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Wolcott, Space Shuttle Liability

SOME ASPECTS OF THIRD PARTY LIABILITY IN SPACE SHUTTLE OPERATIONS

THEODORE E. WOLCOTT*

IT IS NOT MY intention to make a clause by clause analysis of the Space Liability Convention or treaties related thereto, an undertaking already effectively performed by others. The series of postponements of the Shuttle launch has left the initial takeoff date uncertain, thus enhancing the academic aura of this paper. Insofar as presently may seem feasible, the primary concern herein is from the point of view of a practicing American lawyer.

I. THE SHUTTLE SYSTEM

The Space Shuttle will operate somewhat like a conventional transport system. Although the purpose of the Space Shuttle is similar in some respects to the Skylab program in that it is research oriented, the Shuttle takes a new approach to "life science" experimentation in outer space. The space shuttle orbiter is designed with a central space lab component within which scientific exploration of various kinds can be carried on for short terms in an environment where the experiments can be closely observed, handled and adjusted by personnel present within the module.

A unique aspect of the program contributing to its relative economy is the intent to reuse certain components on a continuing basis. The three main parts of the Shuttle include a set of two solid fuel booster rockets, a large external liquid fuel tank and the orbiter.¹ Of these, only the liquid fuel tank will be destroyed and this upon reentry.² The two solid fuel rockets are designed to jettison and reenter from an altitude of 150,000 feet to an area where they will be retrieved for re-use.³ The orbiter is similar in outward aspect to a conventional airplane and is about the size of a DC-9.⁴ It is designed to land on an airstrip and to be reused.⁵ The Space Shuttle, however, is not generally considered an aircraft.⁶

The orbiter configuration allows for the exposure of experiments to open space through the use of pallets behind the space lab module. These

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¹ HOUSE COMM. ON SCIENCE AND TECHNOLOGY, 96th Cong., 2d Sess., STATUS REPORT ON SPACE SHUTTLE 1980, 2 (Comm. Print 1980).

² *Id.* at 4.

³ *Id.*

⁴ NASA, NASA FACTS 4 (NF-79/6, 1977).

⁵ STATUS REPORT ON SPACE SHUTTLE 1980, *supra* note 1.

⁶ Letter from General Counsel of FAA to General Counsel of NASA (March 11, 1977).

open space experiments can be manipulated through the use of extravehicular personnel or by an onboard remote control device. Additionally, objects may be launched into space from the orbiter for direct exposure in that environment. This procedure is termed a "free-flying payload." These payloads, when left within the orbital pattern of the Shuttle, may be retrieved by a future Shuttle or maintained there on an ongoing basis by personnel who regularly pass the object.⁷

Space will be made available to public or private bodies and institutions including foreign States for conduct of scientific experiments on a cost related basis in a field designated by NASA as Life Science Investigations on Space Shuttle/Spacelab missions. As described by NASA:

The Space Transportation System (STS) will be used to transport life sciences flight experiments to and from earth orbit. The STS consists of several elements:

- The Space Shuttle system, including the Orbiter and booster rockets, and the spacecraft crew.
- The Spacelab, including pressurized module and pallets, mounted in the payload bay of the Orbiter.
- A communications network including ground and satellite facilities.
- Facilities for flight experiment and vehicle integration, testing, launch, and landing.
- Ground facilities for monitoring and supporting mission and payload operations.⁸

NASA has published a series of booklets laying down detailed guidelines, conditions and restrictions governing the nature of the experiments including the flight cargo space requirements and limitations, nature of onboard supervision, packing, loading and ground-orbiter data transmission. Selection of the particular payload experiment and the charges therefor are reserved to NASA. The latter criteria particularly establish that the Shuttle is not a common carrier operation, and can be more likened to a contract carrier insofar as its liability is concerned.⁹

II. SOME ASPECTS OF THIRD PARTY LIABILITY

The experimental purpose of the flight and the experimental nature of the payloads presumably would be known to the participating users as would the inherent risks involved *vis a vis* NASA, each other, outside parties, and user-supplied personnel (designated "payload specialists"). The possibilities of mishap are many with corresponding exposures to liability.

