AN INTEGRATED LEGAL SYSTEM FOR SPACE +

by
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Currently there are 560 space shuttle operations planned through 1992.[1] If each of these operations were to carry a six-man crew, 3,300 astronauts would be launched into space before the end of this century. While the space shuttle is the only means of space transportation now being geared up for operational use, plans are being considered for other methods of low cost access to the vast regions beyond the earth's atmosphere. As cheaper transportation provides greater access to space, entry into space by commercial firms is certain to expand.[2] Some experts predict space industry revenues will reach $20 billion annually by the year 2000.[3] Products and processes already being considered are: satellites (for communication, remote sensing and solar power), crystal growth, pharmaceuticals, alloying of metals and ball bearings, electronic components, and ultrapure exotic materials that can be produced in zero gravity.[4] A recent survey shows that a sizeable selection of U.S. companies are already contemplating spaceborne activity. Boeing has conducted a study for NASA that involves converting the sun's rays to electrical power and beaming them to earth. The plan would require scores of shuttle flights to build a construction base in space and would require a five hundred man construction crew for about a year to build a solar power satellite.[5] In a more conjectural vein, Professor O'Neill of Princeton proposes a beachhead manufacturing plant in space with a large factory of workers living within a one-mile circumference of the plant.[6] It is

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[1]Hearings on H.R. 2221 Before the House Subcommittee on Space Science and Applications of the Committee on Science and Technology, 94th Cong., 2d Sess., (1976) [1 1978 NASA Authorization, 394 (1976)] (hereinafter cited as 1978 NASA Authorization).

[2]1966 proposal for a "skyhook"; a cable from a satellite in geostationary orbit to earth. Payloads would be sent up the cable mechanically: Hearings Before the House Subcommittee on Space Science and Applications of the Committee on Science and Technology, 94th Cong., 1st Sess. (1975) (*Future Space Program 1975*, 198 (1975).

[3] *"The Shuttle Opens the Space Frontier to U.S. Industry," Bus. Week,* August 22, 1977, at 49.

[4]The most important system being considered by NASA is the Space Construction Base, *see* 1978 Authorization at 399. This space station would serve for a ten year study of space industrialization and satellite power generation. *Id.* Also being studied are: large structures in orbit via the shuttle and development of Heavy Lift Launch Vehicles. *Id.* at 400, 415.

[5] *Akron Beacon J.*, February 1, 1978, at 2.

[6]. *New Scientist,* June 23, 1977, at 720.

entirely possible that the number of persons, including scientists, engineers, and other members of the labor force, who cross the threshold into space before the end of this century may exceed present estimates by the tens of thousands.[7]

As we penetrate the space frontier in large numbers, the legal problems which confront us on earth will also ascend into the space environment. Human activity cannot long endure in a legal vacuum. Affairs in space will have to be subject to the same complex legal regime which exists on earth. An established order brings stability to human conduct and provides the predictability so needed to promote human progress and maintain harmonious relationships.

The foundation for such a legal regime has already been set forth in such documents as, the Outer Space Treaty of 1967,[8] the Treaty on the Rescue and Return of Astronauts and Return of Space Objects of 1968,[9] the Convention on Liability for Damage Caused by Space Objects of 1972[10] and the Convention on Registration of Space Objects of 1975[11]. Some of the fundamental principles provided therein are that in outer space: international law applies;[12] there can be no national appropriation by claim of sovereignty or by use or by occupation;[13] and states bear international responsibility for their national activities.[14] Also provided is that the activities of nongovernmental entities require the authorization and continuing supervision of the appropriate state, and that jurisdiction and control over space launched objects and the

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[7]Prof. Gerard K. O'Neill believes a beachhead manufacturing plant in space could be built well before the turn of the century which could build one new colony every two years. He estimates that this could lead to as many as 200,000 people living in space by the year 2000. Lutz-Nagey, *"Gerry O'Neill and His Solar-Powered Space Factory", Automation,* July, 1976, at 22.

[8]The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (hereinafter referred to as the Outer Space Treaty) was signed on January 27, 1967 and entered into force October 10, 1967 [1967] 18 U.S.T. 2411, T.I.A.S. 6347, 610 U.N.T.S. 205.

[9]Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space, April 22, 1968, [1968] 19 U.S.T. 7570, T.I.A.S. 6599, 67 U.N.T.S. 119 (hereinafter cited as Rescue and Return Agreement or Rescue Agreement).

