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LIABILITY OF THE UNITED STATES GOVERNMENT FOR OUTER SPACE ACTIVITIES WHICH RESULT IN INJURIES, DAMAGES OR DEATH ACCORDING TO UNITED STATES NATIONAL LAW*

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The United States government is deeply involved in the initiation, research, development, participation, privatization and commercialization of outer space activities. In the entire history of this commitment to outer space activity, there has never been one single fatality to unrelated third persons. This phenomenal safety record is probably unmatched in any comparable field involving such potentially hazardous activity, and is a proud testimonial of the concern for human safety which is paramount to the United States space program. As in any dangerous or potentially hazardous activity, however, an accident of some type resulting in loss of life, injury or danger always lurks as a tragic possibility. Given the extensive involvement of the United States government in outer space activities, any such accident may be directly or indirectly linked to the government.

This article will deal with United States involvement in outer space activities, the parameters of United States liability under United States law, and the obstacles associated with seeking redress for injury, damages or death from the federal government. Unfortunately, recovery for damages, injuries or death from the United States under...
United States domestic tort law is fraught with barriers, exceptions and loopholes which substantially limit any possibility of recovery to specific narrowly-defined and strictly-construed situations. As a result, United States domestic law differs greatly from United States international law regarding the liability of the United States government for outer space activities to persons damaged, injured or killed. This disparity may lead to indefensible absurd and unjust results; a foreign national may be able to recover damages from the United States government under international law, while American citizens may be precluded from recovery under domestic law for injuries arising out of the same occurrence.

I. UNITED STATES INVOLVEMENT IN OUTER SPACE ACTIVITIES

As of the beginning of 1984, the use of outer space has resulted in 5,154 man-made objects orbiting the Earth. They consist of 1,324 Earth-orbiting payloads, fifty-nine space probe payloads, 3,715 Earth-orbiting pieces of debris and fifty-six space probe pieces of debris. Of these, the United States launched 452 payloads and thirty probe pieces of payloads into orbit. Some estimates attribute at least half of the orbiting United States payloads to the military, although specific details are sketchy. The remaining United States payloads are of a civil nature, either government, private or internationally owned or operated, but all involve either direct or indirect United States government participation.

A. Direct Participation

Before the United States government’s first formal attempt to build a rocket capable of launching satellites, the attempt was made to have a rocket-carrying satellite in time for the International Geophysical Year, from July 1, 1957, through December 31, 1978, in

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2 Id.
3 The attempt was made to have a rocket-carrying satellite in time for the International Geophysical Year, from July 1, 1957, through December 31, 1978, in
government interest and involvement in space flight existed.\textsuperscript{4} Not until passage of the National Aeronautics and Space Act of 1958,\textsuperscript{5} however, did a centralized civil government agency with its own budgetary demands and congressional mandate exist to exercise control over astronautical activities sponsored by the United States.\textsuperscript{6} This agency, the well-known National Aeronautics and Space Administration (NASA), is responsible for the administration and execution of United States space activities, except for those activities involving the development of weapons systems, military operations and other traditional national defense activities left to the United States Department of Defense. NASA's role is intended to insure that the United States activities in space shall be devoted to peaceful purposes for the benefit of mankind, and that such activities be conducted so as to contribute materially to the expansion of human knowledge of phenomena in the atmosphere and space, performance, speed, safety, and efficiency of aeronautical and space vehicles, and the development and operation of vehicles capable of carrying instruments, equipment, supplies, and living organisms through space.\textsuperscript{7}

In addition, Congress directed NASA to preserve the role of the United States as a leader in aeronautical and space science and technology; to make available to defense agencies any discoveries of military value and significance; to cooperate with other nations in aeronautics and space


\textsuperscript{5} 42 U.S.C. §§ 2451-84 (1982).

\textsuperscript{6} NASA's predecessor, the National Advisory Committee for Aeronautics (NACA), while primarily devoted to aviation, was involved in astronautics. However, "it lived most its official life in the shadow cast by the military services . . . ." HIRSCH & TRENTO, supra note 4, at 30.

\textsuperscript{7} HIRSCH & TRENTO, supra note 4, at 40-41 (paraphrasing 42 U.S.C. § 2451 (1982)).
work; and to cooperate with other agencies in order to avoid unnecessary duplication.\(^8\)

NASA space activities through the years are too numerous to list, ranging from simple ionospheric sounding rockets to complex manned missions. One of the more famous programs was the Apollo program, itself the final product of earlier efforts from the Mercury and Gemini flights. The Apollo program resulted in Apollo 11 astronaut Neil Armstrong walking on the Moon on July 21, 1969. Other well-known NASA programs include the SKYLAB program,\(^9\) interplanetary probes launched through the years,\(^10\) the Shuttle program,\(^11\) and the proposed permanent manned orbiting space station program.\(^12\) Other areas of astronautics in which NASA has played or is playing key roles include research and development in expendable launch vehicles, communications satellites, navigational satellites, remote sensing satellites, meteorological satellites and various military missions.\(^13\)

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\(^8\) 42 U.S.C. § 2451(c).

