1989

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OUT TO LAUNCH: PRIVATE REMEDIES FOR OUTER SPACE CLAIMS

STANTON EIGENBRODT

I. ACTIVITY IN OUTER SPACE

EVER SINCE THE LAUNCH of Sputnik, man has looked with interest and apprehension to outer space. From satellites and the Apollo missions to the Soyuz space stations and the United States space shuttles, man has been in a continual struggle to increase his presence in space, and to reap the gains that await him, both military and economic. Recent events, however, have begun to highlight new concerns in the business of space exploration.

Originally, space programs focused purely on exploration and research. The launching of satellites was so expensive that only governments could afford space programs. Any economic applications from space technology were by-products of the research and not the goal of the programs. In recent years, however, space activities have begun to focus on technology for servicing the needs of the general public. Such technology is evident in such areas as telecommunications and weather satellites, and that drive for technology continues to increase.

In 1984 President Reagan signed an executive order in

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1 Boeckstiegel, Commercial Space Activities: Their Growing Influence on Space Law, 12 ANNALS AIR & SPACE L. 175 (1987).
3 Boeckstiegel, supra note 1, at 176.
4 Id.
which he directed the Department of Defense to act as the agency in charge of regulating private space launches.\textsuperscript{5} The executive order came in response to the confusion among federal agencies that resulted when an American company attempted to privately launch a satellite.\textsuperscript{6} Congress recognized the importance of private space launches in codifying and expanding President Reagan's Executive Order in the Commercial Space Launch Act of 1984.\textsuperscript{7}

The Space Launch Act designates the Secretary of Transportation as the official responsible for carrying out the chapter.\textsuperscript{8} The Department of Transportation (DOT) has now codified launch procedures for the launching of satellites by private companies,\textsuperscript{9} and seven United States launch firms have signed contracts for near-term launches.\textsuperscript{10} In addition, the firms have reservations for fifteen more launches.\textsuperscript{11} The DOT is also actively involved

\begin{itemize}
\item[$\textsuperscript{6}$] For a discussion of the launch of the Conestoga I, see Harrigan, Mr. Hannah's Rocket, TEX. MONTHLY, Nov. 1982, at 168.
\item[$\textsuperscript{7}$] Commercial Space Launch Act, 49 U.S.C. app. §§ 2601-2623 (1982 and Supp. 1988). The preamble states the purpose of the Act:
\begin{quote}
(7) the United States should encourage private sector launches and associated services and, only to the extent necessary, regulate such launches and services in order to ensure compliance with international obligations of the United States and to protect the public health and safety, safety of property, and national security interests and foreign policy interests of the United States.
\end{quote}
\textit{Id.} § 2601.
\item[$\textsuperscript{8}$] \textit{Id.} § 2604.
\item[$\textsuperscript{9}$] 14 C.F.R. §§ 400-415 (1988).
\item[$\textsuperscript{10}$] Musarra, Commerical Space Transportation: Regulatory Activities of the United States Department of Transportation, 30 PROC. COLLOQUIUM ON L. OF OUTER SPACE 224 (1988). The firms involved that have built and launched vehicles for NASA and the Department of Defense are McDonnell Douglas, manufacturer of the Delta vehicles; Martin Marietta, manufacturer of the Titan vehicles; General Dynamics, manufacturer of the Atlas and Centaur vehicles. \textit{Id.} at 225. In addition, four start-up firms plan to target smaller markets: American Rocket, Conatec, E'Prime, and Space Services, Inc. \textit{Id.}
\item[$\textsuperscript{11}$] \textit{Id.} The established firms plan to launch communications satellites to geosynchronous orbits. \textit{Id.; see infra} note 20 for a discussion of the geosynchronous orbit. These firms will have approximately fifteen launches per year beginning in 1990. Musarra, supra note 10, at 225. The smaller firms will be launching vehicles into lower orbits with a number of payloads including navigation, remote sensing, materials processing, communications, and scientific and military experiments. \textit{Id.}
in arranging private access to launch facilities. In addition to action by the DOT, the National Aeronautics and Space Administration (NASA) intends to have competitive procurement for launch services for a number of payloads per year in the small, medium and intermediate classes. These launches will begin a new era in the private commercialization of space, and thereby increase the number of active space objects.

Other factors will contribute to an even greater human presence in space. NASA successfully launched the redesigned space shuttle Discovery in 1988, thus once again providing the shuttle as a means of conducting business in outer space. France and Germany have begun actively seeking customers for their launch vehicles. The United States plans to take part in a multi-national space station to be launched in the 1990's. The Soviet Union has had a manned presence in its Soyuz space station for years, and plans to continue that aspect of its space program. The attraction of manufacturing possibilities, such as growing perfect crystals and other products which are superior when produced in a weightless environ-

12 Id. at 226-27. The Secretary of Transportation shall also:
take such actions as may be necessary to facilitate and encourage the acquisition (by lease, sale, transaction in lieu of sale, or otherwise) by the private sector of launch property of the United States which is excess or is otherwise not needed for public use and of launch services, including utilities, of the United States which are otherwise not needed for public use.


14 Musarra, supra note 1, at 225.


17 See Foley & Scoular, “Made in Space”—International Legal Aspects of Manufacturing in Outer Space, in Space: Legal and Com. Issues 106 (1986). The parties involved are the United States, Japan, Canada and the European Space Agency. Id. at 120.

The benefits of increasing man's presence in space do not, however, come without corresponding dangers. The geostationary orbit already contains some 5600 objects, such as dead satellites, explosion fragments and other debris that could damage other operational space objects. With the continued increase in emphasis on the private commercial aspects of outer space, the number of space objects will continue to rise. Consequently, the probability of a collision in space will increase dramatically. The future will bring more problems and accidents, also points to an increased presence in space.

The geostationary orbit already contains some 5600 objects, such as dead satellites, explosion fragments and other debris that could damage other operational space objects. With the continued increase in emphasis on the private commercial aspects of outer space, the number of space objects will continue to rise. Consequently, the probability of a collision in space will increase dramatically.

See Foley & Scoular, supra note 17, at 107-08. The conditions in space allow better quality material processing with increased quantity and lower cost than is possible on Earth. Some processes that are impossible on Earth are possible in space. Id. at 108. Pharmaceuticals processed on board the space shuttle Discovery were four times purer than on Earth. Id. The first space-manufactured product, a polystyrene sphere ten micrometers in diameter, went on the market in July 1985. The spheres, sold by the National Bureau of Standards as "standard reference materials," are used in blood cell counts, measuring particulate pollution, and calibrating machines that make finely ground products. Id. Other areas that could improve through production in outer space include semiconductor materials, microtechnology, advanced metals, alloys, glasses and ceramics, polymers and organic chemistry. Id. at 109. These products could have applications in computer chips, lasers, switching devices in fiber-optic systems, high frequency antennas, and solar power arrays. Id.

The geostationary/geosynchronous orbit is 22,300 miles above the equator. Objects in a geostationary orbit rotate at approximately the same speed as the Earth, thus appearing to be fixed in place. See Corrigan, The Collision Hazard in Outer Space and the Legal System, in SPACE: LEGAL AND COM. ISSUES 36, 38 (1986).

In addition to explosion fragments, the debris includes shrouds, clamps, separation components and spent propulsive elements. Corrigan, supra note 20, at 37.

Station Likely to Be Hit By Debris, AVIATION WK. & SPACE TECH., Sept. 17, 1984, at 16.

See supra notes 3-19 and accompanying text for a discussion of the increase in the private commercial use of outer space. The space shuttle has exhibited a capacity for recovering space debris in recovering two defective satellites. The Westar VI and the Palapa B-2 were deployed by the space shuttle Challenger in February 1984. The two satellites malfunctioned, and instead of assuming the desired orbit, each entered low, inoperative orbits. In November, 1984, the satellites were retrieved by a later shuttle mission. See Kenney, The Impact of United States Products Liability Law on Commercial Activities in Space, in SPACE: LEGAL AND COM. ISSUES 209, 232 (1986); see infra notes 33-35 and accompanying text for a further discussion of the possible legal claims involving these satellites.