[10]Convention on International Liability for Damage Caused by Space Objects, March 29, 1972 [1973] 24 U.S.T. 2389, T.I.A.S. 7762 (hereinafter cited as Liability Convention).

[11]Convention on Registration of Objects Launched into Outer Space, January 14, 1975_____U.S.T._____, T.I.A.S. 8480. See also Hearing before the Subcommittee on Space Science and Applications of the House Committee on Science and Technology, 94th Cong., 2d Sess. (1976).

[12]Outer Space Treaty, Art. III.

[13]*Id.* Art. II.

[14]*Id.* Art. VI.

personnel therof, while in outer space, remains with the launching state.[15] These principles are a foundation, but only a foundation, for the web of intricate rules which must accompany any sustained and concentrated use and exploration of the realms beyond this earth.

Broadly speaking, there are two views as to how law may emerge for outer space. One view is that this new arena for human endeavor is so vast, so potentially hostile, and so unique that a completely new, perhaps even revolutionary, legal system is necessary. As early as 1961, this view was raised. At that time Ambassador Jha of India was asked whether merely overlaying international law on outer space would suffice. He wrote:

> When the day comes that men of various nations, through international cooperative efforts, journey into outer space, the concepts of nationality, territorial affiliations, (and other concepts) should perhaps be forgotten and will be out of place in outer space. International law may need radical adaptation, conceptual or otherwise, for application to outer space.[16]

The other view is that existing terrestrial laws should be adapted to the space environment without any radical break. A soviet author, Academician E.G. Vassilevskaya, has stated that the expansion of space activities from pure science to the applied use of outer space makes it necessary to develop further "the law-making activity in the exploration and use of outer space."[17] Whichever view one takes, however, it is not likely that a suddenly new and detailed set of laws for spaceborne activity can be compiled without a greater depth of experience. Existing executive, legislative and judicial processes are earthbound. For the foreseeable future, at least, the judges, administrators and legislators who must settle, regulate, or pass laws to cover spacebound controversies sit on this earth and are trained under the great legal systems, principally the common and civil law systems, which exist here. Terrestrial law as applied and administered to earthly activities will have to be adapted for outer space. The question then is which terrestrial law. There are fifty-two legal systems in the U.S. alone and well over 200 throughout the world, each having potential application to outer space. The various legal systems of the world are not uniform in their legislative and judicial approach to international activity. Completely diverse decisions can turn on the system of justice brought to bear on the dispute or controversy which arises in space. Ideally there should be substantial integration of all the civilized legal systems in their applications to outer space. There is precedent. The treaties creating the European

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[15] *Id.*

[16] S. Lay and H. Taubenfield, *The Law Relating to Activities of Man in Space* 66, note 15 (1970) (statement of Ambassador Jha). *See also,* R. Chernow, *Colonies in Space May Turn Out to Be Nice Places to Live,* 6 Smithsonian Magazine 62 (Feb. 1976).

[17] D. Vassilevskaya, *Drawing up a Draft Treaty on the Moon,* Proceedings of the Nineteenth Colloquium on the Law of Outer Space 99 (1977). Finch and A. Moore, *Ecospace: The Economics of Outer Space and the Future,* 62 A.B.A. J. 338 (March, 1976).

Communites provided for substantial harmonization of the national laws of the signatory countries.[18] Scandanavian countries have also succeeded in unifying large segments of their laws.[19] It is also possible that the practice of spacefaring nations will produce a common law analagous to the maritime law developed by seafaring states, although such a development is not likely in this rapidly unfolding space age.

Undergirding the extension of any national or international laws into outer space are the paramount issues of state, federal and international jurisdiction. Jurisdiction has a dual meaning. It means the capacity to prescribe a rule of law and it also means the capacity to enforce that rule.[20]