\(^9\) SKYLAB was the United States' first manned space station which was in operation for about nine months in 1973 and 1974. It was used to study the long-term effects of living and working in space and to conduct scientific investigations. GEORGE C. MARSHALL SPACE CENTER, NASA SKYLAB, OUR FIRST SPACE STATION (Leland F. Belew 1977); Newkirk & Ertel, Skylab, A Chronology, NASA SP-4011 (1977). On July 11, 1979, SKYLAB's orbit decayed to where it reentered the Earth's atmosphere. Debris was scattered along a path across the Indian Ocean and Australia.

\(^10\) Mariner, Viking and Pioneer spacecraft have been used on these missions with enormous success. See generally FIMMEL, VAN ALLEN, & BURGESS, PIONEER, FIRST TO JUPITER, SATURN AND BEYOND (1980); MURRAY & BURGESS, FLIGHT TO MERCURY (1977); EZELL, ON MARS, EXPLORATION OF THE RED PLANET (1984); NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, MARINER-VENUS 1967 FINAL PROJECT REPORT (1971); TUCKER, VIKING LANDER IMAGINING INVESTIGATION, NASA Reference Publication 1007 (1978).

\(^11\) See generally KAPLAN, SPACE SHUTTLE, AMERICA'S WINGS TO THE FUTURE (2d ed. 1983).

\(^12\) On January 25, 1984, President Reagan initiated the space station program during his State of the Union Address to a joint session of Congress, when he directed NASA to develop a permanently-manned space station within a decade. See generally T. SIMPSON, THE SPACE STATION, AN IDEA WHOSE TIME HAS COME (1985).

NASA's space tracking and data systems provide tracking, control, telemetry and data support for a myriad of outer space activities. NASA also has been active in materials processing in space, satellite maintenance and satellite retrieval operations.

In addition, NASA has been very active in launching foreign payloads and international joint space ventures involving numerous countries. Some of the more notable examples include SPACELAB, the reusable laboratory designed, developed and funded by the European Space Agency (ESA) and proposed ESA participation in the United States space station program. While a complete survey of NASA activities would be too voluminous to undertake here, it suffices to say that NASA is directly or indirectly involved in the vast majority of United States outer space activities.

The remainder of United States space activities not carried out exclusively or in part by NASA are undertaken by the Department of Defense (DOD), which conducts its own space projects. The Defense Department uses outer space for national strategic defense. While the military does make public an official list of military launchings, such lists often provide very few details of the specific missions and include only the vague mandatory reports required by the Registration Convention.

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14 Contamination-free hormones and crystals grown from vapor are but a few of the recent successful applications. See, e.g., Flight Produces Contamination-Free Hormone, Av. Week & Space Tech., Apr. 22, 1985, at 22; May 6, 1985, at 18.


16 Europe's Station Participation Viewed as Step Toward Own Facility, Av. Week & Space Tech., June 3, 1985, at 149.

17 Convention on the Registration of Objects Launched into Outer Space, opened for signature Jan. 14, 1975, 28 U.S.T. 695, T.I.A.S. No. 8480, entered into force Sept. 15, 1976. Article IV sets forth the vague reporting requirements which include only the name of the launching State or States, appropriate designation of the space object or its registration number, date and territory or location of launch, and basic orbital parameters. This information is required to be reported "as soon as practicable." See Article IV. With regard to launches of short orbital
B. Indirect Participation

United States space activities inextricably involve the private sector. However, government policy, control and supervision predominates in this area — a phenomenon not unexpected in view of the enormous costs and high risks involved. Gradually, the United States is transferring certain traditionally governmental activities to the private sector, with the government maintaining only a regulatory role. This transfer to the private sector is consistent with a policy which has evolved through the years, whereby the government (often NASA) conducts early research, development and deployment of outer space prototypes through the use of government funding and private contractors. After the feasibility of prototypes has been demonstrated, private industry takes over the actual "business" concerned.