See Corrigan, supra note 20, at 40-44. The probability of a collision in the geostationary orbit occurring before the end of the century is less than $2 \times 10^{-3}$. While the chance of a collision in the immediate future is small, $6 \times 10^{-6}$, the
dents in outer space or outer space-related activities, which will in turn lead to an increase in disputes and claims resulting from injury to private persons and property.

The question of remedies for private individuals suffering injury resulting from outer space activities has received more attention as this activity has increased. While some international agreements mention individuals, individuals have no standing to bring claims against foreign governments under international law.\(^\text{25}\) Individuals can bring claims under the municipal law of a country,\(^\text{26}\) but that alternative presents various problems as well.\(^\text{27}\) How claims of private persons regarding injuries from outer space activities will be resolved is a question of increasing importance as activity in outer space increases.

II. POSSIBLE CLAIMS ARISING FROM ACTIVITIES IN OUTER SPACE

Claims for damages resulting from activities in outer space can take several forms. The claims can range from tort claims,\(^\text{28}\) to contract claims,\(^\text{29}\) to intellectual property claims for products developed in outer space.\(^\text{30}\) In each case prospects for recovery will differ.

Tort claims can include aborted launches and injuries that occur while a space object is on the launching pad.\(^\text{31}\)

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\(^{25}\) See infra notes 66-67 and accompanying text.

\(^{26}\) In international law, "municipal law" refers to the law within a country.

\(^{27}\) See infra notes 96-189 and accompanying text.

\(^{28}\) See infra notes 31-32 and accompanying text.

\(^{29}\) See infra notes 93-35 and accompanying text.

\(^{30}\) See infra note 39 and accompanying text.

Claims can also arise from the return of space objects to the surface of the planet, such as the crash of the Cosmos 954 satellite in Canada.\textsuperscript{32}

Contract claims in the near future will probably involve the deployment of satellites. For example, two satellites failed in February 1984 after they were deployed from the space shuttle.\textsuperscript{33} The crew of a subsequent space shuttle mission retrieved the two satellites for repair.\textsuperscript{34} The owners of the satellites may have claims against both the government and the manufacturers of the satellites. Given the present broad interparty waivers of liability that NASA requires, however, the manufacturers of the satellites will probably be left to their own devices in dealing with claims of irate satellite owners.\textsuperscript{35}

While a continuous manned presence in space is not a present reality, a space station will probably be built in the near future,\textsuperscript{36} especially in light of the manufacturing benefits that a permanent space platform would provide.

\textsuperscript{32} See \textit{infra} notes 82-95 and accompanying text for a discussion of the Cosmos crash and the claims process under the Liability Convention.

\textsuperscript{33} See Kenney, \textit{supra} note 23, at 232.

\textsuperscript{34} See Payne, \textit{A High-Wire Act in Space That Has Insurers Cheering}, Bus. Wk., Nov. 26, 1984, at 56. The insurers had to pay out $180 million in claims on Indonesia’s Palapa B-2 and Western Union’s Westar VI. \textit{Id.} The underwriters paid NASA $5.5 million to design the equipment for the rescue. \textit{Id.} Once the satellites are refurbished the underwriters will have invested $30 million, but they will be able to sell the satellites for $30 to $40 million apiece. \textit{Id.}

\textsuperscript{35} See generally Foley & Scoular, \textit{supra} note 17, at 106. The authors note that NASA and Space Industries entered into a no fault, nonsubrogation, interparty waiver of liabilities with respect to claims by and against them.

Thus, each party agrees not to assert a claim against the other party or the other’s customers and to absorb the financial and other consequences for damage it may incur to its own property and employees as a result of participation in Space Transportation System (“STS”) Operations during “Protected STS Operations.”

\textit{Id.} at 124. The waivers of liability are to be extended to the other participants, including contractors, subcontractors and customers as third-party beneficiaries. \textit{Id.}

\textsuperscript{36} Agreements have been signed between the United States, Japan, Canada and the European Space Agency to design a multinational, permanent manned space station. The plans for the space station include manned and unmanned elements in five modules. Two modules will be for living quarters, one for scientific experimentation, one for materials processing and one for the space station’s control systems. Foley & Scoular, \textit{supra} note 17, at 120.
With a manned presence in space a whole new line of claims will arise. Workers in space could conceivably bring workers' compensation claims against their employer for injuries suffered while in the space station. Persons injured in a space station could bring products liability or negligence claims against the owners or manufacturers of the space station or its component parts.37 Suggestions have already been made regarding dispute resolution among inhabitants of a space station.38

Other claims could arise regarding violations of intellectual property rights. Obviously, a company would not have much financial incentive to manufacture a product in outer space if it could not have exclusive rights to the products developed in outer space.39

The complexity in the claims will arise from the multinational character of the activities in outer space. Notwithstanding the international claims process, a case with plaintiffs and defendants of different countries raises many procedural questions, including choice of forum

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37 See infra notes 95, 116-117, 137-139, 156-157, 185-189 and accompanying text for a further discussion of the permutations and complications involved in bringing these possible claims.


39 See Foley & Scoular, supra note 17, at 127-30. NASA has noted the importance of this issue in releasing the following statement:

NASA will continue its flexible yet realistic approach to providing maximum protection for intellectual property rights arising out of private investment, and of encouraging the use and commercialization of NASA-supported and developed technology, with patent and other protection afforded the user as applicable and appropriate.

In carrying out this initiative, it is recognized that because of the diverse nature of the possible arrangements that may be used to facilitate commercial use of space, as well as the varying scope of, and source of, the intellectual property rights that may arise of or be used under any given arrangement, hard and fast procedures are often not desirable, and under many arrangements intellectual property rights need to be negotiated on a case by case basis.

Id. at 128. While present United States patent laws do not cover inventions outside the United States, NASA is supporting a proposed amendment to those laws which would expressly apply them to outer space activities. Id.
and jurisdiction. These problems will be outlined in the following sections.

III. REMEDIES UNDER INTERNATIONAL LAW

A. International Agreements

Multinational documents provide the basis for remedies under international law. The first major treaty specifically concerning outer space was the Treaty on Principles Governing the Activities of State in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies of January 27, 1967 ("Outer Space Treaty").

That treaty has two articles which bear on remedies for claims resulting from outer space activities. Article VI provides that States shall bear responsibility for national activities in outer space, including those undertaken by private persons of those States. The article also provides that responsibility for compliance of international organizations rests with the individual State members, as well as with the organization itself. Article VII generally provides that a party to the Treaty that is involved in launching an object into outer space is internationally liable for any damage caused by the object or its component.

41 Id. arts. VI, VII.
42 Id. art. VI. Article VI provides:
States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. The activities of non-governmental entities in outer space, including the moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty. When activities are carried on in outer space, including the moon and other celestial bodies, by an international organization, responsibility for compliance with this Treaty shall be borne both by the international organization and by the States Parties to the Treaty participating in such organization.

Id.
43 Id.
parts. The treaty also stipulates that parties who register a space object will retain jurisdiction over that object at all times.

The liability articles of the Outer Space Treaty are useful in setting out broad parameters, but do not help much with specifics. To alleviate this problem, the United Nations drafted the Convention on International Liability for Damage Caused by Space Objects of November 29, 1971 ("Liability Convention"). The Liability Convention supplements and, where necessary, supplants the Outer Space Treaty as the controlling international document for liability for damage caused by Space objects.

Id. art. VII. Article VII provides:

Each State Party to the Treaty that launches or procures the launching of an object into outer space, including the moon and other celestial bodies, and each State Party from whose territory or facility an object is launched, is internationally liable for damage to another State Party to the Treaty or to its natural or juridical persons by such object or its component parts on the Earth, in air space or in outer space, including the moon and other celestial bodies.


