

VI - TORT LAW IN SPACE

A. Applicable Law

As people begin to live and work in space, incidents of damage caused by intentional actions or negligence are certain to occur. Individuals seeking compensation for damage to property or personal injury may look either to international space law or to the tort laws of their own or other nations. Unfortunately, none of these courses of action is without difficulty. Current international space laws are little more than agreed fundamental principles, and no efficient mechanisms exist for applying these principles to specific cases. National tort laws, on the other hand, are well developed but vary drastically from country to country. In the United States, certain elements of tort law are not even consistently applied among the different States. Furthermore, some States have recently enacted legislation that limits the recovery of certain types of damages in tort suits.

1) International Law

As discussed above, article VI of the Outer Space Treaty provides that states party to the treaty bear "international responsibility for national activities in outer space," and that the activities of "nongovernmental entities" (i.e., individuals, corporations, etc.) "shall require authorization and continuing supervision by the appropriate State Party to the Treaty." Article VII of the Outer Space Treaty declares that a launching state is "internationally liable for damage to another State Party to the Treaty or to its natural or juridical persons. . ." The 1973 Liability Convention restates and expands on the principles established in article VII of the Outer Space Treaty and provides specific procedures for making and settling claims.

Although the Outer Space Treaty and the Liability Convention establish several key principles--e.g. , absolute liability for damage on Earth or in the air, and liability of the launching state for either government or private sector activities--both treaties leave a great many questions unanswered. Three important problems raised by the current international space liability regime are:

- o Uncertain applicability to activities aboard space stations. There is considerable doubt as to whether the Liability Convention could ever be applied to injury or damage caused by persons participating in space station activities. Article VII states that the Convention does

not apply to either the "nationals of [the] launching state" or "foreign nationals. . . participating in the operation of that space object. . ." This paper previously examined four different ways to own, operate, and register a space station. No matter which of these was chosen, it is likely that the participants would either be "nationals of [the] launching state" or "foreign nations. . . participating in the operation of that space object. . ." Therefore, the Liability Convention would not apply. For example, under article VII of the Liability Convention, if a U.S. astronaut were killed by the negligence of either another U.S. astronaut or a foreign astronaut, the family of the U.S. astronaut could not file a claim for damages under the Liability Convention because the United States was the "launching state."

- o Lack of attention to damage caused by, and the liability of, individuals.⁹² Both the Outer Space Treaty and the Liability Convention focus on damage caused by space objects rather than on damage caused by individuals in space. This is understandable because the primary concern of the drafters was probably to offer some degree of protection from falling or colliding space objects. The crash of the radioactive Soviet satellite, Cosmos 954, in Canada was an example of the kind of injury best suited to the protections of the international treaties.

On a space station, however, individual personal injury actions resulting from intentional actions or negligence are likely to predominate. A good example of the Liability Convention's lack of attention to the role of individuals in space can be seen in its application of the doctrines of "strict" and "fault" liability. According to the terms of the treaty, a launching state whose space objects cause damage on the surface of the Earth or to aircraft in flight is strictly liable for the damage caused. States whose space objects cause damage to other objects in space are liable only after fault has been established. However, no such division between strict liability and fault liability is made with respect to individual conduct.

It is generally held, at least in common law countries, that strict liability applies to certain abnormally dangerous conditions and activities.⁹⁴ Since, at present, most space activities might be

92 See also: Hamilton DeSaussure, P.P.C. Haanappel, "A Unified Multinational Approach to the Application of Tort and Contract Principles to Outer Space," *Syracuse Journal of International Law and Commerce*, vol. 6, No. 1, summer 1978.

93 "Strict" and "fault" liability explained, *supra*, note 22.

94 DeSaussure and Haanappel, *supra*, note 92.

regarded as "abnormally dangerous."⁹⁵ one might argue that "fault" should play a diminished role in space.⁹⁶ On the other hand, one could also argue that all persons on the space station are to some degree engaged in an "abnormally dangerous" activity and that this is quite different from the situation on Earth where the injured party might not be a participant in the activity in question.

- o No efficient mechanism for resolving disputes between individuals. Serious questions exist as to whether current international laws could be applied to assist individuals. The 1967 Outer Space Treaty and the Liability Convention establish no cause of action, no courts, no rules of procedure, and no method of enforcing even agreed resolutions. Lacking such mechanisms, claimants are forced to rely on the diplomatic procedures commonly used between nations.

Article VIII of the Liability Convention requires that the state--not

95 It is useful to remember that when the aviation industry began, some courts regarded air travel as abnormally dangerous and imposed a strict liability standard; with experience and technical improvements, the negligence standard gradually gained prominence.

96 It might be argued that eliminating the necessity to prove fault and thereby forcing all actors in space to cope with a strict liability scheme would be socially desirable for many of the same reasons that strict liability is used on Earth; that is, to make those engaged in dangerous activities liable for the consequences of such activities. However, such a requirement could diminish the pursuit of commercial space opportunities by placing a heavier liability burden on these activities.