An example of the shift of governmental activities to the private sector occurred when NASA largely phased out the development of communications satellites from its operations, and allowed private entities to take over the field.\footnote{Pardo, The Future of Space Technology 177 (1984).} This shifting of activities to the private sector also is happening with the LANDSAT program, where, pursuant to the Land-Remote Sensing Commercialization Act,\footnote{15 U.S.C. §§ 4201-92 (1982).} the Commerce Department is attempting to transfer civil remote sensing activities to the private sector.\footnote{Seven bidders entered competition in 1984 for the transfer contract which is now being negotiated with the winner, Earth Observing Satellite Co. (EOSAT), a joint venture of RCA Astro-Electronics and Hughes Aircraft Co. OMB Approves Funds to Shift Landsat to Private Sector, Av. Week & Space Tech., May 27, 1985, at 19.} Similarly, in 1983, President Reagan adopted as a national policy the privatization/commercialization of expendable launch vehicles (ELVs).\footnote{ASDD-94, see White House Press Release, May 16, 1983.} This policy applies to both those ELVs previously developed for United States government use,
as well as new space launch systems developed specifically for commercial applications.

The government continues to play a prominent role as a regulator, however, despite the increasing privatization or commercialization of traditional governmental activities. Regulation is particularly necessary in the expendable launch vehicle industry because the potential for disaster appears to be very great. Consequently, safety considerations demand particular scrutiny. Additionally, under the Liability Convention, to which the United States is a state party, the United States, not private launch entities, agreed to assume international liability for damage caused by United States space objects in a variety of circumstances, including absolute liability for damage to life and property caused by a space object launched from United States territory or by a launch otherwise conducted or procured by the United States or United States nationals.

During the 1983 Institute of Space Law Colloquium in Budapest, Hungary, Neil S. Hosenball, NASA General Counsel, reaffirmed this responsibility pursuant to the Outer Space Treaty. In a paper which lacked the usual disclaimers and which clearly characterized itself as "a work of the U.S. government," he stated:

Article VI and Article IX of the Outer Space Treaty appear to place responsibility on a party to the treaty for the space activities of its nationals irrespective of the place from which a launch might occur. Thus, the United States is responsible for supervision and authorization of a United States company launching into space from outside U.S. territory.

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23 Id. at Art. I(c), II.
This direct liability forms an additional basis for a broad federal interest "which extends beyond safety issues" in private space launch activities.\(^{26}\)

Between 1980 and 1982, an American firm, Space Services Incorporated of America (SSI), twice petitioned the United States government for approval to launch a private rocket from a private launch site.\(^{27}\) From these petitions came the realization that the United States government lacked regulations tailored to commercial launch vehicles.\(^{28}\) No agency had primary responsibility for licensing private launch activities. As a result, SSI had to contact numerous federal agencies to determine which agencies had regulatory jurisdiction over ELV launches. In addition, since no existing regulations clearly applied to private ELV launches, the State Department decided to define launches as "exports" and utilize the International Traffic in Arms Regulation (ITAR)\(^ {29}\) as an interim means to discharge the federal government’s international and domestic legal obligations in authorizing proposed launches.\(^ {30}\) For the first commercial applicant, however, compliance with the ITAR process proved lengthy, expensive and complicated, with some federal agencies questioning whether private launches were even

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\(^{27}\) SSI’s launch approval requests for its Percheron and Conestoga I rockets stimulated the creation of the regulatory process. For an excellent review of the process, see S. Chafer, Federal Regulation of the First U.S. Private Rocket Launch: Right on Down the Regulatory Pike (Nov. 4, 1984) (winning paper in Robert H. Goddard Historical Essay Competition, sponsored by the National Space Club).

\(^{28}\) Since then, another private company, Starstruck, has sought and obtained launch approval from the United States government to launch its privately-developed ELV, the Dolphin, from a platform in international waters. Although two attempts were aborted, Starstruck continues launch efforts. See Webber, Launching the Rocket Industry in the United States: Domestic Regulation of Private Expendable Launch Vehicles, 50 J. Air L. & Com. 1, 3 (1984).

\(^{29}\) 22 C.F.R. § 121.01 (1984). Included on the munitions list are rockets, launch vehicles and associated equipment. \textit{Id}.

\(^{30}\) See H. Schmidt, Regulatory Aspects of Commercial Space Transportation (Nov. 4, 1984) (the author is Senior Regulatory Specialist, Office of Commercial Space Transportation, and delivered this speech to the JANNAF Safety and Environmental Subcommittee at the Kennedy Space Center, Florida).
permissible.\textsuperscript{31}

In May, 1983, President Reagan announced that the United States government fully endorses the commercialization of United States ELVs and will facilitate that process.\textsuperscript{32} The announced policy also outlined regulatory guidelines for the process:

The U.S. Government will license, supervise, and/or regulate U.S. commercial ELV operations only to the extent required to meet national and international obligations and to ensure public safety. Commercial ELV operators must comply with the applicable international, national and local laws and regulations including security, safety, and environmental requirements.