A statement of general principles had been necessary because general international law was uncertain to begin with, and in any event required modification in its application to outer space. The Outer Space Treaty was therefore evidence of some progress towards elaborating rules of international space law including state responsibility for ground damage. But the Outer Space Treaty states very general propositions, and these required further elaboration. Id. at 708. In particular, Article VII urgently needed elaboration. Id. While Article VII does set forth the general idea of liability, the article contains no specific provisions as to procedures for recovery. Outer Space Treaty, supra note 40, art. VII. The General Assembly listed that factor in a 1970 resolution calling for completion of the draft Liability Convention in which the General Assembly emphasized "that the convention is intended to establish international rules and procedures concerning liability for damage caused by the launching of objects into outer space and to ensure in particular, the prompt and equitable compensation for damage." Schwarz & Berlin, supra, at 708 (quoting G.A. Res. 2601 (XXIV) on January 16, 1970).

Liability Convention, supra note 31.

Schwartz & Berlin, supra note 46, at 709-10. The Vienna Convention of the Law of Treaties, an instrument governing treaty interpretation, states in Article 30 section 3: "When all the parties to the earlier treaty are parties also to the later
The Liability Convention imposes two different standards of care, depending on what type of damage occurs. It imposes strict liability for damage caused by a space object "on the surface of the earth or to aircraft in flight."\(^{49}\) If the damage occurs anywhere else, then liability is based on fault.\(^{50}\) Article V sets out the provisions of joint and several liability and indemnification.\(^{51}\)

The issue of damages in the Liability Convention is, of course, very important to the private person seeking a remedy for outer space torts, especially given the already tested high damage awards of the United States court system.\(^{52}\) The Liability Convention defines "damage" as "loss of life, personal injury or other impairment of health; or loss of or damage to property of States or of persons, natural or juridical, or property of international intergovernmental organizations."\(^{53}\) Article XII provides further guidance for determining damages by providing that damages will be awarded so as to "restore the person . . . to the condition which would have existed if the damage had not occurred."\(^{54}\) This article recognizes the ac-

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\(^{49}\) Liability Convention, supra note 31, art. II.
\(^{50}\) Id. art. III.
\(^{51}\) Id. art. V.

1. Whenever two or more States jointly launch a space object, they shall be jointly and severally liable for any damage caused.

2. A launching State which has paid compensation for damage shall have the right to present a claim for indemnification to other participants in the joint launching. The participants in a joint launch may conclude agreements regarding the apportioning among themselves of the financial obligation in respect of which they are jointly and severally liable. Such agreements shall be without prejudice to the right of a State sustaining damage to seek the entire compensation due under this Convention from any or all of the launching States which are jointly and severally liable.

3. A State from whose territory or facility a space object is launched shall be regarded as a participant in a joint launching.


\(^{53}\) Liability Convention, supra note 31, art. I, § (a).

\(^{54}\) Id. art. XII.
cepted rule of general international law as set out in the Chorzow Factory case:

[R]eparation must, as far as possible, wipe out all the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed.

The treaty provision does not, however, end the discussion of damages. Questions remain as to what types of damages can be recovered, such as lost profits, loss of future earnings, medical expenses, physical pain and mental suffering. While these damages would be recoverable in the United States, the Soviet Union determines damages based on societal costs such as hospitalization, schools, and State pensions rather than personal loss. One argument raised to support more liberalized recovery under the Liability Convention is that the World Health Organization has defined "health" as "a state of complete physical, mental, and social well-being." Thus, the Liability Convention's definition of damage which includes "other impairment of health" may be interpreted as broader than

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55 1928 P.C.I.J. (ser. A) No. 17, at 47 (Sept. 13, 1928) (action by Germany protesting Polish seizure of factory at Chorzow).
56 Id.
58 Christol, supra note 57, at 359. Christol notes:
[P]ursuant to U.S. practices, compensation for the following would be appropriate: lost time and earnings; impaired earning capacity; destruction or deprivation of use of property; rendering the property unfit for the use for which it was intended; loss of profits resulting from an interruption in business activities; loss of rents; reasonable medical, hospital, and nursing costs occasioned by harm to the person; physical impairment, including impairment of mental faculties; pain and suffering; humiliation; reasonable costs for the repair of property that has been wrongfully harmed; costs incurred in mitigating existing wrongful harm; and loss of the services of a third party to which the injured party was entitled.

Id.
59 Id. at 365; Martin, Legal Ramifications of the Uncontrolled Return of Space Objects to Earth, 45 J. Air L. & Com. 457, 464 (1980).
direct physical damage or death. Although commentators generally agree that recoverable damages under the Liability Convention would include such direct and indirect damages as physical pain and mental suffering, the fact remains that damages will be determined on a case by case basis, thus possibly undermining any consistency in damage claims. This case-by-case approach may increase the attractiveness of municipal law as the avenue of recovery in a country such as the United States that typically has high damage awards.

B. Private Recovery

While the Liability Convention and the Outer Space Treaty provide a framework for recovery, international law presents several pitfalls to the private person seeking to recover damages. The first obstacle facing a private person desiring to make a claim is the Liability Convention's refusal to allow individual claimants; a State must bring a claim for an individual against another State. The question of whether a State will bring the claim at all is one solely of municipal law; international law has no jurisdiction over the decision. If the political realities are such that the government prefers not to bring the claim, then the private person has no avenue of appeal. If the private person is a national of a country involved in a joint venture with the country against which the person wishes to bring a claim, existing liability agreements may not allow the claim to be brought.

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62 Christol, supra note 57, at 362.
63 Bosco, supra note 52, at 339.
64 Liability Convention, supra note 31, art. VIII.
65 The international law of outer space controls actions after a claim is brought, but not whether a claim should be brought. See id.
66 Only States can bring claims under the Liability Convention. Id.
67 See Foley & Scoular, supra note 17, at 120-21. For instance, in the Memorandum of Understanding between the United States, Japan, Canada, and the European Space Association for a multinational space station, each party "agrees that
The Liability Convention does not always allow the injured party recovery, even if the country would be willing to bring the claim. The provisions of the Liability Convention do not apply to damage caused by a space object of a launching State to a national of that launching State.\(^6\) The Liability Convention also does not apply to foreign nationals in certain situations, such as when a foreign national is assisting with the launch of the space object.\(^6\) In that case the private person must proceed under municipal law.

A private person may also be faced with the quandary of choosing between the Liability Convention or municipal law at the outset, because the time frame built into the Liability Convention may not allow both. The Liability Convention stipulates that a party may not file a claim under the Convention if that same claim is concurrently being litigated in the municipal courts of a launching State.\(^7\) If the claimant is also considering bringing suit in

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\(^6\) Liability Convention, supra note 31, art. VII, § (a). "The provisions of this Convention shall not apply to damage caused by a space object of a launching State to: (a) Nationals of that launching State." Id.

\(^6\) Id. art. VII.

The provisions of this Convention shall not apply to damage caused by a space object of a launching State to: . . . (b) Foreign nationals during such time as they are participating in the operation of that space object from the time of its launching or at any stage thereafter until its descent, or during such time as they are in the immediate vicinity of a planned launching or recovery area as the result of an invitation by that launching State.

Id. (emphasis added). Some persons, however, might be able to circumvent the specific language. Since the article specifies "that" launching State and "that" space object, a foreign national could have a claim against other launching States not mentioned in Article VII. See Bosco, supra note 52, at 328-30. Thus, if a United States national is injured while deploying a foreign satellite from a United States space shuttle, the United States national could recover against the state that requested the deployment. Id. (citing Gorove, The Shuttle and International Space Flight, in THE SPACE SHUTTLE AND THE LAW at 57 (1980)).

\(^7\) Liability Convention, supra note 31, art. XVI. "A State shall not, however, be
the United States after the disposition of his claim under the Liability Convention, the statute of limitations will probably have run before the international claims process has run its course.\(^7\) Conversely, a claim under the Liability Convention must be presented to a launching State not later than a year following the date of the accident for which the launching State is liable.\(^7\) A long, complex commercial litigation case in United States courts will take far longer than the year limitation imposed by the Liability Convention for presenting the claim to the launching State.