The Outer Space Treaty deals primarily with prescriptive rather than enforcement jurisdiction. By providing that the registry State retains jurisdiction and control over its objects and personnel *while in outer space or on a celestial body,* amenability to legal process on return to earth is not within the bounds of the treaty. The treaty also provides that nongovernmental entities in outer space shall be authorized and supervised by the appropriate State. The operative words are "while in outer space" and "in outer space."[21] Once personnel and objects return to earth, they come within the territorial and national jurisdiction of local law enforcement agencies. While torts may occur, crimes may be committed, and contracts breached in outer space, the pursuit of legal remedies, civil or criminal, is earthbound. Two of the great legal systems of the world, the common and civil law systems, approach the exercise of terrestrial jurisdiction from different viewpoints. In the case of tort or crime, the common lawyer will be first interested in where the incident giving rise to the complaint occurred, and also whether the tortfeasor or perpetrator is within the court's reach. The civilian lawyer will have more interest in the nationality of the parties and objects involved, the victim, and actor, and the craft. The principle and often the exclusive basis for the exercise of prescriptive or enforcement jurisdiction in a common law country is territorial. The United States is a good example of a sovereign which closely adheres to the common law. In the matter of prescriptive jurisdiction, the Supreme Court has written that "the legislation of Congress, unless a contrary intent appears, is meant to apply only within the territorial jurisdiction of the United States."[22] When it comes to enforcement (or adjudicatory) jurisdiction, common law systems generally require that physical presence,

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[18]E. Stein, *Assimilation of National Laws as a Function of European Integration,* 58 A.J. Int'l. L. 1 (1964).

[19]N. Pontoppidan, *A Mature Experiment: The Scandinavian Experience,* 9. Am.J. Comp. L. 344 (1960).

[20]Restatement (second) of Foreign Relations §§ 17, 20 (1965). For a proposal to promote a functional jurisdiction in outer space, *see* I. Csabafi, *The Concept of State Jurisdiction in International Space* Law 126-151 (1971).

[21]Outer Space Treaty, Arts. VI, VIII.

[22] *Foley Bros. v. Filardo,* 336 U.S. 281, 285 (1948).

voluntary consent, or certain minimum contacts with the forum are essential for the court to take *in personam* jurisdiction. In civil law systems, nationality is the prime basis for the exercise of either prescriptive or enforcement jurisdiction. In France, for example, a civil court may exercise its powers over any alien, wherever he may be, who breaches his duty to a French national.[23] Neither the tortious conduct nor the alien defendant himself need be located in that country.

With the placing of the European Space Agency's (ESA) Spacelab in orbit by the launch of a U.S. space shuttle in 1980, a shirtsleeve environment for the conduct of scientific and technical experiments will be provided for astronauts of different nationalities. Assume six space scientists, three American and three French are actively engaged in research on board and that they remain in orbit for thirty days. An American scientist is negligent. He mishandles an experiment and a French colleague is seriously injured. Upon their return to earth the Frenchman may sue the American in a French court although the American has never been in France and has no relationship with the country other than that the tort is committed upon the Frenchman. Neither the Outer Space Treaty nor the Liability Convention deny the right of spaceborne personnel to seek a remedy within their own legal system. Suppose, however, it is the Frenchman who is negligent and the American scientist who is injured. The American wishes to sue in a U.S. court. Our courts may refuse to exercise their adjudicatory jurisdiction over the French scientist unless he is personally summoned within the political boundaries of the court, or consents to the suit, or otherwise can be found to have some minimum relationship with the forum state. The American may be compelled to sue in a French court and under an unfamiliar law. It is true the same disparity of jurisdiction exists on earth. The factors that intensify this situation in outer space, however, are the close living quarters and sustained and frequent contacts which human activity in space will engender. West German law provides an even more exorbitant basis for the exercise of adjudicatory jurisdiction than does France. The German code of civil procedure provides that a claim for money damages may be asserted in the court of any district wherein the defendant has property.[24] This is not like a common law in rem proceeding where the property itself may be the subject of the dispute. Once the defendant's property is found within its political boundary, the German court has personam jurisdiction up to the amount of provable damages which may far exceed the value of the property. To take an extreme case, a book or a scientific paper forwarded to a German colleague may vest the appropriate German court with power to decide a spaceborne tort committed by the alien property owner.

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[23]Art. XIV Civil Code cited from H. deVries, N. Galston and R. Loening, Materials for the French Legal System 2 (1977).

[24]deVries and Lowenfeld, *Jurisdiction in Personal Actions-A Comparison of Civil Law Views,* 44 Iowa L. Rev. 306, 334 (1959).