The U.S. Government encourages the use of its national ranges for U.S. commercial ELV operations. Commercial launch operations conducted from a national range will, at a minimum, be subject to existing range regulations and requirements.

The U.S. Government will encourage free market competition among the various systems and concepts within the private sector. The U.S. Government will review and approve any proposed commercial launch facility and range as well as subsequent operations conducted therefrom.\textsuperscript{33}

To implement these and other policy decisions, President Reagan in November, 1983, designated the Department of Transportation (DOT) as the lead agency for commercial launch activities.\textsuperscript{34} By executive order\textsuperscript{35} signed in February, 1984, the President directed the DOT as lead agency to:

provide leadership in expedit[ing] the processing of private sector [license applications]. . . for commercial ELV

\textsuperscript{31} Id.
\textsuperscript{32} Expendable Launch Vehicles, Announcement of United States Government Support for Commercial Operations by the Private Sector, Administration of President Reagan, 19 WEEKLY COMP. PRES. DOC. 721 (May 16, 1985).
\textsuperscript{33} Schmidt, supra note 30.
\textsuperscript{34} Id.
launches and the establishment and operation of commercial launch ranges; consult with other affected agencies to promote consistent application of ELV licensing requirements for the private sector, and assure fair and equitable treatment for all private sector applicants; serve as a single point of contact for collection and dissemination of documentation related to commercial ELV licensing applications; [and] identify Federal statutes, treaties, regulations, and policies which may have an adverse impact on ELV commercialization efforts and recommend appropriate changes to affected agencies . . . .

After its own extensive study and analysis, Congress enacted the Commercial Space Launch Act, which President Reagan signed into law on October 30, 1984. This Act provided the statutory basis for the exercise of the lead agency function by the DOT, and vested exclusive licensing authority for commercial space launches and operation of commercial launch sites in the DOT. At the same time, the Commercial Space Launch Act preserved the licensing authority of the Federal Communications Commission (FCC) relative to the communication components of launch vehicles, preserving the independent licensing authority of both the FCC and Department of Commerce with respect to communications and private sector remote sensing payloads.

In accordance with the Commercial Space Launch Act, the DOT published a Notice to be relied upon as interim guidance pending the promulgation of formal regulations implementing the licensing provisions of the Act. Under this Notice, the "DOT’s principal objective is to shape, in

36 Id.
38 It should be emphasized that the Commercial Space Launch Act applies only to private launch activities; government launch activities are exempt.
40 DOT, Commercial Space Transportation Licensing Process for Commercial Space and Launch Activities Notice of Policy and Request for Comments, 50 Fed. Reg. 7,714 (1985). This Notice contains the foundation of the regulatory structure for commercial space activities. Id. DOT currently is developing the specific requirements to be integrated with particular emphasis on launch license regulation, insurance regulation and national range use. Id.
consultation with other appropriate Federal agencies, a streamlined licensing process that protects public safety, national security and foreign policy objectives, but poses no unreasonable regulatory barriers to the commercial success of a technologically innovative private space launch industry in the United States." To meet these objectives, the DOT has developed a dual licensing process composed of a mission review and a launch safety review. Although the mission review will address certain characteristics of the launch such as the flight plan, it will substantially involve the payload.

The payload review can occur in one of two ways. If the payload must be licensed by another Federal agency, such as telecommunications satellites licensed by the Federal Communications Commission or private operational remote sensing satellites licensed by the Department of Commerce, DOT would not duplicate the review undertaken in the course of the license process conducted by such agency. Rather DOT will accept the license so issued as satisfying the requirements of mission review pertaining to the payload.

Payloads which are not independently licensed will be reviewed by DOT in consultation with the Departments of State and Defense, and, as appropriate, the National Aeronautics and Space Administration and other agencies to ensure that the payload mission does not conflict with national interests.

The launch safety review will focus upon the safety elements of the launch operation and the safety systems of the vehicle, including such factors as the proposed launch site and flight corridor, range safety expertise, ground and flight safety process and procedures, range tracking and instrumentation capability, vehicle safety system, and proposed vehicle design. However, reliability of the vehicle in a non-safety context will be the responsibility of

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41 Id.
42 Id. at 7,717.
43 Id.
the launch vehicle manufacturers.\textsuperscript{44} The launch safety review will deal primarily with the range and vehicle safety resources an applicant has put in place to guarantee that the launch operations are conducted safely.

