracting state, the state “shall immediately take all possible steps to rescue them.”⁴ The Rescue Agreement adds to this obligation in Article 3 which provides that if a state discovers that “the personnel of a spacecraft have alighted on the high seas or in any other place not under the jurisdiction of any State, those Contracting Parties which are in a position to do so shall, if necessary, extend assistance in search and rescue operations.” It has been argued that this language requires states, provided they are “in a position to do so,” to rescue personnel who have landed not only on the high seas and Antarctica, but also on a celestial body (which is certainly not under the jurisdiction of any state).⁵ However, the requirement that the personnel “alight” prior to the rescue duty being triggered rules out any duty to rescue personnel traveling in space.⁶

Building on the prior treaties, the Moon Agreement requires states to take “all practicable measures to safeguard the life and health of persons on the moon.”⁷ The treaty goes on to make clear that all “persons” on the moon

⁴ Rescue Agreement, *supra* note 1, art. 2.

⁵ *Id.* art. 3. See also CARL Q. CHRISTOL, *THE MODERN INTERNATIONAL LAW OF OUTER SPACE* 171-72 (1982) (explaining that a U.S. delegate to the Rescue Agreement negotiations understood “any other place not under the jurisdiction of any State” to include the moon and celestial bodies.”).

⁶ See, e.g., CHRISTOL, *supra* note 5, at 189; Paul G. Dembling & Daniel M. Arons, *The Treaty on Rescue and Return of Astronauts and Space Objects*, 9 WM. & MARY L. REV. 630, 649 (1968)

⁷ Moon Agreement, *supra* note 1, art. 10.

should be accorded all benefits (including, presumably, the benefit of rescue) provided to “astronauts” under the Outer Space Treaty and to “personnel” under the Rescue Agreement.⁸ Moreover, states are required to “offer shelter in their stations, installations, vehicles and other facilities to persons in distress on the moon.”⁹ As further elucidated below, the provisions of the Moon Agreement are remarkable for the relative clarity of their meaning and the broad scope of the protection provided. In particular, the Moon Agreement clearly requires that assistance be provided for all persons on the moon, whether professional astronauts, service providers or commercial space tourists. Greater uncertainty exists regarding the application of the duty to rescue to space tourists under the Outer Space Treaty and the Rescue Agreement.

III. DOES THE DUTY TO RESCUE APPLY TO COMMERCIAL VENTURES?

A threshold question regarding the duty of states to rescue space tourists is whether the duties set forth in the treaties require rescue when the spacecraft is part of a commercial venture. Another way to pose this question is whether the space treaties make any distinction between public and private spacecraft in the context of the rescue duty. The answer is that no such distinction is made in the plain language of the treaties, which means that the duty to rescue should not be affected by the commercial nature of a flight.

It is a primary principle of international law that private persons (whether individuals or legal entities)

⁸ *Id.*

⁹ *Id.* art. 11.

are not subject to duties imposed by international law.¹⁰ However, the question at hand is not whether private persons have a duty under the space treaties, but is instead whether private persons can be the beneficiaries of duties imposed on states.¹¹ The answer to this is a resounding yes. One need only look to human rights treaties for examples of private individuals benefiting from international law.¹² It is therefore clear that no general principle of international law would prevent a private entity from benefiting from the obligations imposed under the space treaties. Moreover, there is nothing in the language of the space treaties that excludes commercial ventures from the benefits of the treaties. In their analysis of this issue, Diedericks-Verschoor and Gormley assert that “private persons and nongovernmental entities can be held to be the beneficiaries of contemporary and future space effort [*sic*] under the world rule of law.”¹³

The *travaux preparatoires* provide some evidence against the application of the Rescue Agreement to commercial flights, but the arguments in support of commercial application are many and

should bear greater weight.¹⁴ Evidence of the intention of drafters to include private companies among the beneficiaries of space law can be found in Article VI of the Outer Space Treaty which stresses the involvement of

¹⁰ I.H. Ph. Diederiks-Verschoor & W. Paul Gormley, *The Future Legal Status of Nongovernmental Entities in Outer Space: Private Individuals and Companies as Subjects and Beneficiaries of International Space Law*, 5 J. SPACE L. 125, 130 (1977).