Assume now the conduct of our luckless American scientist in the ESA spacecraft is so reckless that it amounts to criminal conduct. Will a U.S. criminal court have competence to prosecute? In common law systems, criminal offenses must be defined by statute and they are not applied extraterritorially, absent clear legislative intent.[25] The application of this rule was clearly expressed in a case involving an assault by a Puerto Rican passenger upon the pilot of a U.S. commercial aircraft in flight over the high seas. At the time, the admiralty and maritime jurisdiction of the United States extended to crimes committed "upon the high seas or on any other waters within the admiralty and maritime jurisdiction of the United States and out of the jurisdiction of any particular state."[26] In arresting judgment against the Puerto Rican passenger, the federal district court held that a statute regulating crime *upon* the high seas did not provide a federal court jurisdiction to consider an offense committed *over* the high seas. Shortly after this decision Congress extended the special maritime and territorial jurisdiction of the United States to include aircraft in flight over the high seas.[27] More recent cases have determined that the "special maritime and territorial jurisdiction" of the United States extends to homicides committed on an iceflow in the Arctic Ocean,[28] and on the grounds of the U.S. Embassy in equatorial Guinea.[29]. U.S. legislation now provides for a special aircraft jurisdiction of the United States.[30] This jurisdiction extends to civil and military aircraft of the United States while in flight and any other aircraft within the United States or outside the United States when its next scheduled destination or last point of departure is in the United States. Anyone who commits assault upon a flight crew member on board an aircraft within this special aircraft jurisdiction is subject to punishment by a U.S. federal court. This special aircraft jurisdiction extends to most federal crimes when committed in the airspace on board civil and military aircraft of the United States while in flight, and any other aircraft within the United States or outside the United States when its next scheduled destination or last point of departure is the United States.[31] The Chief Counsel of the Federal Aviation Administration advised the General Counsel of NASA in March 1977 that the Space Shuttle was not an aircraft.[32] It is doubtful that a court would construe the special aircraft jurisdiction of the U.S. as extending to an act onboard the shuttle even within the airspace.

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[25] *U.S. v. Bowman*, 260 U.S. 94 (1922).

[26] 18 U.S.C. §451 (1950).

[27] *U.S. v. Cordova*, 89 F. Supp. 298 (E.D.N.Y. 1950).

[28] *U.S. v. Escamilla*, 467 F2d 341 (4th Cir. 1972).

[29] *U.S. v. Erdos*, 474 F.2d 157 (4th cir. 1973).

[30] 49 U.S.C. § 1301(32) (1970).

[31] *Id.*

[32] Letter from the Chief Counsel of Federal Aviation Administration to the General Counsel of NASA (March 11, 1977).

There is no express statute conferring U.S. jurisdiction in federal courts for offenses committed in outer space. However, there is a Senate proposal to revise the criminal laws of the United States which would extend federal criminal jurisdiction to outer space. The special jurisdiction of the U.S. is rewritten in the Senate bill to cover "aerospace jurisdiction" which applies to "any aircraft or spacecraft of the United States during flight or while in outer space."[33] Also covered would be any other spacecraft or persons in space "if and to the extent provided by treaty or other international agreement having the force of a treaty."[34] Certain crimes against the United States do have extraterritorial reach. A federal statute making interstate or foreign thefts a federal offense could apply to a theft from a spacecraft or satellite, even with the strict construction required in applying a criminal law. The statute provides "whoever embezzles, steals, or unlawfully takes. . . from any. . .other vehicle, or from any station, platform or depot, or from any air terminal, aircraft terminal or air navigation facility. . .shall be fined not more than $5,000 or imprisoned not more than ten years, or both. . . ."[35] Certain other crimes against the United States have extraterritorial reach such as treason, perjury committed before a U.S. officer abroad, and conspiracy against the United States.[36] However, the bulk of U.S. criminal law is based on territorial application. Absent some legislative provision creating a special spacecraft jurisdiction, many spaceborne crimes may not be punishable in the United States. Civil law systems retain a strong nationality and protective basis for the exercise of criminal jurisdiction. The French code of criminal procedure provides that a French citizen abroad who commits an act "qualified as a crime punishable by French law may be prosecuted and judged by the French courts."[37] An alien outside France who commits a crime against a French citizen may also be prosecuted in a French court under French law.[38] Turkey and Mexico are examples of other civil law countries which provide for national competence offenses abroad committed against their nationals.[39] Such penal laws, having no territorial limitation, can easily be assumed to apply in an outer space environment as well.

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[33]Proposed Amendments to the Federal Criminal Laws: Hearings Before the Senate Subcommittee on Criminal Laws and Procedures of the Committee on the Judiciary, 93rd Cong., 1st Sess. (1973) (Reform of the Federal Criminal Laws 4229 (1973)).

[34] *Id.* at 4228.

[35]18 U.S.C.*2* 659 (1970).