⁷ *Space Shuttle Payloads, Hearings on Candidate Missions for the Space Shuttle Before the Senate Committee on Aeronautical and Sciences*, 93rd Cong., 1st Sess., Part 2, 6 (1963).

⁸ NASA, *Life Sciences Guide to the Space Shuttle and Spacelab*, 1-1 (U.S. Government Printing Office No. 1978-261-371-27).

⁹ *Meteor. Air Transport, Inc.* 12 C.A.B. 384 (1951); *Arrow Aviation Inc. v. Moore*, 266 F.2d 488, 490 (8th Cir. 1959).

A. *Liability of NASA as the owner-operator*

1. **The Cargo Launch Agreement.** Presently, NASA is developing a draft cargo launch agreement which will define many of the rights between NASA and the user of Space Shuttle services (User). Article V, "Allocation of Certain Risks," is of special interest. Section 3 thereof provides for certain waivers between the parties. NASA and the User agree that, with respect to damage to persons or property involved in Space Transportation System (STS) operations, neither NASA nor the User, nor any person who has contracted with NASA or the User for STS services or who owns property or employs a person to be flown on the Shuttle, shall make any claim with respect to injury to or death of its own or its contractor's or subcontractor's property or personnel caused by NASA, the User or any other person involved in STS operations during such operations, whether such injury, death or damage arises through negligence or otherwise.¹⁰ This paragraph does not prevent a claim being made as between a User and its own contractor or subcontractor or between NASA and its own contractor or subcontractor for damage during STS operations. NASA and the User agree to incorporate Section 3 into appropriate contracts and subcontracts at every tier, so that its provisions will be binding upon each of its contractors or subcontractors who may obtain STS services or who may have on board a Shuttle flight its employees or property. Although this agreement is not binding on third parties, NASA's policy with respect to insurance requirements is of practical importance to potential third party claimants.

Article V-2 of the draft provides that:

The User shall obtain at no cost to NASA insurance protecting the United States Government and its contractors and subcontractors from any third-party liability for any Damage resulting from a free-flying Payload after separation of the Payload from the Shuttle . . . A Payload which remains tethered to the Shuttle shall not be considered a free-flying payload.

The developing policy of NASA, as recently described in *Aviation Week*, goes beyond the earlier draft agreement:

Key elements of the basic NASA position on shuttle insurance are:

Property damage and injury to launch participants - Each user will be required to agree not to bring any action against another user sharing the same shuttle payload bay or the U.S. government for damage to it or its contractors, hardware, or personnel. In return, the U.S. government will agree not to bring any action against a shuttle user for damage to federal property, including the space shuttle orbiters,

¹⁰ NASA, *Shared Shuttle Launch Agreement for Payload Launch and Associated Services*, draft 030879 (issued by NASA, Office of Space Transportation Operations, March 8, 1979, Washington, D.C.).

each valued at about \$500 million. This policy will allow each contractor to take care of his own hardware, simplifying insurance and shuttle manifest preparations. It also releases a payload sponsor from the responsibility of repaying the government if his payload is responsible for damaging or destroying a \$500-million orbiter. NASA believes shuttle insurance would have been virtually impossible to obtain and users would not be eager to use the shuttle unless its policy absolved the users from responsibility for reimbursement for damage to the shuttle spacecraft.

Third-party liability - This insurance would cover "innocent victims" who might be affected if an accident occurred, and also includes re-entry of spacecraft over populated areas years after their launch. The policy states that the user shall obtain insurance at his expense and at no cost to NASA, protecting the U.S. government and its contractors from any third-party claims related to the user's payload (including upper stages) following separation from the space shuttle. Since a problem could develop prior to separation from the shuttle, another clause states that claims arising from shuttle launch activity prior to a user's payload separation from the shuttle shall be apportioned under U.S. Federal law. NASA wants to require each user to buy the maximum amount of insurance available at a "reasonable" premium to cover third-party liability. It hopes this will total \$300-500 million per space shuttle flight.¹¹

2. The Space Treaties. Under the aegis of the United Nations, a series of space treaties has been promulgated which has a direct bearing upon the issue of liability.

Under Articles VI and VII of the *Treaty of Principles*,¹² the United States, as the launching State, would be responsible for damages to third parties.