¹¹ Individuals generally have no standing to bring a claim under international law and would have no standing to sue a state under the space treaties – the exception being the possibility that a domestic legal system provides a cause of action for the violation of international law (as is done under the Alien Tort Claims Act of the United States.).

¹² Diederiks-Verschoor & Gormley, *supra* note 10, at 130.

¹³ *Id.* at 155.

¹⁴ A French delegate to the Legal Subcommittee commented that the Rescue Agreement only applied to “experimental and scientific flights” and that a new treaty would have to be concluded when commercial flights became common. See I N. JASENTULIYANA & R. S. K. LEE, *MANUAL ON SPACE LAW* 54 (1979); DAMODAR WADEGAONKAR, *THE ORBIT OF SPACE LAW* 18 (1984). Some commentators also oppose the imposition of a duty to rescue in a commercial context on grounds that neither the crew or passengers of a commercial spacecraft could be deemed “envoys of mankind.” See, e.g., I.H. Ph. Diederiks-Verschoor, *Search and Rescue in Space Law*, in *PROCEEDINGS OF THE NINETEENTH COLLOQUIUM ON THE LAW OF OUTER SPACE* 152, 156 (1977). However, this is probably making too much of the phrase “envoys of mankind.” The use of this phrase in Article V of the Outer Space Treaty should not be treated as a precondition of the rescue duty. As other commentators, such as Bin Cheng, have noted, this phrase is insignificant in a legal sense. See Bin Cheng, “*Space Objects*”, “*Astronauts*” and *Related Expressions*, in *PROCEEDINGS OF THE THIRTY-FOURTH COLLOQUIUM ON THE LAW OF OUTER SPACE* 17, 25 (1992) (asserting that the phrase “envoys of mankind” is “no more than a figure of speech without any legal significance.”); see also V.S. Vereshchetin, *Legal Status of International Space Crews*, in *PROCEEDINGS OF THE TWENTY-FIRST COLLOQUIUM ON THE LAW OF OUTER SPACE* 164 (1979). The majority of commentators favor applying the duty to rescue to commercial flights. See, e.g., Frans G. von der Dunk, *Space for Tourism? Legal Aspects of Private Spaceflight for Tourist Purposes*, in *PROCEEDINGS OF THE FORTY-NINTH COLLOQUIUM ON THE LAW OF OUTER SPACE* (2007); Robert C. Beckman, *1968 Rescue Agreement – An Overview*, in *UNITED NATIONS TREATIES ON OUTER SPACE: ACTIONS AT THE NATIONAL LEVEL* 85 (2004); Setsuko Aoki, *Commentary on 1968 Rescue Agreement – An Overview*, in *UNITED NATIONS TREATIES ON OUTER SPACE: ACTIONS AT THE NATIONAL LEVEL* 407 (2004).

nongovernmental entities in the use of space.¹⁵ The general applicability of space law to private enterprise is also illustrated by various examples in other areas of the law. For instance, a launching state must register any space object it launches and is liable for any harm the object causes, even if the object is owned by a private entity.¹⁶

In addition to the plain language of the treaties, which do not exclude private spacecraft from the beneficiaries of the rescue duty, subsequent state practice shows that the duty to rescue should be interpreted as applying to personnel on commercial spacecraft.¹⁷ A perusal of the notifications made to the Secretary-

¹⁵ Outer Space Treaty, *supra* note 1, art. VI (requiring that states supervise any activity of non-governmental entities in space and bear responsibility for the compliance of such activities with the treaty).

¹⁶ This liability for space activities and the duty to register are established by the treaties governing registration and liability. Convention on Registration of Objects Launched into Outer Space, Jan. 14, 1975, 1023 U.N.T.S. 15; Convention on International Liability for Damage Caused by Space Objects, Mar. 29, 1972, 961 U.N.T.S. 187. Regarding the liability of launching states for harm caused by commercial ventures see Bruce A. Hurwitz, *Liability for Private Commercial Activities in Outer Space*, in PROCEEDINGS OF THE THIRTY-THIRD COLLOQUIUM ON THE LAW OF OUTER SPACE 37, 39 (1991); Ricky J. Lee, *Reconciling International Space Law with the Commercial Realities of the Twenty-First Century*, 4 SING. J. INT'L & COMP. L. 194, 230 (2000); Practice of States and International Organizations in Registering Space Objects: Replies from Member States, U.N. Document A/AC.105/C.2/L.250/Add.1 p. 3 (reporting that France "registers national satellites, whether they belong to government organizations or private companies.").