[36] *U.S. v. Bowman,* 260 U.S. 94 (1922) (conspiracy); *U.S. v. Pizzarusso,* 388 F.2d 8 (2d Cir. 1968) (perjury); *Gillars v. U.S.,* 182 F.2d 962 (D.C. Cir. 1950) (treason).

[37]Article 689 French Code of Criminal Procedure, cited from H. deVries, N. Galston and R. Loening, *supra* n. 23.

[38] *Id.* at 90. (Article 689-1).

[39] *France V. Turkey,* P.C.I.J. Ser. a, No. 10, (1927), 2 Hudson World Court Reporters 20 (1935); *The Cutting Case,* 1887 U.S. Foreign Rel. 757 (1887).

In the case of the commission of a crime on board a U.S. spacecraft by a foreign national, Professor Gorove believes Article VIII of the Space Treaty, which provides that the registry State retains jurisdiction over its spaceborne objects and personnel while in outer space, applies. He calls it an example of primary jurisdiction and writes:

> It is hard to visualize how the state of registry without some additional understanding or agreement. . . would be willing to surrender foreign personnel and other visitors to the foreign state for what would appear to be trial and punishment, by waiving its primary jurisdiction.[40]

Nevertheless this treaty jurisdiction applies in outer space only. The disparate viewpoints as to the exercise of terrestrial jurisdiction that now prevail among the various legal systems on earth still require harmonization if some uniformity is to be obtained for the punishment of criminal offenses committed in outer space.

Another problem which our disparate legal systems generate is the thorny issue of choice of law. Once a court assumes jurisdiction, it may be even more difficult for it to decide which law to apply to the spaceborne event. Each legal system builds its own substantive law (*e.g.*, torts, property, contracts and crimes). Legal determinations may depend on whose law applies. Contributory negligence may defeat the claim of the U.S. space scientist in one jurisdiction and only mitigate the damages in another. In one State the amount of damages recoverable for wrongful death may be limited by statute, and in another any limitation may be constitutionally prohibited. Where title to property is transferred in outer space, one terrestrial jurisdiction may place risk of loss on the seller until delivery, while another may place it on the buyer. The same negligent conduct of a spacefarer may make his earthbound employer liable in one jurisdiction and not in another. The doctrine of respondeat superior is only one example. What rules will develop as to the standard of care for space activity, as to justified risk, and as to unforeseeable or intervening causes are also important but as yet undefined legal criteria. Dr. Robinson of the Smithsonian Institution even suggests that the quality of life in space may be so unique that new approaches are required by lawyers to settle these questions.[41] As the legal systems which may handle the dispute on earth multiply, the greater the probability of variation of the ultimate outcome.[42]

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[40]Gorove, *Criminal Jurisdiction in Outer Space*, 6 Int'l. Law. 313, 320 (1972).

[41]Robinson, *Space Law*, 80 Tech. Rev. 62, No.1 (October/November 1977).

[42]It may be that contractual choice of law and even choice of forum clauses should be concluded between the launching authority and the spaceborne personnel to make certain the applicable court and law. *See* as to choice of law *Scherk v. Alberto-Culver Co.*, 417 U.S. 506 (1974). *See* as to choice of forum *M/S Bremen v. Zapata Off-Shore Drilling*, 407 U.S. 1 (1972).

In many common law jurisdictions, courts will apply the law of the place where the tort occurred, where the contract was executed or to be performed, or where the property was located when title passed, to determine the rights of the parties. Where the relevant events have transpired outside the forum State, the court searches for the applicable foreign substantive law. Assume a civil action by an injured scientist is commenced in Ohio for a spaceborne tort. Under the rule of lex loci delicti (the law of the place of the tort), the Ohio court would be at a loss to determine the substantive rights of the parties for a spaceborne tort. Should the court apply Ohio tort law for want of an alternative? Or should it apply the law of the place where the victim resides or has his nationality, or the law of the State registering the craft, or the law of the nationality or residence of the tortfeasor? Applying forum law may lead to forum shopping whereby the victim seeks the most hospitable jurisdiction in which to make his claim. On the other hand, applying any of the other possible laws may be no more equitable when balancing the interests of all the States and parties. Suppose the negligence of the U.S. scientist results in the death of a colleague on board a spacecraft. At common law there was no remedy for wrongful death. Every state in the Union has now enacted a wrongful death statute. The Ohio wrongful death statute is typical. It provides that when death is caused by the wrongful act, neglect, or default in another jurisdiction, for which a right to maintain an action and recover damages is given by statute, such right of action may be enforced in Ohio.[43] However, where there is no statutory right to recover from wrongful death as in the case of outer space, will a court in Ohio judicially extend the Ohio wrongful death statute into outer space, or seek to apply the Federal Death on the High Seas Act? Or will the Court decide no cause of action is stated for want of an applicable statue?