The key treaty dealing with liability is the *Convention on International Liability for Damage Caused by Space Objects*.¹³ Article I deals with definitions:

For the purposes of this Convention:

(a) The term "damage" means 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;

(b) The term "launching" includes attempted launching;

(c) The term "launching State" means:

¹¹ *Shuttle Expected to Increase Insurance*, AVIATION WEEK & SPACE TECHNOLOGY, 147, 149, April 30, 1979.

¹² Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, 610 U.N.T.S. 205 (effective Oct. 10, 1967).

¹³ Mar. 29, 1972, 24 U.S.T. 2389, T.I.A.S. No. 7763 (effective Oct. 9, 1973).

- (i) A State which launches or procures the launching of a space object;
 - (ii) A State from whose territory or facility a space object is launched;
- (d) The term "space object" includes component parts of a space object as well as its launch vehicle and parts thereof.

Interpretation of "space object" becomes of particular importance in view of the nature of the Shuttle, its cargo and the fact that free-flying payloads may be launched into space from the Shuttle. There can be little doubt that these Shuttle progeny must be deemed space objects launched by NASA within the definition of Article I(d) for at least two reasons. First, it is an object launched into space by NASA as operator of the Shuttle, pursuant to the user contract; and second, under subsection (d), it may be deemed either a component of a space object and of the launch vehicle or part thereof. There is reason to expect a liberal interpretation in favor of an innocent victim.

What about the pieces of the cargo that would be launched into space in the event of an outer space breakup of the Shuttle orbiter? They are "component parts" of the launch vehicle just as other structure or equipment. Compare a rail carrier's responsibility for damage caused by dangerous cargo.¹⁴ If the particular cargo is owned by another State, query: Does that State come within Article I, (c),(i), as a State which . . . procures the launching of a space object," and is it therefore liable as a launching State for damage caused by its cargo when the cargo becomes a space object as above? Liability under the convention applies only to States and not to other categories of users. Two or more States jointly launching a space object are jointly and severally liable.¹⁵ A launching state shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight.¹⁶ This would clearly apply to NASA and in the circumstances above noted also to a State "user." As to damage caused elsewhere than on the surface of the earth, Articles III, IV and V attach liability for fault and where liability is joint, provide for apportionment and indemnity. Article VI provides a defense to absolute liability where the damage is caused by the gross negligence or intent of the claimant. References to "States" include any "international governmental organization which conducts space activities" under certain conditions.¹⁷

However, pursuant to Article VII, the Convention does not apply to nationals of the launching State and to participating foreign nationals. Ac-

¹⁴ 13 C.J.S. *Carriers* §§ 527, 528 (1939).

¹⁵ Convention on International Liability for Damage Caused by Space Objects, *supra* note 13, at Art. V.

¹⁶ *Id.* at Art. II.

¹⁷ *Id.* at Art. XXII.

cordingly, American citizens with claims against NASA would be excluded from the benefits of the Convention as well as foreign crew members, scientists or payload specialists. Fortunately, other remedies against NASA are available both through administrative agencies or the United States courts. They will be discussed below. A claims procedure is set out in Article VIII through Article XXII. Rather complicated, it is set forth on diplomatic lines. In view of the remedies available in the United States for processing claims against NASA, discussion of these provisions is deemed unnecessary here.

Two other U.N. sponsored treaties are applicable: *The Convention on Registration of Objects Launched into Outer Space*¹⁸ and *Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space*.¹⁹ The definition of "space object" as stated in Article I(b) of the Convention on Registration is the same as that in the Liability Treaty. "State of Registry" is defined as a launching state on whose register a space object is carried, as provided by Article II which, in paragraph 1, provides that the launching State shall maintain a registry for that purpose and so advise the U.N. Secretary-General, and under paragraph 2, states that where two or more States are involved in the launching, they shall agree which one shall register the space object without prejudice to their agreements as to jurisdiction and control over the space object and its personnel. Article IV governs the detailed information to be furnished to the Secretary-General. This treaty is particularly helpful in determining ownership and operation of a space vehicle.