¹⁷ Pursuant to the Vienna Convention on the Law of Treaties, subsequent practice must be taken into account when interpreting a treaty. Vienna Convention on the Law of Treaties, art. 31(3)(b), May 23, 1969, 1155 U.N.T.S. 331 [hereinafter Vienna Convention].

General under Article 5 of the Rescue Agreement following the discovery of a space object quickly reveals that states have made such notifications even when the objects found are commercial in nature.¹⁸ Although this state practice concerns the duty to return space objects under the Rescue Agreement, it is reasonable to argue that the other duties imposed by the treaty, including the duty to rescue, should also extend to commercial ventures.

IV. ARE SPACE TOURISTS BENEFICIARIES OF THE DUTY TO RESCUE?

Assuming that the duty to rescue applies to commercial ventures, the question remains whether states are required under the treaties to rescue the crew only – or everyone on board, including the passengers. The crux of this analysis lies in the definition of the terms used in the treaties to refer to those persons who are beneficiaries of the rescue duty. Unfortunately, the matter is complicated by the lack of consistency in the use of terms. The Outer Space Treaty demands that assistance be given to "astronauts," while the Rescue Agreement requires rescue of the "personnel of a spacecraft" and the Moon Agreement requires action to safeguard "persons on the moon."¹⁹

¹⁸ For example, both Argentina and South Africa notified the Secretary General of the discovery in their territory of components of Delta II launch vehicles following the positive identification of these objects as privately owned by The Boeing Company. U.N. Document A/AC.105/825 *at* <http://www.unoosa.org/oosa/sdnps/unlfd.html>; U.N. Document A/AC.105/740 *at* <http://www.unoosa.org/oosa/sdnps/unlfd.html>.

¹⁹ Outer Space Treaty, *supra* note 1, art. V; Rescue Agreement, *supra* note 1, arts. 2 & 3; Moon Agreement, *supra* note 1, art. 10.

The generic, all-inclusive meaning of the term “persons” leaves no doubt that any duty to rescue contained in the Moon Agreement would extend to all people on the moon, including tourists. The more difficult question is whether tourists would be deemed “astronauts” or “personnel” under the Outer Space Treaty and the Rescue Agreement.

A. The Meaning of “Personnel”

Much has been written about the meaning of “personnel” in the Rescue Agreement and commentators have come to a variety of conclusions. Some believe that the term clearly excludes private passengers, while others argue forcefully for an expansive interpretation that would encompass all people on board a spacecraft. The commentators who interpret “personnel” as excluding passengers are supported by the primary rule of treaty interpretation under the Vienna Convention, namely, to give words their “ordinary meaning.”²⁰ According to the Oxford English Dictionary, “personnel” means “the body of persons engaged in any service or employment.”²¹ Since private passengers on a spacecraft would not be providing a service or acting as employees, they would not come within the definition of “personnel.” In light of this, Stephen Gorove, with some reluctance, opines that “[the term ‘personnel’] would not appear to include regular passengers . . . since such persons would not fall normally under

²⁰ Vienna Convention, *supra* note 17, art. 31(1) (requiring that a treaty “be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.”)

²¹ *Personnel*, OXFORD ENGLISH DICTIONARY (1971)

the category of ‘personnel.’”²² Bin Cheng also surrenders to the ordinary definition of the term, although he makes a point of saying that this exclusion of passengers was *not intended* by the drafters.²³

Other commentators refuse to surrender to the ordinary meaning of “personnel.” For example, Dembling and Arons, in their landmark article on the Rescue Agreement, explain that while “astronaut” refers to the pilot and crew only, “personnel” has a broader meaning which encompasses “the whole crew of a spacecraft, *or even future passengers.*”²⁴ A number of other commentators agree that “personnel” should include private passengers.²⁵ Moreover, the United Nations Workshop on Space Law held in Daejeon, South Korea in 2003 also concluded that “the term ‘personnel of a spacecraft’ . . . should be construed to encompass all persons on board a spacecraft.”²⁶

²² 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*, in PROCEEDINGS OF THE ELEVENTH COLLOQUIUM ON THE LAW OF OUTER SPACE 93, 93 (1969).

²³ Bin Cheng, *supra* note 14, at 165.