The Liability Convention establishes a Claims Commission if the two countries have not settled the claim diplomatically within one year.\(^7\) The Claims Commission entitled to present a claim under this Convention in respect of the same damage for which a claim is being pursued in the courts or administrative tribunals or agencies of a launching State or under another international agreement which is binding on the States concerned." \(^7\)

\(^7\) Generally the statute of limitations is two years for actions in tort, and four years for actions in contract. \(^8\) Martindale Hubbell Law Directory (1989). The longest limitation for actions in contract is six years. \(^7\) The long limitations may allow a municipal action after an unsuccessful international claim; however, if the claimant sued first under municipal law, a long complex case in municipal court would take far longer than the one year limitation in the Liability Convention. Of course, making sure a plaintiff could get two chances to litigate is not necessarily desirable.

\(^7\) Liability Convention, supra note 81, art. X, para. (1). Paragraphs two and three include a discovery rule and also allow limited amendment of the complaint:

2. If, however, a State does not know of the occurrence of the damage or has been able to identify the launching State which is liable, it may present a claim within one year following the date on which it learned of the aforementioned facts; however, this period shall in no event exceed one year following the date on which the State could reasonably be expected to have learned of the facts through the exercise of due diligence.

3. The time-limits specified in paragraphs 1 and 2 of this article shall apply even if the full extent of the damage may not be known. In this event, however, the claimant State shall be entitled to revise the claim and submit additional documentation after the expiration of such time limits until one year after the full extent of the damage is known.

\(^7\) Id. art. X, paras. (2)-(3).

\(^7\) Id. art. XIV. "If no settlement of a claim is arrived at through diplomatic negotiations . . ., within one year from the date on which the claimant State notifies the launching State that it has submitted the documentation of its claim, the
Ideally has three members: one appointed by the claimant State, one appointed by the launching State, and a Chairman to be jointly appointed by both States. If after four months, the two countries cannot agree on a Chairman, then the Secretary General must choose one within two months. Article XV further provides that the Commission shall determine its own procedure and any administrative matters, including the place where it shall sit. The Commission has one year to make its decision, unless it decides it needs a time extension. The decision of the Commission is not binding unless the parties so agree, which opens the field up for even more time spent in diplomatic negotiations.

These articles provide that under international law the claims process can take years to complete, even if the Commission does not decide it needs an extension. In a practical sense a private person can choose only one forum in which to bring his claim, and given the unpredictability of the Liability Convention, the municipal courts might provide a better solution.

Parties concerned shall establish a Claims Commission at the request of either party."  

1. If one of the parties does not make its appointment within the stipulated period, the Chairman shall, at the request of the other party, constitute a single-member Claims Commission.  
2. Any vacancy which may arise in the Commission for whatever reason shall be filled by the same procedure adopted for the original appointment.  
3. The Commission shall determine its own procedure.  
4. The Commission shall determine the place or places where it shall sit and all other administrative matters.  
5. Except in the case of decisions and awards by a single-member Commission, all decisions and awards of Commissions shall be by majority vote.

Several commentators in the field of outer space law addressed this problem
C. The Liability Convention In Action

The world has had only one opportunity to observe the operation of the Liability Convention. On January 23, 1978, Soviet Cosmos 954 Satellite fell to the earth, crashing in Canada. The Canadians spent until mid-October, 1978, conducting clean-up activities. On March 23, 1979, the Canadians presented a formal claim to the Soviet government for roughly six million dollars. After lengthy negotiations, the two countries signed a three million dollar settlement agreement in Moscow on April 2, 1981, over three years after the accident occurred. The settlement did not acknowledge liability.

Canada did not restrict its claims to those under the Liability Convention. Other claims included trespass per se, and a claim that the Soviet action violated Canada’s sovereignty.

While the matter did not come to an impasse which
would have forced instituting a Claims Commission, it can be argued that the Liability Convention is exclusive of all other international remedies. The preamble to the Liability Convention as well as legislative history suggest that the United Nations meant the Liability Convention to be the sole remedy for damage caused by outer space objects. The Vienna Convention on the Law of Treaties supports this argument, since in Article 30(3) it provides that parties to treaties covering the same subject matter should apply the earlier treaty only to the extent that it is compatible with the later treaty. Therefore, for claims that could be brought under the Outer Space Treaty and the Liability Convention, the Liability Convention would control. Whether that argument will be borne out has not been determined.

Two important points arise from this first exercise of

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87 Id. at 705.
88 Id. at 707-09. The preamble states:
Recognizing the need to elaborate effective international rules and procedures concerning liability for damage caused by space objects to ensure, in particular, the prompt payment under the terms of this Convention of a full equitable measure of compensation to victims of such damage.
Believing that the establishment of such rules and procedures will contribute to the strengthening of international cooperation in the field of the exploration and use of outer space for peaceful purposes.

Liability Convention, supra note 31, preamble.
89 General Assembly Resolutions provide a source of legislative history. Resolution 2601B (XXIV) of December 16, 1969 states:
The General Assembly:
Regrets that the Commission has not yet been able to complete the drafting of a liability convention, a task assigned to it by the General Assembly during the last six years . . . .
Expresses its deepest dissatisfaction that efforts to complete the convention have not been successful and at the same time urges the Committee . . . to complete the draft convention on liability in time for final consideration by the General Assembly during its twenty-fifth session;
Emphasizes that the convention is intended to establish international rules and procedures concerning liability for damage caused by the launching of objects into outer space and to ensure in particular, the prompt and equitable compensation for damage.

90 See id. at 709-10; see also supra notes 46-48 and accompanying text.
the claims provisions of the Liability Convention. First, the Canadians and Soviets took more than a year to draft the settlement agreement. If the parties had adhered to the spirit of the Liability Convention, then the parties would have formed a Claims Commission. A Claims Commission is formed, however, only upon request; the Commission is not mandatory. Thus, if the two negotiating States wish to keep the discussion at a diplomatic level, they can conceivably do so indefinitely. The fact does not bode well for a private person seeking recovery. Second, no individuals suffered damage as a result of the Cosmos incident. To that extent, the whole exercise lacked the personal element of individual damages. Given the expected increase in private commercial space activity and the diversity of possible claims, it is hard to imagine any country spending their diplomats' time to settle what in many cases will be primarily private disputes.

D. Conclusion

The private person seeking recovery for torts in outer space faces two hurdles to clear when attempting to make a claim under international law. First, he must convince his government to bring the claim on his behalf. If the State does not wish to bring the claim for any reason, this avenue is closed. Second, even if the State does agree to bring the claim, uncertainty of both procedure and recoverable damages under the Liability Convention suggest that a private person may do better to seek redress in municipal courts. The courts of the United States will be popular for such actions, given their proven high damage awards.

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91 Schwartz & Berlin, supra note 46, at 678. The Canadians made their initial claim on March 23, 1979, and the claim was settled by a formal protocol signed in Moscow on April 2, 1981. Id.
92 Liability Convention, supra note 31, art. XIV.
93 Id. “[T]he parties concerned shall establish a Claims Commission at the request of either party.” Id. (emphasis added).
94 See Christol, supra note 57, at 347 (footnote omitted).
95 See Bosco, supra note 52, at 339.
IV. REMEDIES UNDER UNITED STATES MUNICIPAL LAW

A. Claims Against Private Parties

Using the United States courts as an example, the issue whether a private person may bring an action under municipal law against another private party depends on several fundamental factors. Questions of subject matter jurisdiction, personal jurisdiction over the defendants, and forum non conveniens will play important roles in bringing an action. Choice of law will also impact on the question, but will not have a direct effect on whether the action can be brought. This list of factors is not exhaustive, as that would be beyond the scope of this Comment. The goal of this Comment is to lay out a framework for determining the problems inherent in bringing claims for outer space claims under both international and municipal law.

1. Subject Matter Jurisdiction

a. Standards For Subject Matter Jurisdiction

Federal courts have jurisdiction over matters concerning federal law—so-called “federal question” cases and over cases in which the parties have complete diversity. Congress has not passed legislation that grants

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96 This Comment is concerned with private actions against aliens, both private entities and foreign governments. See infra notes 160-189 for a discussion of actions against foreign governments. For a comprehensive discussion of claims against the United States government, see Bosco, Liability of the United States Government For Outer Space Activities Which Result in Injuries, Damages or Death According To United States National Law, 51 J. AIR L. & COM. 809 (1986).