Until 1970 the Supreme Court held there was no common law right of recovery for wrongful death on the high seas.[44] In 1920, Congress passed the death on the High Seas Act to provide a civil remedy for death on the high seas.[45] It authorized a personal representative of the decedent to sue in a federal district court in admiralty for the benefit of the decedent's next of kin. Since 1941 the Death on the High Seas Act has applied to aircraft as well as to vessels. In one celebrated air law case the court said:

> The means of transportation into the area is of no importance. The law would indeed be static if a passenger on a ship were protected by the act and another passenger in the identical location 3,000 feet above in a plane were not. Nor should the plane have to crash in the seas to bring the death within the Act any more than a ship would have to sink as a prerequisite.[46]

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[43] O.R.C. § 2125.01 (Baldwin 1976).

[44] *The Harrisburg*, 119 U.S. 199 (1886) overruled by *Moragne v. States Marine Lines*, 398 U.S. 375 (1970).

[45] Death on the High Seas Act, 46 U.S.C.§§ 761-767 (1970).

[46] *D'Aleman v. Pan American World Airways*, 259 F.2d 493, 495 (2d Cir. 1958).

Will the courts apply the Act to deaths 300 miles above the surface of the seas if they apply it 3,000 feet above? It is extremely doubtful that it will be judicially extended so high. Absent a new enactment specifically reaching into space, the forum court must either apply its own wrongful death statute or reject the lawsuit of the decedent's plaintiff.

Limitation of liability for extraterrestrial conduct also poses a serious question. The doctrine of limitation upon an owner or operator's liability has been a part of maritime law for most of the shipowning countries of the world for centuries, and a part of aviation law for international air carriers for over forty years.[47] The rationale behind this limitation is that ship owners and air carriers need protection from overwhelming losses. The loss limitation for ship owners may be based on the value and weight of the vessel, while the limitation of liability for international air carriers is set forth by international treaty. The consequences of a mishap in outer space, bringing loss of life, personal injury, property damage, or damage to the earth's environment, may be far more catastrophic than such loss occurring from mishaps at sea or in the airspace. Public policy dictates that this risk should not be borne by private spacefaring companies alone. The liability imposed by the convention on a launching State for damage caused by its space object does not exhaust all the problems which may occur. It does not cover injury or damage to nationals of the launching State or to foreign nationals participating in an operation of the launching State's space object. It does not cover damage caused by spaceborne personnel, unless the damage is precipitated by a space object. Most significantly, it does not preempt any remedy an injured party may have under his own law. Adequate, prompt, and full relief for harms caused by activity in space will frequently lie outside the Liability Convention.

Since the Liability Convention provides no remedy for a U.S. national who suffers injury either caused by a U.S. space object or while he is on board a U.S. spacecraft, he must look to U.S. legislation for any claim against the government. Tort claims against the federal government are a major source of tort litigation, and the principal legislation waiving governmental immunity is the Federal Tort Claims Act.[48] At one time, suits pending before the federal courts involving claims under this Act amounted to considerably more than $300 million.[49] However, the Federal Tort Claims Act is inapplicable by its terms "to any claim arising in a foreign country."[50] This foreign

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[47]Limitation of Liability Act, 49 Stat. 960 (1935) (Current version, at 46 U.S.C.§§ 183, 185 (1970)). For aviation law, see The Convention for the Unification of Certain Rules Relating to International Transportation by Air, October 13, 1929, 49 Stat. 3000 T.S. 867.

[48]Federal Tort Claims Act, 28 U.S.C.§ 1346 et seq. (1970).

[49]L. Jayson, Handling Federal Tort Claims 1, 7-8 (1974).