²⁴ Dembling & Arons, *supra* note 6, at 642 (emphasis added).

²⁵ See, e.g., MANFRED LACHS, *THE LAW OF OUTER SPACE* 79 (1972); Gabriella Catalano Sgrosso, *Legal Status of the Crew in the International Space Station*, in PROCEEDINGS OF THE FORTY-SECOND COLLOQUIUM ON THE LAW OF OUTER SPACE 35, 36, 40 (2000) (citing the NASA definition of “personnel”); Oscar Fernandez-Brital, *Legal Problems of Commercial Space Transportation*, in PROCEEDINGS OF THE THIRTY-THIRD COLLOQUIUM ON THE LAW OF OUTER SPACE 30, 33 (1991); Beckman, *supra* note 14, at 88; 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, 10 (2005).

²⁶ UN Doc. A/AC.105/814 at 6.

At first glance, a broad interpretation of “personnel” which includes tourists does not appear to be sustainable under the Vienna Convention since, as stated above, the primary rule of treaty interpretation requires that terms carry their “ordinary meaning.” However, there are some additional tools of interpretation available under the Vienna Convention which may allow for tourists to come within the scope of “personnel.”

The first of these tools of treaty interpretation provided by the Vienna Convention is found in Article 31(1) which requires that the determination of the “ordinary meaning” be guided by the “context,” “object,” or “purpose” of the treaty. In the case of Rescue Agreement, one of the purposes of the treaty is to safeguard the lives of the brave pioneers of outer space travel under the basic precepts of humanitarian law. This main motivating impulse of the treaty is reflected in the preamble which states that the treaty is “prompted by sentiments of humanity.”²⁷ In light of this humanitarian sentiment, some have argued that “personnel” should be interpreted in the most expansive manner so as to include all persons on board a spacecraft, including passengers.²⁸ Conversely, a narrower interpretation of “personnel” that cruelly deprives passengers of rescue (while the crew is extracted to safety) would

contradict the humanitarian basis of the treaty and, as the argument goes, would therefore be unacceptable.

However, the context, object, and purpose of the treaty can only be used to select among multiple “ordinary meanings” of a term – and cannot be used to give a term a meaning that cannot be found in any dictionary.²⁹ Thus, it is difficult to argue on this basis that “personnel” should be interpreted as meaning “all persons.” Moreover, it could just as easily be argued that the “context,” “object,” and “purpose” of the treaty was to provide for the rescue of the crew flying government-owned spacecraft. This was certainly foremost in the minds of the drafters since commercial tourism was, at most, a distant dream – and was certainly not the source of the great urgency that compelled the United States and the Soviet Union to hastily conclude the Rescue Agreement in 1968.

The second tool of interpretation under the Vienna Convention allows for the use of *travaux préparatoires* (and other supplementary means of interpretation) to determine the meaning of a term, if the attempt to interpret the term according to its “ordinary meaning” still results in ambiguity.³⁰ This rule of interpretation allows a meaning to be ascribed to a term that is not its “ordinary meaning.” Therefore, this

²⁷ Rescue Agreement, *supra* note 1, preamble. Regarding the importance of the preamble as a guiding light of treaty interpretation see International Law Commission, *Draft Articles on the Law of Treaties with Commentaries* 221 (1966) (stating that “[t]he preamble forms part of a treaty for purposes of interpretation is too well settled to require comment.”).

²⁸ Most notable, Manfred Lachs insisted that “[t]he humanitarian character of [rescue] imposes an extensive interpretation, whereby all persons aboard a space vehicle should be comprised herein.” LACHS, *supra* note 25, at 79.

²⁹ The commentary to this Article explains that a treaty “must be read as a whole, and . . . is not to be determined merely upon particular phrases which, if detached from the context, may be interpreted in more than one sense.” International Law Commission, *supra* note 27, at 221 (emphasis added). It is worth noting that certain NASA regulations define “personnel on board” broadly to include “those astronauts or other persons actually in the Orbiter or Spacelab during any flight phase of a Space Shuttle flight.” 14 C.F.R. § 1214.701(f) (2007).

³⁰ Vienna Convention, *supra* note 17, art. 32.

approach offers the possibility of interpreting “personnel” as including a broader spectrum of people than is normally understood. However, this rule applies only in the limited case where the ordinary meaning of the term in question is not “clear.”³¹ This exception would therefore not apply in the case of the term “personnel,” since the ordinary meaning is perfectly clear.