The Commercial Space Launch Act also contains provisions requiring that the Secretary of Transportation consult with other appropriate federal agencies in the course of overseeing and coordinating space activities.\textsuperscript{45} The Secretary should eliminate any duplicative or unnecessary licensing processes required by other agencies.\textsuperscript{46} In the case of disagreement between agencies, the Secretary of Transportation shall have the ultimate authority to establish the regulatory framework.\textsuperscript{47}

Many other federal agencies have direct interest in the regulation and supervision of space activities. Any outer space rocket initially must travel through airspace. The Federal Aviation Administration (FAA) has the duty to maintain the safety and efficient utilization of such airspace.\textsuperscript{48} Consequently, any rocket launching would involve the FAA. Part 101, Subpart C of the Federal Aviation Regulations (FARs)\textsuperscript{49} contains the only regulations clearly applicable to rocket launches. While these regulations were adopted in 1963 for the purpose of ensuring that small rockets launched by hobbyists and scientists would not interfere with aircraft operations, the FAA regards these regulations as applicable to commercial orbital and suborbital launches.\textsuperscript{50} Substantive limitations regarding rocket launches are set forth in the FARs:

No person may operate an unmanned rocket-

\textsuperscript{44} Id.
\textsuperscript{46} Id.
\textsuperscript{47} S. REP. No. 656, 98th Cong., 2d Sess. 11 (1984).
\textsuperscript{49} 14 C.F.R. §§ 101.21-.25 (1985).
(a) In a manner that creates a collision hazard with other aircraft;
(b) In controlled airspace;
(c) Within five miles of the boundary of any airport;
(d) At any altitude where clouds or obscuring phenomena of more than five-tenths coverage prevails;
(e) At any altitude where the horizontal visibility is less than five miles;
(f) Into any cloud;
(g) Within 1,500 feet of any person or property that is not associated with the operations; or
(h) Between sunset and sunrise.\(^{51}\)

Since any rocket launch from the continental United States will involve an intrusion into controlled airspace,\(^{52}\) prohibited under this section, a waiver\(^{53}\) or exemption\(^{54}\) from the FAA is required. The FAA has used both waivers and exemptions. Waiver involves a much shorter review period.\(^{55}\) Rocket launches from government ranges, like Kennedy Space Center and Vandenburg Air Force Base, are not subject to these FARs\(^{56}\) because the airspace above government ranges is restricted airspace.\(^{57}\)

The Federal Communication Commission (FCC) is also involved in outer space activities. It controls the allocation of radio frequencies which are essential to the control of unmanned rockets and payloads.\(^{58}\) The FCC also establishes frequencies for satellite communications. Communications are essential for monitoring, telemetry, radar

\(^{51}\) 14 C.F.R. § 101.23 (1985). See also id. at § 101.25 for the requirements associated with notification of a rocket launch to the nearest FAA Air Traffic Control Facility.

\(^{52}\) See 14 C.F.R. § 71.7 (1985). See generally id. at §§ 71.1-.19 (designation of federal airways including control zones, control areas and the continental control area).

\(^{53}\) A waiver permits a private entity to conduct a one-time flight test from a specified facility. Webber, supra note 28, at 12.

\(^{54}\) An exemption represents an FAA determination that the proposed activity is not governed by FAA regulations. Webber, supra note 28, at 12 n.57.

\(^{55}\) Webber, supra note 28, at 24.

\(^{56}\) Id.; 14 C.F.R. §§ 73.1-.85 (1985).

\(^{57}\) Myers, supra note 50, at 4; Webber, supra note 28, at 13.

tracking and, if required, abort or destruct capability. Consequently, for any launch to operate, it is necessary to apply to the FCC for a radio operator's license and frequency assignments.

FCC reviews related to outer space activities appear to be restricted to communications issues such as interference and efficient use of the radio spectrum. The FCC has determined that Experimental Radio Services regulations apply to commercial launch operators. Under these regulations, radio station authorizations are granted for two years, with frequencies available on a shared basis which may be limited to a specific geographical area.

The Departments of State and Defense also are keenly interested in launch vehicle activities. The International Traffic in Arms Regulations (ITAR), lists as subject to export controls (the United States munitions list) all launch vehicles except meteorological sounding rockets, which are regulated by the Commerce Department. Approval criteria for temporary export licenses include, inter alia, the furtherance of world peace, United States security and foreign policy considerations, and approval by the Director of the United States Arms Control and Disarmament Agency. ITAR applies when United States commercial launch vehicles are used to launch payloads from foreign countries, because these launches require export licenses.

Many Defense Department agencies also would be involved in space launchings, both to protect the Nation's security interests and for space traffic control. The Air Force, through NORAD/Space Command, is responsible for space traffic monitoring to avoid collisions between

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59 Myers, supra note 50, at 10.
60 47 C.F.R. §§ 5.1-.4111 (1985). Broadcast regulations are the sole exception. Id.
62 Id.; 22 C.F.R. § 123.05.
orbiting satellites. Defense Department officials believe that they will assume a service-oriented role, in addition to their space defense role, as space traffic increases. In addition, NORAD would have the responsibility to warn the Soviet Union if a rocket strays into Soviet territory or the territory of its interests.