The *Rescue and Return of Astronauts Agreement* provisions particularly pertinent hereto are found in subsections of Article 5:

2. Each Contracting Party having jurisdiction over the territory on which a space object or its component parts has been discovered shall, upon the request of the launching authority and with assistance from that authority if requested, take such steps as it finds practicable to recover for the object or component parts.

3. Upon request of the launching authority, objects launched into outer space or their component parts found beyond the territorial limits of the launching authority shall be returned to or held at the disposal of representatives of the launching authority, which shall, upon request, furnish identifying data prior to their return.

4. Notwithstanding paragraphs 2 and 3 of this Article, a Contracting Party which has reason to believe that a space object or its component parts discovered in territory under its jurisdiction, or recovered by it elsewhere, is of a hazardous or deleterious nature may so notify the launching authority, which shall immediately take effective steps, under the direction and control of the said Contracting Party, to eliminate possible danger of harm.

¹⁸ Jan. 14, 1975, 28 U.S.T. 695, T.I.A.S. No. 8480. (effective Sept. 15, 1976).

¹⁹ April 22, 1968, 672 U.N.T.S. 120 (effective Dec. 3, 1968).

5. Expenses incurred in fulfilling obligations to recover and return a space object or its component parts under paragraphs 2 and 3 of this article shall be borne by the launching authority.²⁰

Under this treaty, a State party thereto would be obliged to safeguard the Shuttle, its personnel, components, and cargo landing in its territory, and the United States would be obligated to reimburse that State for its expenses in connection with the recovery, return or rendering harmless of the space object or its component parts.

3. Remedies against NASA-Administrative. As previously stated, the most practical form of tort remedy against NASA, is either to pursue a claim through the administrative process or to file suit in the United States District Court. The administrative remedy is provided for under the National Aeronautics and Space Act of 1958 as amended.²¹ Claims against NASA arising out of its operations, such as Shuttle, may be directly paid by that agency in complete settlement up to the sum of \$25,000, when they are presented in writing within two years after the accident or incident;²² furthermore, if NASA considers a claim in excess of that amount meritorious, it may report the facts and circumstances to Congress for its consideration.²³ Negligence need not be established. Additionally, by means of a recent enactment, Space Act claims beyond \$25,000 may be paid when such claims are submitted by NASA to United States General Accounting Office and are certified for payment by the Comptroller General.²⁴ The latter procedure promises greater expedition in settlement of even substantial claims than can usually be achieved through litigation. It should be noted that for an administrative remedy, there are no preconditions as to situs of the accident, whereas situs may be an important factor in determining District Court jurisdiction.

4. Remedies against NASA - Civil Action. The Federal Tort Claims Act (FTCA)²⁵ gives the United States District Court exclusive jurisdiction of civil actions for money damages:

for injury or loss of property, or personal injury or death caused by the negligent or wrongful act or omission of any employee of the Government while acting within the scope of his office or employment, under circumstances where the United States, if a private person, would

²⁰ As far as the author has been able to ascertain at this writing, the claim of Canada against the Soviet Union for expenses arising out of the crash of Cosmos 954 into its territory remains unsettled.

²¹ 42 U.S.C.A. §§ 2451 *et. seq.* (1973 & Supp. 1980).

²² 42 U.S.C.A. § 2473 (c) (13) (A) (Supp. 1980).

²³ 42 U.S.C.A. § 2473 (c) (13) (B) (Supp. 1980).

²⁴ 31 U.S.C.A. § 724a (Supp. II 1978).

²⁵ 60 Stat. 842 (codified in scattered sections of 29 U.S.C. §§ 1291, 1346, 1402, 1504, 2110, 2401, 2402, 2411, 2412, 2671, *et. seq.* (1976)).

be liable to the claimant in accordance with the law of the place where the act or omission occurred.²⁶

However, a claim arising in a foreign country is not included and should be filed with NASA and there processed as above noted.

For the purposes of civil action, the claim must first be presented to the appropriate federal agency (NASA) within two years after the accident occurs, and suit must be begun within six months after date of mailing of notice of final denial of the claim by the agency to which it was presented.²⁷

An unusual problem of venue under the FTCA is presented by the peculiar nature of the Shuttle operation, which is at all times expected to orbit in outer space. There are two federal statutes which point up the problem and limit the application of the FTCA. A claim arising in a foreign country is excluded under 28 U.S.C. § 2680 (k), and 28 U.S.C. § 1402 (b) provides:

Any civil action on a tort claim against the United States under subsection (b) of section 1346 of this title may be prosecuted only in the judicial district where the plaintiff resides or wherein the act or omission complained of occurred.