97 See infra notes 101-117 and accompanying text for a discussion of subject matter jurisdiction.

98 Plaintiffs, of course, submit to jurisdiction when they file the suit. See infra notes 118-139 and accompanying text for a discussion of personal jurisdiction.

99 Choice of law and choice of forum are useful as factors in deciding questions of forum non conveniens. See infra notes 140-157 and accompanying text.


federal question jurisdiction over claims of damage concerned with outer space,\textsuperscript{103} so injured parties will have to turn to alienage jurisdiction.

Federal courts have alienage diversity jurisdiction under 28 U.S.C. sections 1332(a)(2), 1332(a)(3) and 1332(a)(4). These provisions read as follows:

(a) The district courts shall have original jurisdiction of all civil actions where the matter in controversy exceeds the sum or value of $50,000, exclusive of interest and costs, and is between— . . .

(2) citizens of a State and citizens or subjects of a foreign state;
(3) citizens of different States and in which citizens or subjects of a foreign state are additional parties; and
(4) a foreign state . . . as plaintiff and citizens of a State or of different States.\textsuperscript{104}

Questions of diversity arise with respect to the definition of "citizens or subjects of a foreign state", especially in the case of a foreign corporation.\textsuperscript{105} In the United States, under 28 U.S.C. section 1332(c)(1) corporations are deemed a citizen of the state of its incorporation, and also of the state where it has its principal place of business.\textsuperscript{106} Courts apply this definition to alien corporations in different ways. Some courts apply section 1332(c)(1) to alien corporations as well, reasoning that Congress intended to limit access to federal courts.\textsuperscript{107} Congressional intention should be equally applicable to foreign corporations as it is to domestic ones.\textsuperscript{108} Other courts construed

\textsuperscript{103} Congress has extended criminal jurisdiction to vehicles in outer space registered to the United States. \textit{See} 18 U.S.C. § 7(6) (1982).


\textsuperscript{107} Rubenstein, \textit{supra}, note 105, at 289-90.

\textsuperscript{108} \textit{See}, \textit{e.g.}, Jergson v. Blue Dot Inv., Inc., 659 F.2d 31 (5th Cir. 1981) (court dismissed for lack of diversity where Florida citizen brought action in Florida against Panamanian corporation with its principal place of business in Florida); Arab Int'l Bank & Trust v. National Westminster Bank, 463 F. Supp. 1145, 1147 (S.D.N.Y. 1979) (court assumed that 28 U.S.C. section 1332(c) applied to alien
the statute as not applicable to aliens on statutory construction grounds. The United States Code refers to a state of the United States with a capital "S", and refers to foreign states with a small "s". These courts conclude that since section 1332(c) uses State with a capital "S", it must be referring exclusively to states of the United States. Given the purpose of alienage jurisdiction—avoiding possible state prejudice and dealing with foreign claims at the federal level to avoid offense to a foreign nation—the proper outcome should be that courts include all corporations incorporated in a foreign country within alienage jurisdiction.

If the action is brought in state court, the alien may remove to federal court pursuant to 28 U.S.C. section 1441. To remove, the action must have had complete diversity of parties originally, all the defendants must request removal, and none of the defendants can be a citizen of the state in which the action is brought.

Federal courts have no jurisdiction in several situations. The first is when a party is not a citizen of the United States or a citizen of a foreign country, for example a person who has political asylum in the United States but has renounced his citizenship. Second, the federal courts...
lack jurisdiction if, in addition to the alien, citizens of the same U.S. state are on both sides, thus destroying diversity. The same reasoning also applies when aliens are on both sides of the dispute.

b. Application To Outer Space Claims

Claims based on injury in outer space or from outer space objects will face the same problems as other international litigation in this area. To have alienage jurisdiction the plaintiff must avoid the situations described above which destroy diversity. One situation not considered in the section is when a foreign state is a defendant in a suit. The doctrine of sovereign immunity of states normally prevents any United States court from exercising jurisdiction over a foreign country. The special problems presented by this doctrine will be discussed in

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114 The United States Supreme Court ruled in Strawbridge v. Curtiss, 7 U.S. (3 Cranch) 267 (1806), that there must be complete diversity of citizenship between parties seeking federal court jurisdiction. In other words, each plaintiff must be capable of suing each defendant. See also Owen Equip. & Erection Co. v. Kroger, 437 U.S. 365, 373 (1978) (when defendant joined third party defendant of same state citizenship as plaintiff, the court dismissed the case for lack of diversity).

115 See Tsitsinakis v. Simpson, Spence & Young, 90 F. Supp. 578 (S.D.N.Y. 1950). The court stated the rule as follows:

It is well settled that in order to sustain jurisdiction of an action based on diversity of citizenship in the federal court, each plaintiff must be capable of suing each defendant in that court. The courts of the United States have no jurisdiction of a case in which both parties are aliens; if both a party plaintiff and party defendant are aliens the district court lacks jurisdiction, even though there are other parties in the action, as plaintiffs or defendants, who are citizens of the United States. Since in this action the plaintiff and the two defendants (who, it seems, are indispensable to the action) are aliens, the Court has no jurisdiction to entertain the action.

Id. at 579; see also Ed & Fred, Inc. v. Puritan Marine Ins. Underwriters Corp., 506 F.2d 757 (5th Cir. 1975) (court held that complete diversity did not exist in an action by an alien against the citizen of a state and another alien to collect on a marine policy). As the district court alluded in Tsitsinakis, if the parties are not indispensable, the court can simply sever them and continue the action with the remaining diverse parties. Id.

the section on the Foreign Sovereign Immunities Act.\textsuperscript{117}

2. Personal Jurisdiction

a. Standards For Personal Jurisdiction

Once the court has determined that it has subject matter jurisdiction, it must determine whether it has jurisdiction over the parties. If an alien plaintiff brings an action against an entity based in the United States, jurisdiction does not pose a problem, since the plaintiff may bring the action in federal court where the entity conducted the activities.\textsuperscript{118} For a foreign defendant the question becomes more complex.

Jurisdiction over foreign defendants depends on the long-arm statute of the state in question. States are not required to extend personal jurisdiction to federal constitutional limits.\textsuperscript{119} The same long-arm statutes apply to federal courts sitting in that state unless the matter falls within a federal statute and the statute has specific provisions for jurisdiction.\textsuperscript{120} Most cases against alien entities

\textsuperscript{117} See infra notes 158-189 and accompanying text.

\textsuperscript{118} Corporations must generally have a designated agent for service of process in their states of incorporation. For private parties, the state of residence provides the clearest case of sufficient contacts for personal jurisdiction. See infra notes 129-136 for a discussion of the minimum contacts doctrine.

\textsuperscript{119} V. NANDA & D. PANSIUS, LITIGATION OF INTERNATIONAL DISPUTES IN U.S. COURTS § 1.02, at 1-4 (International Business & Law Series vol. 4, 1988). Nanda and Pansius comment:

Thus, while due process represents the outer limits to which a state may constitutionally expand long arm jurisdiction, there are no considerations, constitutional or otherwise, which would compel a state to exercise jurisdiction to these limits. States are permitted to restrict state court (and thus federal district court diversity) jurisdiction over nonresidents.

\textsuperscript{120} FED. R. CIV. P. 4(e).

Whenever a statute or rule of court of the state in which the district court is held provides (1) for service of a summons, or of a notice, or of an order in lieu of summons upon a party not an inhabitant of or found within the state, or (2) for service upon or notice to such a party to appear and respond or defend in an action . . ., service may in either case be made under the circumstances and in the manner prescribed in the statute or rule.

\textit{Id.}; see supra notes 158-184 discussing the Foreign Sovereign Immunities Act as an
will be litigated in federal court, since even if the case is filed in state court, the defendant will remove to federal court.\textsuperscript{121}

Long-arm statutes present special problems. Due to the nature of outer space claims, part of the occurrences that make up the claim, including possibly the injury itself, may take place outside of any territory. Thus, if the long-arm provision does not extend to conduct outside the forum,\textsuperscript{122} the court must deny jurisdiction.