[50]28 U.S.C.§ 2680 (K) (1970).

country exception has been held to bar a suit against the government for a wrongful death occurring at a Newfoundland U.S. airbase under a long-term lease to the United States.[51] It has also been held to bar suits against the government for claims arising in occupied areas which are not under the sovereign jurisdiction of the United States.[52] Since the Outer Space Treaty provides that the outer space is not subject to national appropriation by claim of sovereignty, the rationale of the Supreme Court in limiting the scope of the Federal Tort Claims Act would seem to preclude its application to wrongful conduct by governmental employees in outer space. There are other obstacles to recovery under the Federal Tort Claims Act. First, the Act does not apply where the negligent conduct involves a discretionary function of a U.S. employee.[53] Liability of the U.S. under the Act is based on fault; strict liability principles do not apply.[54] Second, the Act does not cover intentional torts.[55] Prior to instituting suit, the plaintiff must present his claim to the "appropriate federal agency" for administrative consideration.[56] Finally, the Act looks to the law of the place where the act of omission occurred to determine substantive rights. For spaceborne torts, a federal district court has no substantive "law of the place" to follow.

Claims against the U.S. for harm caused by NASA or its personnel are covered by the National Aeronautics and Space Act of 1958.[57] The Act provides NASA with authority to settle any claim for $5,000 or less against the U.S. "for bodily injury, death, or damage to or loss of personal property resulting from the conduct of the Administration's function where such claim is presented to the Administration in writing within two years after the accident or incident out of which the claim arises."[58] Where the claim exceeds $5,000 and it is considered meritorious by NASA, it is "to report the facts and circumstance to Congress for its consideration." The NASA Act has no territorial restrictions and applies to conduct of NASA personnel in space as well as within the earth's environment. In addition, there is no requirement that fault be established. If the damage was caused by the conduct of NASA employees, presumably it will be treated as a meritorious claim. Where the claim results from serious injury or

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[51] U.S. v. *Spelar*, 338 U.S. 217 (1949).

[52] *Burna v.* U.S., 240 F.2d 720 (4th Cir. 1957).

[53] *Eastern Air Lines v. Union Trust Co.*, 221 F.2d 62 (D.C. Cir. 1955).

[54] *Laird v. Nelms*, 406 U.S. 797 (1972).

[55] 28 U.S.C. § 2680 (h) (1970).

[56] 28 U.S.C. § 2675 (1970).

[57] National Aeronautics and Space Act (1958) (amended 42 U.S.C. § 2451 et seq. (1970)).

[58] 42 U.S.C. § 2473 (13) (A) (1970).

death, or serious property loss, the $5,000 limitation will be inadequate and it will have to be approved by Congress.[59] Our injured space scientist may still prefer judicial, rather than administrative and legislative settlement. The NASA Act does not preclude any other available remedy, and our injured space scientist may seek his remedy in a competent national court. However, the sovereign immunity of the United States will bar his suit unless he can convince the court the Federal Tort Claims Act applies in space, and the negligient conduct of NASA personnel does not involve a discretionary function.

NASA is presently evaluating a proposal to turn the management of nearly all space shuttle operations over to private contractors by 1982.[60] This would have significant legal implication as to tort liability and contractual obligation for space performed transportation. Such managers would not benefit from the sovereign immunity of the U.S. nor would the Federal Tort Claim or NASA acts be applicable to their conduct. It would expose them to the same liability and responsibility which private enterprises retain in space or on earth.

Apart from the need to unify an approach on jurisdiction and choice of law issues and the need to synchronize the national application of torts, contracts and property law, there is also an urgent need to transfer principles of maritime salvage to outer space. The Agreement on the Rescue and Return of Astronauts and the Return of Space Objects is not sufficiently comprehensive.[61] It imposes a duty upon contracting states to assist the personnel of spacecraft in distress and to recover and return disabled or lost space objects upon request. However, the treaty obligations are imposed upon *Contracting Parties* and *Intergovernmental Organizations* and not upon private enterprise. A private person who saves property at sea voluntarily may receive a generous reward. The reward is not based on compensation for work done, a quantum meruit, but is based on the risks involved and the skill displayed by the salvor.[62] As more objects are launched into space, and as privately owned satellites begin to proliferate, towing and rescue operations may become widespread. Privately operated salvage operations seem likely to occur. Where a contracting state has made no request for the return of a space object, and therefore no duty devolves upon other contracting parties to locate and return the disabled or missing spacecraft, the space objects may still be found and towed to safety by another privately owned craft. Anything salvageable in space that is found and returned by private enterprise should result in compensation to the rescuing party. The maritime law of salvage is complex and detailed. It has accumulated throughout the

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[59] 42 U.S.C.§ 2473 (13) (B) (1970).

[60] *Av. Week & Space Tech.*, March 16, 1978, at 12.

[61] For a detailed analysis of the Rescue Treaty, *see* Dembling and Arons, *The Treaty on Rescue and Return of Astronauts and Space Objects*, 9 Wm. & Mary L. Rev. 630 (1968).