97 Maritime law offers some interesting insights into the question of liability for injury to individuals on board a space station. Under maritime law, the shipowner must furnish a vessel that is seaworthy in all respects. (see: *Mitchell v. Trawler Racer, Inc.*, 362 U.S. 539.) The shipowner's duty is nondelegable and the fact that the shipowner used 'due diligence' to make the vessel seaworthy is no defense if a member of the ship's crew is injured by some defect. What constitutes a defect has been broadly construed, and so has the question of who is a seaman for the purpose of bringing an unseaworthiness action.

The concept of 'seaworthiness' --or in this case, 'spaceworthiness' --may eventually be a useful addition to space law, as it could serve to protect space workers and transfer the risk of liability to the spacecraft owner, who presumably, is in a better position to assess the risks of a particular activity.

With respect to liability as *between* spacefarers, the concept of fault may be more useful. How fault would be determined and what defenses would be permitted (e.g. , contributory negligence, fellow servant rule, assumption of risk) are some of the most challenging questions that are likely to accompany the development of a tort law for space.

the injured person--present the claim to the "launching state"--not the person⁹⁸ who caused the injury. Because nations and not individuals are involved, under article IX, claims for compensation must be presented "through diplomatic channels." If the two states in question do not have diplomatic relations then the claimant may present its claim through another state or through the Secretary-General of the United Nations. Assuming that a claim has been filed and diplomatic negotiations have failed for a year, then article XIV authorizes the parties to set up a "Claims Commission" composed of three members (the two parties and an agreed chairman).

2) National Tort Laws

Perhaps in anticipation of the problems mentioned above, the drafters of the Liability Convention stated in article XI that: "Nothing in this Convention shall prevent a State, or the natural or juridical persons it might represent, from pursuing a claim in the courts. . .of a launching state." Indeed, given the vague nature of the Liability Convention as compared with the well-defined state of domestic law, it would be unlikely that any individual would ever use it to obtain compensation for injury.

Having acknowledged this, it is then necessary to inquire which domestic laws would be applicable to a given case. Whenever individual relationships transcend the boundaries of one jurisdiction, conflicts arise concerning the applicable substantive law, the jurisdiction of national courts, and enforcement of foreign judgments.¹⁰⁰ For example, every nation has its own methods for choosing the law applicable in a specific case. The most common of these are:

- o The *lex loci delecti*, that is, the law of the place where the offense occurred. Outer space, being *res communis* and, therefore, not subject to national law, has no clear 'law of the place.' Whether or not the *lex loci delecti* rule can be applied to the space station will depend on how nations agree to exercise jurisdiction and control over the space station.

- o The *lex fori*, that is, the law of the forum where the case is brought. This approach could be used on the space station, but again, would depend on how questions of jurisdiction and control are resolved.

⁹⁸ The treaty does not actually speak of "persons" who cause damage, only "space objects" which cause damage.

⁹⁹ see, for example: Scott F. March, "Dispute Resolution in Space," *Hastings International and Comparative Law Review*. vol. 7, p, 211, 1983,

¹⁰⁰ See generally: P.P.C. Haanappel, "Possible Models for Specific Space Agreements," Hamburg Space Station Symposium, 1984.

o The law of the state having the greatest interest. This rule--probably the prevailing U.S. standard--looks to which state's contacts with the incident are the most substantial and applies the relevant laws of that state. Because of its flexibility, this rule could have the greatest applicability to space station activities.

An important alternative (at least in contract, if not in tort cases) would be for the parties to stipulate both the applicable national law, and the applicable forum. This practice is frequently followed in multinational business contracts. This approach has two major defects. First, such stipulations would constrain only those who signed them. As space stations become larger, employing greater numbers of people, it may be impossible to anticipate and draw up contracts to cover all the interpersonal relationships that could develop. Second, some courts look with disfavor on contracts that attempt to divest them of jurisdiction. For example, a French citizen has a statutory right to resort to the French judicial system even if the damage was caused on foreign soil or by a foreigner.¹⁰¹ It is possible that a French court would choose to ignore a contract clause that attempted to divest its citizens of this right.

Given the current level of space activity, another solution to the problem of liability might be to negotiate interparty waivers of liability. The limitation of such agreements is that they only cover signatories. Interparty waivers of liability were used in the 1973 Spacelab Agreement,¹⁰² the 1985 Memorandum of Understanding (MOU) regarding Phase B of the space station negotiations, and are regularly used in shuttle launch agreements.

Article 11 (A) of the Spacelab Agreement, for example, provides that the United States "shall have full responsibility for damage to its nationals. . . [resulting from] . . .this agreement. " The ESA nations accept a similar "responsibility" under this article. In other words, the United States would not sue ESA for damage to U.S. nationals or property and vice

101 Fr. C. civ. art. 14, reprinted in H. De Vries, N. Galston, R Loening, *Materials for the French Legal System* 2, 2d ed., 1977. Article 14 provides:

An alien, even one not residing in France, may be summoned before the French courts for the fulfillment of obligations contracted by him in France; he may be brought before the French courts for obligations contracted by him in a foreign country toward French persons.