Other federal agencies which regulate space activities include the Department of Commerce, the National Oceanic and Atmospheric Administration (NOAA), the National Bureau of Standards (NBS), the National Telecommunications and Information Administration (NTIA), the Coast Guard, the Environmental Protection Agency (EPA), the Department of Energy (DOE), the Department of the Interior, and the Occupational Safety & Health Administration (OSHA).

The foregoing review of United States government direct and indirect regulation of outer space activities, though incomplete, shows that even space activities conducted by private entities will involve the United States government to some extent.

II. THE DOCTRINE OF SOVEREIGN IMMUNITY

The doctrine of sovereign immunity protects sovereigns from suit in domestic and foreign courts without the sovereign’s consent. This concept was adopted in the United States during the nineteenth century. Courts developed the doctrine relying on the theory that the king was immune from suit; that the king can do no wrong. It is curious that a legal system based on democracy rather

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64 Dula, supra note 50, at 323.
65 Av. Week & Space Tech., Mar. 28, 1983, at 56-57. Colonel Gerald M. May, Director of Space Operations for Space Command, has said, “In order for us to keep everything separated in space, we are going to become the traffic cop. . . . I don’t see any other nation coming forward to do that so it will rest with us.” Id.
67 Id. at 553; 3 K. Davis, Administrative Law Treatise §§ 25.01-.17 (1958).
than feudalism or monarchism adopted such reasoning.\textsuperscript{68}

The doctrine has eroded over the years with the creation of a number of statutory waivers of sovereign immunity.\textsuperscript{69} However, because any suit against the United States government is an exception to the broad immunity traditionally enjoyed by the United States, waivers of the federal government's sovereign immunity are strictly construed by the courts and filled with restrictions and limitations. Consequently, the United States's potential liability for outer space activities must be carefully analyzed, not only with reference to common law tort principles, but also with reference to specific congressional waivers of sovereign immunity.

The modern American version of the sovereign immunity doctrine states that the United States, by reason of its sovereignty, is immune from suit and can be sued only with its own consent;\textsuperscript{70} a court has no jurisdiction over a suit against the United States unless the government has consented.\textsuperscript{71} This immunity exists whatever the character of the proceeding or the right to be enforced,\textsuperscript{72} and it applies both to causes of action arising from acts of Congress and from violations of rights conferred by the Constitution.\textsuperscript{73}

Sovereign immunity can be waived and consent to suit can be given only by an act of Congress.\textsuperscript{74} Consent must be given clearly, expressly and explicitly. Such consent may not be implied or inferred from an ambiguous stat-

\textsuperscript{68} Krist, supra note 66, at 553. See also Davis, Sovereign Immunity Must Go, 22 Ad. L. Rev. 383 (1970).

\textsuperscript{69} Id.


\textsuperscript{71} United States v. Alabama, 313 U.S. 274, 281 (1941).

\textsuperscript{72} Lynch v. United States, 292 U.S. 571, 581-82 (1934); Hobby v. Hodges, 215 F.2d 754, 757 (10th Cir. 1954).

\textsuperscript{73} Id. at 758.

\textsuperscript{74} Dalehite v. United States, 346 U.S. 15, 27-28 (1953); Malman v. United States, 207 F.2d 897, 898 (2d Cir. 1953).
As with the construction of statutes generally, legislative intent must be ascertained and given effect to determine whether Congress purported to waive immunity and to consent to suit against the United States. While it has been held generally that a statute which contains a waiver of sovereign immunity is to be strictly construed in favor of the United States and not to be extended beyond its plain language, the rules of construction are not to be applied to defeat the aim and purpose of the statute. Therefore, an adoption by Congress of broad statutory language when authorizing suit against the United States should not be limited by unduly narrow or restrictive interpretations.

When waiving sovereign immunity, Congress may impose any conditions, restrictions or limitations it deems necessary to maintain a cause of action against the United States, including how, when and where the suit may be maintained. Such conditions must be followed strictly and cannot be waived, for they define the jurisdiction of a court to hear such actions. While it has been stated that the United States "is in no different position from any other party" when sued pursuant to a waiver of sovereign immunity, an analysis of the statutory waivers of sovereign immunity and their practical applications reveal a contrary reality. Since Congress has imposed conditions and restrictions on when the United States can be sued successfully, the United States enjoys a plethora of privileges placing it in a far more advantageous position than "any other party" when defending against tort claims.