While the states can set stricter standards, to meet the requirements of the due process clause in the Fourteenth Amendment of the United States Constitution,\textsuperscript{123} the plaintiff must show "minimum contacts between the defendant and the forum such that the maintenance of the suit does not offend 'traditional notions of fair play and substantial justice.'\textsuperscript{124} The Due Process Clause also protects defendants against "the burdens of litigating in a distant or inconvenient forum."\textsuperscript{125} The first requirement, minimum contacts, applies to foreign defendants as well as domestic.\textsuperscript{126} The minimum contacts must also be such that the defendants would expect to be sued in that fo-

\textsuperscript{121} See V. NANDA & D. PANSIUS, supra note 119, § 1.04, at 1-24.10. The defendant would remove pursuant to 28 U.S.C. section 1441. \textit{Id.} Of course, if the action is brought where the defendant resides, the defendant cannot remove. 28 U.S.C. § 1441(b) (1982).

\textsuperscript{122} Several states have such provisions. See J. FRIEDENTHAL, M. KANE & A. MILLER, CIVIL PROCEDURE 143-44 (1985). Some legislatures have amended their long-arm statutes to eliminate this problem. \textit{Id.} at 144.


\textsuperscript{125} World-Wide Volkswagen Corp. v. Woodson, 444 U.S. 286, 292 (1980).

\textsuperscript{126} See Lilly, Jurisdiction over Domestic and Alien Defendants, 69 VA. L. REV. 85, 116 (1983).
In defining a reasonable expectation of an out-of-state suit, the United States Supreme Court has emphasized that the defendant must "purposefully avail" itself of the laws and protection of the forum, and that the claim must arise out of or be related to the activities in the forum.

While a contract with an out-of-state party does not constitute a contact on its face, other factors surrounding the contract may provide minimum contacts. Factors such as prior negotiations and contemplated future consequences, along with the contract terms and the parties' actual course of dealing, are essential in determining whether the defendant purposefully established minimum contacts within the forum. A contractual agreement by the defendant to a provision specifying the forum is another indication of purposeful availment.

In meeting the second requirement of protecting the defendant against burdensome and inconvenient litigation, the courts undertake an interest analysis to determine the reasonableness of conferring personal jurisdiction.

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127 See World-Wide Volkswagen, 444 U.S. at 297 "[T]he foreseeability that is critical to due process analysis... is that the defendant's conduct and connection with the forum State are such that he should reasonably anticipate being haled into court there." Id. at 297.


The unilateral activity of those who claim some relationship with a nonresident defendant cannot satisfy the requirement of contact with the forum State. The application of that rule will vary with the quality and nature of the defendant's activity, but it is essential in each case that there be some act by which the defendant purposefully avails itself of the privilege of conducting activities within the forum State, thus invoking the benefits and protection of its laws.

Id. at 253.

129 See Helicopteros Nacionales de Colombia, S.A. v. Hall, 466 U.S. 408 (1985) (Action was between a Colombian corporation and a joint venture in Texas. The court held that the cause of action must arise out of or be related to the corporation's activities within the state).


131 Id. at 479.

132 Id. at 487.
A strong enough showing of interest by the forum state can lead to jurisdiction with lower minimum contacts than would otherwise be necessary. In spite of the reasonableness of the jurisdiction, however, requirements of "fair play and substantial justice" may still defeat jurisdiction.

b. Application To Outer Space Claims

Although no "bright line rule" exists, several factors indicate that most outer space claims can meet the requirements of the Due Process Clause. First, if a United States corporation owns the object, jurisdiction is clearly present, since the corporation will at least be amenable to suit in its state of incorporation or principal place of business. Second, if an alien entity owns the object, then the court must determine if it has jurisdiction over a non-resident. To make that determination, the court will have to find minimum contacts with the state. The alien must have entered into negotiations and have executed a contract with NASA or a private United States company to launch the object. If a private company launches the object, the alien must have gone through the required licensing process before the launch. Finally, the contract might contain a choice of law provision. These factors

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133 World-Wide Volkswagen, 444 U.S. at 292. These interests include: the forum State's interest in adjudicating the dispute; the plaintiff's interest in obtaining convenient and effective relief, at least when that interest is not adequately protected by the plaintiff's power to choose the forum; the interstate judicial system's interest in obtaining the most efficient resolution of controversies; and the shared interest of the several States in furthering fundamental substantive social policies.

Id. (citations omitted).

134 Burger King, 471 U.S. at 477-78.

135 See supra notes 118-132 and accompanying text.

136 Burger King, 471 U.S. at 477.

137 The focus of this section is whether a potential litigant can bring suit at all. Considerations of the best strategic forum in which to bring the suit is outside the scope of this comment.

138 See supra notes 123-129 and accompanying text.

taken together arguably provide minimum contacts sufficient for jurisdiction.

The question of burdensome or inconvenient litigation in a specific fact situation is even harder to conduct than a minimum contacts analysis. At the very least, one can argue that the plaintiff's interest in gaining "convenient and effective relief" is high. Similarly, the forum state has an interest in seeing that its citizens are adequately compensated for damages suffered. However, the interest of obtaining the most efficient resolution of the controversy depends upon the extent of the defendant's contacts with the forum and the existence of alternative forums, the subject of the next section.

3. Forum Non Conveniens

a. The Doctrine

The principle of forum non conveniens allows a court to refuse jurisdiction when the suit may be brought more conveniently in another forum.\(^{140}\) *Gulf Oil Corp. v. Gilbert*,\(^{141}\) the early leading case for forum non conveniens, established several private and public concerns which impact on the decision to refuse jurisdiction.\(^{142}\) Private interests include access to evidence, availability of service, and enforceability of the judgment.\(^{143}\) Public interests include the local interest in deciding local controversies;

\(^{140}\) J. Friedenthal, M. Kane & A. Miller, *supra* note 122, at 89.
\(^{142}\) Id. at 508-09.
\(^{143}\) Id. at 508.

Important considerations are the relative ease of access to sources of proof; availability of compulsory process for attendance of unwilling, and the cost of obtaining attendance of willing, witnesses; possibility of view of premises, if view would be appropriate to the action; and all other practical problems that make trial of a case easy, expeditious and inexpensive. There may also be questions as to the enforceability of a judgment if one is obtained. The court will weigh relative advantages and obstacles to fair trial. It is often said that the plaintiff may not, by choice of an inconvenient forum, "vex," "harass," or "oppress" the defendant by inflicting upon him expense or trouble not necessary to his own right to pursue his remedy.

Id. (footnote omitted).
trying the case in the forum that is familiar with the applicable law; and avoiding court congestion.\textsuperscript{144} Gilbert concludes, however, that "unless the balance is strongly in favor of the defendant, the plaintiff's choice of forum should rarely be disturbed."\textsuperscript{145}