Under French law "obligations" refers to tortious (delictual) as well as contractual obligations. See also: DeSaussure and Haanappel, *supra*, note 92.

102 Space Laboratory: Cooperative program, 24 U.S.T. 2049; TIAS 7722.

103 See: "Memorandum of Understanding Between the National Aeronautics and Space Administration and the European Space Agency for the Conduct of Parallel Detailed Definition and Preliminary Design Studies (Phase B) Leading Toward Further Cooperation in The Development, Operation and Utilization of a Permanently Manned Space Station, " June 3, 1985.

versa . However, article 11 (C) acknowledges that in the event injury is caused to persons not party to the agreement, "...such damage shall be the responsibility of. ..[the United States or ESA]. ..depending on where the responsibility falls under applicable law." The 1985 space station MOU between NASA and ESA extends the interparty waiver of liability to the Phase B contractors and subcontractors; however, third parties are still not covered under the agreement.

B. Future Developments

Current international space law will continue to be an effective means for allocating responsibility and liability for incidents which occur between nations. For example, should a space object of one nation fall on the territory of another nation or should one nation's space object collide with a space object of another nation, the principles found in the 1967 Outer Space Treaty, the Registration Convention, and the Liability Convention will, when combined with serious diplomatic efforts, be sufficient to resolve these problems. As space activities increase and technologies grow more complex, some refinement of these principles will probably be necessary; nonetheless, the existing framework is workable *when applied to national activities*.

Unfortunately, the legal regime for redressing individual grievances resulting from space activities is not nearly so well established. As discussed above, international space law, with its heavy reliance on diplomacy, is too unwieldy for most tort actions between individuals, and negotiated interparty waivers of liability do not address the problem of third-party plaintiffs.

National tort laws, although well defined, differ considerably and no consensus exists on when to apply the laws of one or another nation. The actions necessary to resolve this problem vary with time:

o Short-term solutions (shuttle activities). Because the shuttle carries multiple and often multinational payloads, NASA has had to develop policies regarding both liability between mission participants (interparty liability) and liability with respect to parties unrelated to the mission (third-party liability) .¹⁰⁴ With respect to interparty liability, the standard shuttle launch agreement contains a mutual covenant not to sue similar to the one found in the Spacelab Agreement.

To cover the possibility of third-party suits, NASA also requires shuttle payload owners to purchase insurance to protect against damage to property and injury to persons unrelated to the space activities. This third-party insurance would, for example, be used to compensate individuals on Earth for damage they sustained as a result of de-orbiting space debris.

¹⁰⁴ See: Maj . Bruce A. Brown, "Commercial Law and Liability Issues of the Space Transport System, " *The Air Force Law Review*, vol. 23, Nos. 3 & 4, 1982-83, p. 424.

The liability procedures currently used by NASA are sufficient while the U.S. Government operates the shuttle, the shuttle crews are small and well-disciplined, and commercial insurance is available.¹⁰⁵ As space activities become more complex and numerous, existing procedures will have to be reexamined.

o Medium-term solutions (government space stations). Liability issues on the first generation of government-owned space stations could be handled by using the methods similar to those NASA now employs on the shuttle. The space station owner and operator, whether it be one nation or a consortium of nations, could require all other nations to waive their right to sue each other and require all participants to self-insure or purchase commercial insurance for third-party claims.

As space stations grow in size and complexity and become staffed by civilian employees, it will probably be necessary to develop more flexible rules for compensating individuals injured in space. A logical next step might be to negotiate international agreements similar to the NATO Status of Forces Agreements that would designate which nation's laws would apply in which situations. As mentioned above, it is not clear whether all national courts would feel constrained to respect these contracts.

o Long-term solutions (private space stations and beyond). Eventually, space travel will be quite common and individuals may visit neighboring space stations much as we now visit neighboring countries. A rule could develop which places on the space traveler the burden to know the law of the place visited; that law would govern all civil and criminal actions resulting from the traveler's visit. Alternatively, nations may strive to achieve international uniformity in the application of 'conflicts rules.' The 1955 "Hague Convention on the Law Applicable to the Sale of Corporeal Moveable Objects" and the 1973 "Hague Convention on the Law Applicable to Products Liability" are examples of such attempts. In the 1973 Products Liability Convention, nations agreed to apply the law of the habitual residence of the victim, or subsidiarily, the law of the place where the damage has occurred. Similar international agreements for applying Earth law to space activities may be necessary. Finally, nations may attempt to create a uniform substantive tort law system for activities in outer space.¹⁰⁷

¹⁰⁵ There is considerable concern about the *long-term* health of the insurance industry. See: "Insurance and the Commercialization of Space," Senate Committee on Commerce, Science, and Transportation; 99th Cong., 1st Sess., S. Print 99-16, March 1985.

¹⁰⁶ P.P.C. Haanappel, "Product Liability in Space Law," *Houston Journal of International Law*, vol. 2, No. 1, autumn 1979, p. 61.

¹⁰⁷ International aviation law conventions such as Warsaw (49 Stat. 3000; T.S. 876; LNTS 11) and Rome (310 U.N.T.S. 181) might serve as models.