The third tool of treaty interpretation under the Vienna Convention is set forth in Article 32 and provides that when the ordinary meaning of a term “leads to a result which is manifestly absurd or unreasonable” supplemental means of interpretation, such as *travaux préparatoires*, can be used to reach a more reasonable interpretation of the term.³² This rule provides the strongest argument for adopting an expansive definition of “personnel.” Several commentators have recognized the patent absurdity of interpreting “personnel” as including only the crew and not passenger.³³ If this interpretation were put into practice, states would be required to rescue the pilot and crew, but could leave the passengers behind. The drafters certainly could not have intended this repugnant result.³⁴ The absurdity of a

³¹ International Law Commission, *supra* note 27, at 223.

³² Vienna Convention, *supra* note 17, art. 32.

³³ See, e.g., Freeland, *supra* note 25, at 10; Beckman, *supra* note 14, at 88.

³⁴ The Vienna Convention also allows for deviation from the “ordinary meaning” when the parties to the treaty agreed to give the term a “special meaning.” Vienna Convention, *supra* note 17, art. 31(4). However, this is a limited exception that only applies when parties agree on a special technical meaning of a term and, therefore, would not apply here. International Law Commission, *supra* note 27, at 222.

Yet another argument for the broad interpretation of “personnel” might be made under Article 33(4) of the Vienna Convention if

narrow interpretation becomes even more apparent when viewed in light of the humanitarian sentiment that underpins the Rescue Agreement. The exclusion of passengers would be a cruel act anathema to the generous spirit of humanitarian law. This absurdity can only be cured by adopting an expansive interpretation of “personnel.”

B. The Meaning of “Astronaut”

As is true with respect to “personnel,” the term “astronaut” has been variously interpreted as including (1) the pilot and crew only,³⁵ (2) the pilot, crew, and any technicians or physicians performing a professional service on board,³⁶ or (3) everyone on board, including the crew and passengers.³⁷

The only legitimate method of resolving this debate is to apply the rules of interpretation set forth in the Vienna Convention. Once again, analysis begins with the “ordinary meaning” of the debated term. In this case, the ordinary definition of “astronaut” is “a

it could be shown that the translation of “personnel” in the Arabic, Spanish or French or Chinese version of the treaty referred to all persons. But no such analysis has yet been undertaken to the author’s knowledge.

³⁵ See, e.g., Dembling & Arons, *supra* note 6, at 642.

³⁶ Gorove, *supra* note 22, at 93; Elina Kamenetskaya, “Cosmonaut” (“Astronaut”): *An Attempt of International Legal Definition*, in PROCEEDINGS OF THE THIRTY-FIRST COLLOQUIUM ON THE LAW OF OUTER SPACE 177, 177-78 (1989) (relying largely on the definition of “cosmonaut” provided by a Soviet-era encyclopedia); von der Dunk, *supra* note 14.

³⁷ Cheng, *supra* note 14, at 26; Ryszard Hara, *Legal Status of Astronauts and Other Personnel on the Moon*, in PROCEEDINGS OF THE TWENTY-SIXTH COLLOQUIUM ON THE LAW OF OUTER SPACE 165, 165 (1984) (relying on comments by an Italian delegate to the legal subcommittee).

person who travels beyond the earth's atmosphere" or "a trainee for spaceflight."³⁸ Pursuant to this definition, all persons on board a spacecraft would be encompassed by the term "astronaut." And unlike the ordinary meaning of "personnel" in the Rescue Agreement, the ordinary meaning of "astronaut" in the Outer Space Treaty does not result in absurdity. In fact, the ordinary meaning of "astronaut" is perfectly aligned with the humanitarian nature of Article V. The Vienna Convention will therefore not allow for the ordinary meaning to be challenged. Thus, the rescue duty set forth in Article V of the Outer Space Treaty should be interpreted as extending to space tourists.

C. The Practical Approach

Although compelling arguments exist for expanding the scope of the duty to rescue to include tourists, there is no guarantee that the International Court of Justice would adopt an expansive interpretation of "personnel" or "astronauts." However, the question of whether tourists are beneficiaries of the rescue duty is not the main problem facing space companies with respect to the issue of state-sponsored rescue. The practical reality is that if a state dispatches a mission to rescue the crew of a commercial spacecraft, the passengers are likely to be rescued as well, regardless of what the law demands, since it would be absurd and inhumane for the rescuers to leave a handful of passengers behind merely because they might believe that the law does not require the rescue of tourists.