The question of jurisdiction of a United States District Court may arise out of negligent operation of the shuttle in that part of the outer space above the United States, as distinguished from damage caused on earth by a falling space object. Impact on foreign territory would bring the matter within the sphere of the Liability Convention.²⁸ But if the causal factor was the act of negligence aboard the Shuttle in its operation or in its manufacture or design in the United States, a means might be provided for invoking a United States District Court's jurisdiction.²⁹

Action against the United States by reason of the negligence of NASA as a manufacturer of the Shuttle would enlarge the District Court's jurisdiction. The place of manufacture or design has been held to the situs of the act of negligence,³⁰ and since the Shuttle and its components have been for the most part manufactured in the United States, there would be little difficulty in determining proper venue in this type of suit. The civil action, with its promise of a larger damage award, would most likely be the preferred route to recovery. To come within the FTCA, the negligent

²⁶ 28 U.S.C. § 1346 (2) (b) (1976).

²⁷ 28 U.S.C. § 2401 (b) (1976).

²⁸ An alternative to the remedy under the National Aeronautics and Space Act.

²⁹ *Richards v. United States*, 369 U.S. 1 (1962); *United States v. Gravelle*, 407 F.2d 964 (10th Cir. 1969); *George v. Douglas Aircraft Co.*, 332 F.2d 73 (2d Cir. 1964); *Eastern Air Lines, Inc. v. Union Trust*, 221 F.2d (D.C. Cir. 1955), *rev'd per curiam*, 350 U.S. 907 (1955), *modified mem.*, 350 U.S. 962 (1956).

³⁰ *Id.*

act must be within the sovereign jurisdiction of the United States. Although the jurisdiction of the United States has been declared to include the airspace above its territory³¹ and was recognized as including such by the Chicago Convention of 1944,³² the upper boundary of United States sovereignty is yet to be determined. Discussion of the various claims and theories with respect to that issue is better left to the many scholarly and scientific articles published and forthcoming. It is sufficient to say that there has as yet been no declaration of policy by the United States on the subject, except a statement by a State Department spokesman that the United States has not accepted any upper limit to its sovereignty.³³

B. Liability of Users to Third Parties

Users may be likened to shippers in conventional transportation. However, it may be assumed that the various users share the knowledge that the shuttle mission is a compound flying laboratory, the experimental purposes of the flight and the variety of its payloads. Accordingly, they should be deemed to have assessed the risks involved *vis a vis* each other as well as against the carrier, NASA. In any event, the NASA policy apparently will require a prior contractual waiver of claims as against each other.

With respect to third party claims against users, it would appear that application of common law principles governing carrier and shipper would probably apply. Where the user's payload, whether free-flying or projected into space as part of a breakup, causes damage to a third party in the air or on the ground, it is likely that liability would attach to the user.³⁴ As between the user, a shipper of dangerous articles, and an innocent victim, it would seem reasonable that most jurisdictions would allow recovery of damages, and most likely, recovery would be assured in American courts.

III. SUMMARY

The issue is not whether NASA is exposed to third party liability through its Shuttle operation, but rather, what are the third parties' remedies for damages suffered as a result of the Shuttle operation. It may be concluded that means of presenting claims and the chance of recovery of reasonable compensation for damages sustained are readily available: administratively, by filing a claim with NASA, or by FTCA action against the United States. Either of these courses would seem to be preferable to the rather complicated semi-diplomatic claims procedures set out in the Liability Convention.

³¹ 49 U.S.C. §§ 1716, 1718 (1976).

³² Convention on International Civil Aviation, Dec. 7, 1944, 61 Stat. 1180, T.I.A.S. No. 1591 (effective April 4, 1947).

³³ Becker, *Major Aspects of the Problem of Outer Space*, 38 DEPT. STATE BULL. 962, 966 (1958).

³⁴ 13 C.J.S. *Carriers*, *supra* note 14.