The United States Supreme Court considered the doctrine again in \textit{Piper Aircraft Co. v. Reyno}.\textsuperscript{146} The case arose out of the crash of a private airplane in Scotland. The Scottish decedents chartered the plane, which was operated by a Scottish air taxi firm, to fly from Blackpool to Perth.\textsuperscript{147} Defendants moved to dismiss on the grounds of forum non conveniens, and the district court granted the motion, citing Scotland's strong interest in the matter and the great expense and time involved with the trial.\textsuperscript{148} The Court of Appeals reversed on two grounds: first, that the district court abused its discretion in applying the Gilbert interest factors;\textsuperscript{149} and second, that dismissal for forum non conveniens is not appropriate where the substantive law of the foreign forum would be less favorable to the plaintiff.\textsuperscript{150}

\begin{itemize}
\item \textsuperscript{144} Id. at 508-09.
\item Administrative difficulties follow for courts when litigation is piled up in congested centers instead of being handled at its origin. Jury duty is a burden that ought not to be imposed upon the people of a community which has no relation to the litigation. In cases which touch the affairs of many persons, there is reason for holding the trial in their view and reach rather than in remote parts of the country where they can learn of it by report only. There is a local interest in having localized controversies decided at home. There is an appropriateness, too, in having the trial of a diversity case in a forum that is at home with the state law that must govern the case, rather than having a court in some other forum untangle problems in conflict of laws, and in law foreign to itself.
\item Id. at 508-09.
\item Id. at 508.
\item \textsuperscript{146} 454 U.S. 235 (1981) [hereinafter \textit{Piper Aircraft III}]. See infra notes 148 and 149 for citations to \textit{Piper Aircraft I} and \textit{Piper Aircraft II}, respectively.
\item Id. at 238-39.
\item Id. at 164.
\end{itemize}
The Supreme Court upheld the District Court, noting that "if conclusive or substantial weight were given to the possibility of a change in law, the forum non conveniens doctrine would become virtually useless."\(^{151}\) The Court also held that while a plaintiff's choice of forum should be regarded with deference, the primary purpose of forum non conveniens is to ensure a convenient trial, and thus a foreign plaintiff's choice is accorded substantially less deference.\(^{152}\) A United States plaintiff's choice of forum, however, is entitled to greater deference since the plaintiff has chosen his home forum.\(^{153}\)

The Piper Aircraft III court also noted that two other factors enter into the forum non conveniens calculus. First, the doctrine assumes the existence of another forum where the parties are amenable to process.\(^{154}\) Second, the alternative forum must have an adequate remedy available.\(^{155}\)

b. Application To Outer Space Claims

Forum non conveniens will play an important role when an alien is sued in the United States regarding a claim arising from outer space activities. As with personal jurisdiction, this determination is very fact-specific.\(^{156}\) For instance, in a case where a foreign corporation

\(^{151}\) Piper Aircraft III, 454 U.S. at 250.

\(^{152}\) Id. at 255-56.

\(^{153}\) Id.

\(^{154}\) Id. at 254 n.22; Gates Learjet Corp. v. Jensen, 743 F.2d 1325, 1335 n.4 (9th Cir. 1984). In remanding, the Court of Appeals noted that the District Court correctly began its forum non conveniens analysis with a determination of whether an alternate forum existed. Id. at 1335 n.4. Amenability to service of process satisfies this requirement. Id.

\(^{155}\) Piper Aircraft III, 454 U.S. at 254 n.22 ("[D]ismissal would not be appropriate where the alternative forum does not permit litigation of the subject matter of the dispute."). In Irish Nat'l Ins. Co. v. Aer Lingus Teoranta, the court found that the lack of an adequate remedy in conjunction with the other interests allowed the suit to be brought in the United States. Irish Nat'l Ins. Co. v. Aer Lingus Teoranta, 739 F.2d 90, 91-92 (2d Cir. 1984).

\(^{156}\) The United States Supreme Court stated:

Wisely, it has not been attempted to catalogue the circumstances which will justify or require either grant or denial of remedy. The doctrine leaves much to the discretion of the court to which plaintiff
manufactures a space object which injures a United States plaintiff, the case could be resolved in three different ways. First, if the injury results from a satellite falling back to Earth in the United States, the United States would have a strong interest in trying the case. Second, if the injury occurs in space as a result of an interaction with a space object, the overriding interest of territoriality is not present, because the injury did not occur in the United States. Questions of ease and convenience in the trying of any such case thus gain more weight. Third, whether the court must apply foreign law will impact on the forum non conveniens decision, but is not dispositive. Clearly, the alien defendant will want to move for dismissal on forum non conveniens in many cases, especially where the substantive law of the defendant's home state limits recovery. The outcome of the motion will depend on the specific fact situation.

B. Foreign Sovereign Immunities Act

Historically, nations have controlled space travel. While this situation is changing, a large number of claims involving outer space will involve nations or corporations owned by their respective governments. Initially, the United States Supreme Court refused to grant jurisdiction over sovereigns due to the doctrine of absolute sovereign immunity, but the view of sovereign immunity became more restrictive in the 1950's. Congress codified this restrictive view of sovereign immunity in the Foreign Sovereign Immunities Act.}

resorts, and experience has not shown a judicial tendency to renounce one's own jurisdiction so strong as to result in many abuses. Gulf Oil Corp. v. Gilbert, 330 U.S. 501, 508 (1946) (footnote omitted).

157 See Lehman v. Humphrey Cayman, Ltd., 713 F.2d 339, 345 (8th Cir. 1983) (court refused to dismiss on the grounds of forum non conveniens in wrongful death action brought in Iowa for boating death in the Grand Cayman Islands).

158 See supra notes 1-4 and accompanying text for a discussion of the factors that led to government control of space travel.

ereign Immunities Act of 1976 (FSIA). Thus, to sue a foreign sovereign state or its agent, the plaintiff must contend with the FSIA. One interesting effect of the FSIA is that aliens may be able to sue foreign states under the act without a United States citizen being a party to the suit, something previously impossible. The FSIA grants subject matter jurisdiction over any civil action against a foreign state in which that foreign state is not immune from suit. When the district court has subject matter jurisdiction and service has been made, the FSIA provides that the district court will have personal jurisdiction. Even under this broad grant of jurisdiction, however, the extension of personal jurisdiction is bound by constitutional limits.

Standards of the FSIA

Foreign states lose their immunity in specific, limited situations. Situations included in the FSIA that are most likely to arise in outer space claims are torts occurring in the United States, and commercial activity carried on by the foreign state. Importantly, to sue a foreign nation for a tort, it must have occurred in the

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161 Id. § 1604.
163 28 U.S.C. § 1330(a) (1982). The statute states: "(a) The district courts shall have original jurisdictional without regard to amount in controversy of any non-jury civil action against a foreign state . . . as to any claim for relief in personam with respect to which the foreign state is not entitled to immunity . . . ." Id. See infra notes 166-184 and accompanying text for a discussion of when foreign states lose their immunity.
164 28 U.S.C. § 1330(b) (1982). The statute provides: "Personal jurisdiction over a foreign state shall exist as to every claim for relief over which the district courts have jurisdiction . . . where service has been made . . . ." Id. See also Callejo v. Bancomer, S.A., 764 F.2d 1101 (5th Cir. 1985).
United States. That limitation precludes bringing suit against a foreign state for injuries suffered in outer space. In that situation the plaintiff would have to resort to the Liability Convention and international law for relief. The FSIA would grant jurisdiction, however, if the injury was caused by a satellite that had crashed in the United States.

The "commercial activity" exception offers a broad denial of immunity for contract claims. The FSIA defines "commercial activity" as "either a regular course of commercial conduct or a particular commercial transaction or act." The commercial activity need not have taken place in the United States, but need only have substantial contact with the United States. The commercial char-

169 28 U.S.C.A. § 1605(a)(5) (West Supp. 1989). The statute states: (5) [When] money damages are sought against a foreign state for personal injury or death, or damage to or loss of property, occurring in the United States and caused by the tortious act or omission of that foreign state or of any official or employee of that foreign state while acting within the scope of his office or employment .

Id. 170 See Persinger v. Islamic Republic of Iran, 729 F.2d 835 (D.C. Cir.) (court, in action by former hostage and his parents for injuries suffered during his detention and seizure, held that it was necessary that both the tort and the injury occur in the United States to avoid the defense of sovereign immunity) cert. denied, 469 U.S. 881 (1984).


172 28 U.S.C.A. § 1605(a)(2) (West Supp. 1988). In pertinent part, the statute reads:

(a) A foreign state shall not be immune . . . in any case— . . . (2) in which the action is based upon a commercial activity carried on in the United States by the foreign state; or upon an act performed in the United States in connection with a commercial activity of the foreign state elsewhere; or upon an act outside the territory of the United States in connection with a commercial activity of the foreign state elsewhere and that act causes a direct effect in the United States.

Id.