76 Cohen v. United States, 195 F.2d 1019, 1021 (2d Cir. 1952).
77 Herren v. Farm Sec. Admin., 153 F.2d 76, 78 (8th Cir. 1946).
79 United States v. Alberty, 63 F.2d 965, 966 (10th Cir. 1933).
III. LIABILITY UNDER THE FEDERAL TORT CLAIMS ACT — SUBSTANTIVE PROVISION

Perhaps the broadest waiver of sovereign immunity and the most important national remedy available for persons suffering injury arising out of the tortious conduct of the United States government is the Federal Tort Claims Act (FTCA). The FTCA gives federal district courts exclusive jurisdiction of civil actions on claims against the United States, 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 be liable to the claimant in accordance with the law of the place where the act or omission occurred.

The FTCA has been construed as "a broad waiver of the federal government's immunity . . . for the torts of its employees while acting in the scope of their employment." A.

A. Substantive Limitations

The FTCA will be applicable to claims for redress for damages, injuries or death arising out of direct or indirect United States outer space activities. While courts have

86 See generally United States v. Muniz, 374 U.S. 150, 159 (1963) (Court held that prisoners sustaining injuries because of government employees' negligence could maintain suits under the FTCA, noting that the Act extends to novel and unprecedented forms of liability); Rayonier Inc. v. United States, 352 U.S. 315 (1957) (Court held that United States could be liable under FTCA for losses resulting from negligence of United States Forest Service in fighting a forest fire, noting that one purpose of the Act was to establish novel and unprecedented government liability); Indian Towing Co. v. United States, 350 U.S. 61, 69 (1955) (Court held that once Coast Guard undertook to provide lighthouse service it had a duty to maintain it, and persons incurring damage as a result of Coast Guard's breach of that duty had cause of action under FTCA).
stated that the FTCA equates the liability of the United States "to that which a 'private individual' would have 'under like circumstances'," and while the FTCA plainly states, "[t]he United States shall be liable, respecting the provisions of this title relating to tort claims, in the same manner and to the same extent as a private individual under like circumstances," the United States has enormous advantages not afforded to private litigants. Such advantages can serve to preclude recovery by claimants for damages to which they otherwise would be entitled under well recognized tort principles.

The federal district courts have exclusive jurisdiction over claims arising pursuant to the FTCA and are required to apply the "whole law" of the state where the tortious act or omission occurred, including that state's conflict of laws rules. However, regardless of the content of the "whole law" of the state, the federal government retains certain distinct privileges. With regard to outer space activities, the most important of these privileges is that the FTCA does not permit claims against the government based upon strict or absolute liability theories such as products liability, ultrahazardous activities or inherently dangerous activities. Negligence must be pleaded and proven. Although the doctrine of *res ipsa loquitur* has been applied to some FTCA claims, the necessity

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91 See Laird v. Nelms, 406 U.S. 797 (1972) (upholding principle that FTCA does not authorize suits against the government on claims of strict or absolute liability for ultrahazardous activity); Dalehite v. United States, 346 U.S. 1545 (1953) (holding that the FTCA requires a negligent act and that no liability arises under absolute liability theory); Toppi v. United States, 332 F. Supp. 513, 518 (E.D. Pa. 1971) (noting that the FTCA does not lift governmental immunity for theories of liability without fault).
92 *Res ipsa loquitur* can be applied in FTCA actions only if the doctrine is recognized under the jurisdiction whose applicable law governs. See D'Anna v. United States, 181 F.2d 335, 337 (4th Cir. 1950) (court applied *res ipsa loquitur* to situation
of proving actual negligence cannot be overemphasized as a significant obstacle to recovery for injuries or damages proximately caused by United States government outer space activities.

In *Laird v. Nelms*, an action brought pursuant to the FTCA seeking recovery for damages caused by a military sonic airplane boom, the United States Supreme Court held that the government would not be liable in the absence of negligence or a wrongful act. The Court reasoned that the statutory language "negligent or wrongful act or omission of any employee of the Government" creates a uniform federal limitation on the types of acts committed by government employees for which the United States has consented to be sued, and that any inclusion of theories of recovery based other than on fault principles would broaden the FTCA beyond the intent of Congress. Consequently, actions based upon theories other than negligence, such as strict or absolute liability, cannot be brought under the FTCA.

Justice Stewart dissented from the majority opinion in *Laird*, arguing that a rigid rule against FTCA recovery based upon absolute liability undermines the basic rationale upon which Congress premised the FTCA — liability when a private person would be liable. Justice Stewart's

where auxiliary gas tank fell from naval airplane injuring plaintiff); *Swanson v. United States*, 229 F. Supp. 217 (N.D. Cal. 1964) (applying *res ipsa loquitur* to reach the conclusion that government's negligence was cause of plane crash); *see generally* 35 AM. JUR. 2D Federal Tort Claims Act §§ 87-90 (1985).