[62] G. Gilmore and C. Black, The Law of Admiralty 532 (2d ed. 1975).

centuries of maritime practice; it is a part of the jus gentium and is nearly uniform among the seafaring countries. U.S. courts exercise a discretionary jurisdiction over salvage claims at sea which have no U.S. contact except the happenstance that the rescuers libel the salved ship in a U.S. court. [63] Since maritime salvage law has been carefully elaborated over many centuries of commerce, and since the high seas is under no State's sovereignty, matitime principles may be readily adaptable to operations for private salvage in space.[64]

The time has come for a select number of distinguished lawyers, representing the principal legal systems of the world, to assess the many diverse laws which *could* apply to space activity and determine how to establish a uniform order of law for space. Such a distinguished group of jurists could materially aid in the progressive development of a uniform system of law by proposing how the rules of the various common, civil and other legal systems of the world could be blended for compatible application in outer space. The group could also evaluate how much of international air and maritime law could be transferred to the fourth dimension. Their objective would not be to develop a new code of space law, but to establish a common consensus as to how to allocate jurisdiction for extraterrestrial activity, how to choose the applicable substantive law, and how to provide for some judicial uniformity. Mrs. Galloway,[65] the well known consultant on international space activities, has written that partial approaches to the establishment of a legal regime in outer space could result in inconsistencies which could not be later codified into an harmonious legal system. The objective, she writes, is to secure the maximum of States becoming parties to the total structure of space law rather than the maximum number of treaties.

One way to achieve a community-wide consensus on the elevation of national law and judicial competence to outer space is through the International Law Commission. This Commission was established by the General Assembly to make recommendations on the progressive development and codification of International Law. As an adjunct to the International Law Commission, the General Assembly could now create a special committee to work on Space Law implementation. This committee could function under the Committee on Peaceful Uses of Outer Space and work closely with the Outer Space Affairs Division of the UN Secretariat. By means of this new committee, all

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[63] *See Usatorre v. Compania Argentina Navegacion Mihanovich Ltda.*, 49 F. Supp. 275 (S.D.N.Y. 1942) rev'd on other grounds. 172 F.2d 434 (2nd. Cir. 1949). *See also Lauritzen v. Larsen*, 345 U.S. 571 (1953).

[64] In 1963 M. Menter, then a Colonel in the U.S. Air Force wrote that "[a]nalagous related laws such as the law of the sea and air law" must be examined for their applicability to outer space. M. Menter, Formulation of Space Law, Proceedings of the Sixth Colloquium on the Law of Outer Space 2 (1964).

[65] Galloway, The Future of Space Law, Proceedings of the Nineteenth Colloquium on the Law of Outer Space, Edited by Schwartz, p. 15 (October 12-15, 1976, Anaheim, California).

nations would share in the adaptation of earthly laws to outer space, and hopefully a jus gentium would emerge for outer space as it has for the high seas.

Perhaps a more productive way of bringing about a unification of law for space would be through the institution of the Hague Conference on Private International Law. This conference of government experts has been meeting every four years since 1893 to prepare international agreement on the codification of private international law. There are now 28 members to the Conference including the United States and Japan. An extraordinary session could be summoned and nonmember States, particularly those represented on the Committee on the Peaceful Uses of Outer Space, as well as member States could be invited. Since World War II, The Hague Conference has been especially successful in harmonizing community law, and a number of potential conflicts of national laws have been reconciled through treaty. Particularly significant agreements have been concluded on choice of court, relation of national law to law of domicile, selection of jurisdiction, the taking of evidence, and the enforcement of judgments.[66] It would be a great stride toward the vaster exploration of space if a special session of the Conference could set forth a series of agreements on the integration of national laws for space application.

Finally, there are several private organizations or academic institutes which might take up this task. The International Law Association, or the American Society of International Law have the talent and resources to lead the way. Among the academic institutions, the Institutes of Air and Space Law at McGill University and at the University of Cologne also have the depth of experience and the background in several legal systems to begin to etch out the needs and priorities for agreements among space States on the harmonization of space law.

Certainly we have reached a critical state in outer space development. With the space shuttle age approaching, lawyers must not fall back in the task of developing a scheme for a legal system beyond the earth which will produce international cooperation rather than generate transnational conflict.

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[66]For a listing of the conventions drafted by The Hague Conferences *see* 13 Int'l. Legal Materials 474 (1974).