174 28 U.S.C. § 1603(e) (1982). Section 1603(c) provides that "[a] commercial activity carried on in the United States by a foreign state" means commercial activity carried on by such state and having substantial contact with the United States." Id. See also Behring Int'l, Inc. v. Imperial Iranian Air Force, 475 F. Supp. 383 (D.N.J. 1979), aff'd, 699 F.2d 657 (3d Cir. 1983) (commercial activity need only have substantial contact with the United States). But see Asahi Metal Industry Co., Ltd. v. Superior Court of California, 480 U.S. 102 (1987), in which a plurality of
acter of an activity is determined by examining the nature of the conduct or transaction, rather than looking at the stated purpose of the transaction.\textsuperscript{175}

An activity should not be deemed "commercial";\textsuperscript{176} rather, the focus of the exception should be on the particular facts, regardless of the party’s general commercial or governmental character.\textsuperscript{177} If a private party could normally engage in the activity, it is “commercial activity”; however, if the activity is one in which only a sovereign can engage, the activity is noncommercial for the purposes of the chapter.\textsuperscript{178}

Since the determination of “commercial activity” is fact-driven, one must look at situations where the United States courts have found commercial activity. These situations include banking agreements,\textsuperscript{179} termination of employment contracts,\textsuperscript{180} operating an airline\textsuperscript{181} and financing a power station.\textsuperscript{182} Situations that do not come within the “commercial activity” clause include takings

the court held that injecting a product into the “stream of commerce” is not by itself sufficient for the court to exercise personal jurisdiction over a defendant.\textsuperscript{177} Behring Int’l, 475 F. Supp. at 390; see, e.g., Brazosport Towing Co. v. 3838 Tons of Sorghum Laden on Bd. Barge NL No. 703, 607 F. Supp. 11 (S.D. Tex. 1984) (focus of commercial activity exception is whether particular conduct constitutes or is in connection with commercial activity, regardless of defendant’s generally commercial or governmental character) aff’d, 790 F.2d 891 (5th Cir. 1986); Resource Dynamics Int’l, Ltd. v. General People’s Comm. for Communications & Maritime Transp. in Socialist People’s Libyan Arab Jamahiriya, 593 F. Supp. 572 (N.D. Ga. 1984); MOL, Inc. v. Peoples Republic of Bangladesh, 572 F. Supp. 79 (D. Or. 1983), aff’d, 736 F.2d 1326 (9th Cir.), cert. denied, 469 U.S. 1037 (1984).


\textsuperscript{177} See Brazosport Towing Co., 607 F. Supp. at 11.

\textsuperscript{178} See International Ass’n of Machinists & Aerospace Workers v. Organization of Petroleum Exporting Countries, 477 F. Supp. 553 (C.D. Cal. 1979), aff’d, 649 F.2d 1354 (9th Cir. 1981), cert. denied, 454 U.S. 1168 (1982). Another factor to consider is whether the activity is one that an individual would customarily carry on for profit. See De Letelier, 748 F.2d at 790.

\textsuperscript{179} See Wolf v. Banco Nacional de Mexico, S.A., 739 F.2d 1458 (9th Cir. 1984), cert. denied, 469 U.S. 1108 (1985).

\textsuperscript{180} See Segni v. Commercial Office of Spain, 650 F. Supp. 1042 (N.D. Ill. 1986).


and conversions,\textsuperscript{183} and other situations where the nexus with the United States is not strong enough.\textsuperscript{184}

\textit{Application To Outer Space Claims}

The United States courts have interpreted the "commercial activity" exception broadly, and have applied it to a myriad of fact situations. Given the nature of the increased activity in outer space,\textsuperscript{185} most claims will arise either out of injury by returning satellites or out of contract claims regarding the launch or deployment of space vehicles. Since the nature and not the purpose of the activity controls the issue, the outcome in these cases will depend on when the nature is examined. For instance, since private companies are launching space objects, will all launches be regarded as commercial activity? The problem with this approach is the diversity of payloads. What about launches by governments for purposes such as military reconnaissance? What about governmental navigational and communications satellites? Clearly, private persons do not use military reconnaissance satellites; military surveillance is governmental in nature.

A possible solution would be to examine the outer space activities in discrete phases. The launch could be one phase, and if an accident or other problem occurs during launch, then the commercial activity exception applies. Once the satellite is deployed, however, if it has a clearly governmental purpose, such as military reconnaissance, sovereign immunity would bar any subsequent claims. If a private company launches a satellite for a government, some type of "government contractor" defense might apply, granting the private company immunity.\textsuperscript{186} Would the government be able to sue the private company for problems during launch? Since the launch

\textsuperscript{184} See Barnett v. Iberia Air Lines of Spain, 660 F. Supp. 1148 (N.D. Ill. 1987).
\textsuperscript{185} See supra notes 1-27 and accompanying text.
would remain a discrete commercial activity, the "discrete phase" test answers those questions. After deployment, however, the nature of the payload would determine further applicability of the commercial activity exception.

Another question of immunity is that of immunity of international organizations. International organizations have immunity in the United States under the International Organization Immunities Act (IOIA). The IOIA grants immunity to those international organizations of which the United States is a member and which the President has designated as being entitled to enjoy privileges and immunities under the IOIA. Currently, the President has designated the European Space Agency and Intelsat as international organizations under the IOIA.

V. CONCLUSION

Outer space activity will increase significantly in the coming years. With increased private commercialization of space launches, private claims will inevitably increase. The question, therefore, of effective and sufficient private remedies for outer space claims gains increasing importance. For a private person, recovery under international law is fraught with uncertainty. The Liability Convention has never been invoked where a personal injury composed part of the claim. Questions remain as to exactly what damages are recoverable. Although some commentators think that damages such as physical pain and mental anguish are recoverable under the Convention, the fact remains that the Liability Convention is a political document providing for diplomacy as a means for dispute settlement. If the governments do not wish to form a Claims Commission and

188 Id.
190 See supra notes 1-39 and accompanying text.
191 See supra notes 80-94 and accompanying text.
192 See supra notes 52-63 and accompanying text.
begin the formal procedure under the Convention, the Liability Convention does not force that procedure upon them.  

Furthermore, a private person may not be able to recover under the Liability Convention due to the express exceptions from coverage.  

The government need not bring the claim on behalf of an injured citizen.  

The government may have already pledged in a multinational agreement not to bring any claims against the alleged injuring country.  

Because of timing requirements in the Liability Convention and statutes of limitations in municipal law, a plaintiff may be forced to choose between international law and municipal law at the outset of the litigation.  

International law is unpredictable and political enough to make municipal law, especially in the United States, a very attractive alternative.  

Municipal law, however, is not without its own pitfalls. Using the United States courts as an example, the court must first have subject-matter jurisdiction over the matter. Without federal question jurisdiction such as that granted by the FSIA, diversity questions can cause significant problems.  

Second, the courts may not be able to exercise personal jurisdiction over the defendants.  

Another forum may have greater interests in solving the dispute, leading a court to grant a motion for dismissal on forum non conveniens grounds.  

If the defendant is an alien sovereign or its instrument, the FSIA grants both subject matter and personal jurisdiction. However, torts that are the basis for any claim against a foreign sovereign must have taken place in the

193 See supra notes 91-93 and accompanying text.  
194 See supra notes 68-69 and accompanying text.  
195 See supra notes 64-67 and accompanying text.  
196 See supra note 67 for an example of a contract which includes waiver of liability.  
197 See supra notes 70-79 and accompanying text.  
198 See supra notes 104-115 and accompanying text.  
199 See supra notes 118-139 and accompanying text.  
200 See supra notes 140-157 and accompanying text.  
201 See supra notes 163-165 and accompanying text.
Contract claims against foreign governments, on the other hand, enjoy significantly greater success in United States courts due to the broad reading of the "commercial activity" exception.203

A major advantage of United States municipal law is its predictability. Even though the court must engage in fact-specific balancing tests, the tests have already been defined to a great extent. Courts in the United States also provide the opportunity for large damage awards, allowing recovery in a number of categories not present in international law, such as lost earning capacity and lost inheritance. Unless the United Nations significantly modifies the international dispute settlement process, municipal law provides the most beneficial avenue for recovery for private claims resulting from outer space activities.

202 See supra notes 169-170 and accompanying text.
203 See supra notes 172-194 and accompanying text.