The more salient issue when attempting to predict the likelihood of

³⁸ *Astronaut*, WEBSTER'S NEW COLLEGIATE DICTIONARY (1985).

state assistance in a rescue operation is whether any state will consider rescue "possible" (in the parlance of Article V of the Outer Space Agreement and Article 2 of the Rescue Agreement) or consider itself to be "in a position" to conduct rescue operations (in the parlance of Article 3 of the Rescue Agreement). Given the technological and financial demands of rescue operations these hurdles may prove insurmountable. Particularly if tourists are stranded in an orbiting space hotel, the likelihood of rescue becomes more remote due to the question of whether orbital rescue is required by the space treaties and whether any state would be "in a position" to take on the extraordinary challenge of space rescue.

V. RECOMMENDATIONS FOR A COMPANY POLICY ON RESCUE

There is no question that every space company must have a risk management policy in place that includes a plan for the rescue of their passengers in the event of an emergency. The need for such a policy is two-fold. First, the mechanics of the rescue operation must be designed in advance so that rescue, when necessary, can take place as quickly and smoothly as possible. Second, the policy will serve to reduce a company's exposure to liability. A company that fails to rescue its passengers following an accident may still be able to avoid liability if the company can show that it acted in a reasonable manner by carefully drafting and executing a rescue plan. The recommended elements of a rescue plan follow:

1. *A risk assessment*: The first step in drafting a rescue plan is to identify the types of situations that may require rescue. Rescue in the high seas or on land following a launch failure will be

common to all space companies. Space rescue may be a further necessity for companies that offer orbital tourism.

2. *A memorandum defining the contours of the international law of rescue:* The company policy should be based in part on a legal memorandum that explains the extent to which states have a duty to rescue the company's customers in the event of an emergency. The memorandum should explore the duty to rescue under space law, air law, maritime law, and any other applicable law. The memorandum should also take into account whether nearby states are parties to the relevant treaties.

3. *Notification of Nearby States:* The company should notify nearby states whose assistance may be required of its launch activity so that those countries can choose to make preparations to provide assistance when necessary. Companies may also want to make arrangements with states for the reimbursement of any expense incurred in the course of rescue. Otherwise, the absence of any provision for the reimbursement of rescue expenses in the space treaties may deter states from undertaking rescue efforts.

4. *Preparations for Rescue:* Since a company cannot rely on state action to rescue their customers, a company must make its own arrangements for rescue to the extent feasible. For example, the company could arrange for a ship to promptly rescue passengers and crew in the event of an emergency landing in the ocean. Similar arrangements could be made for land rescue. Space rescue is the more difficult and expensive challenge. In the case of company that delivers customers to its own orbital hotel, as Virgin Galactic plans to do, a spare spacecraft should be available to retrieve the hotel guests in the event that they become stranded. Companies could also enter into reciprocal agreements to

provide assistance to each other.³⁹

5. *Insurance:* An effective rescue policy must provide for the sufficient funding of rescue operations. These financial arrangements should be supplemented by insurance coverage in order to defray the considerable cost of rescue. The lack of insurance could subject the company to charges of undercapitalization and potentially deprive the shareholders of the protection of the corporate veil.

VI. CONCLUSION

Before the first sub-orbital space tourism flights take place in the coming years, companies must put contingency plans into place for the rescue of tourists in distress. The survival of the industry depends on it. Fortunately, international space law has long imposed a duty to rescue based on humanitarian grounds. However, as shown in this paper, the space treaties contain a number of hermeneutical problems that stretch the rules of treaty interpretation to their limit. In the end, the author urges states to adopt an expansive interpretation of the duty to rescue primarily because the rules of treaty interpretation, as well as the dictates of humanitarian law, demand it.

Taking into account the uncertainty of international law, every space tourism company should move forward to create a multi-pronged policy regarding the rescue of its passengers. This precaution will result in increased safety for passengers and help to protect the company from devastating liability.

³⁹ The great challenge of space rescue will also create the opportunity for a company (or a national space agency) to provide a "space ambulance" service for a fee.

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