93 406 U.S. 797 (1972).

94 Id. at 799.

95 Id. at 803. Justice Stewart stated:

The rule announced by the Court today seems to me contrary to the whole policy of the Tort Claims Act. For the doctrine of absolute liability is applicable not only to sonic booms, but to other activities that the Government carries on in common with many private citizens. Absolute liability for injury caused by the concussion or debris from dynamite blasting, for example, is recognized by an overwhelming majority of state courts. A private person who detonates an explosion in the process of building a road is liable for injuries to others caused thereby under the law of most States even though he took all practicable precautions to prevent such injuries, on the sound principle that he who creates such a hazard should make good
remarks are particularly applicable to United States government involvement in outer space activities. If the FTCA is construed under existing precedent to preclude strict or absolute liability recovery from the United States government for a disaster occurring in the United States as a result of United States outer space activities, unjust and inequitable results may follow. Consider the following hypothetical example: The United States attempts to launch a spacecraft into outer space, but due to unexplained causes the spacecraft crashes into the United States. No "negligent or wrongful act or omission of any employee of the government" can be proven. A and B are both injured in A's home. A is a United States citizen. B is a foreign citizen. B brings his action pursuant to the Liability Convention where absolute liability is applicable. A is precluded from bringing his action pursuant to the Liability Convention,\(^{96}\) so he brings his action pursuant to the FTCA and is precluded from recovery because he cannot prove negligence. B recovers from the United States for his injuries; A does not recover because of his inability to plead and prove negligence.

In addition, the federal government is not obligated to pay pre-judgment interest and is not liable for punitive damages regardless of its degree of recklessness or culpability\(^ {97}\) (even if otherwise applicable state law provides for the harm that results. Yet if employees of the United States engage in exactly the same conduct with an identical result, the United States will not, under the principle announced by the Court today, be liable to the injured party. Nothing in the language or the legislative history of the Act compels such a result, and we should not lightly conclude that Congress intended to create a situation so much at odds with common sense and the basic rationale of the Act.

\(^{96}\) Convention on International Liability for Damages Caused by Space Objects, opened for signature Mar. 29, 1972, 24 U.S.T. 2389, T.I.A.S. 7762, entered into force Oct. 9, 1973. Article II of the Liability Convention states: "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." \(\text{id.}\) (emphasis added). Under Article VII, the Liability Convention is not applicable to nationals of the launching state.

pre-judgment interest or punitive damages). Consequently, delay works in favor of the government:

[if] a five-year delay occurs between the date of loss and the date of the trial or settlement, claimants may lose as much as 65% in cumulative prejudgment interest alone. In addition, claimants may lose as much as 50% of the real value of the dollars which they ultimately receive (five years later) due to inflation and the consequent decline of the purchasing value of the dollar.98

Furthermore, in a case brought under the FTCA, a claimant does not have the right to a trial by jury.99 Claimants may request only that an advisory jury be empaneled to assist the judge in determining questions of fact.100 The claim must be for money damages for death, personal injury or property injury caused by a negligent act or omission.101 Injunctive or other equitable relief is not recognized under the FTCA.102

B. Applicable Law and Venue

The statutory choice of law directive contained in 28 U.S.C. § 1346(b)103 raises interesting and novel issues when applied to United States involvement in outer space activity. In assessing liability of the United States, courts traditionally have applied the substantive law of the state where the act or omission occurred. Because of the present “earth-based” nature of outer space activity, the injurious space operation most likely will be traced to an earth-based act or omission. As Mr. Peter Nesgos co-

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102 Midwest Growers Coop. Corp. v. Kirkemo, 533 F.2d 455, 465 (9th Cir. 1976).
103 28 U.S.C. § 1346(b) (1982). Section 1346(b) directs courts to apply the substantive “law of the place where the act or omission occurred.” Id.
gently states, "In point of fact, it may be argued that almost every operation in outer space is traceable or linked with ground-based functions." When the act or omission can be traced to some place within the United States or United States territory, the substantive law of the locus of such act or omission, including its choice of law rules, will apply, regardless of whether the actual injuries occur in international waters, outer space or a foreign country.

Conversely, no statutory directive exists as to the controlling substantive law if the acts or omissions causing the injuries, damages or death are solely attributable to, and located in, outer space. However, the absence of such a congressional mandate should not defeat otherwise actionable claims if the act or omission complained of is attributable to United States personnel, registered space vehicles or space objects.

Under Articles VII and VIII of the Outer Space Treaty, the United States has agreed to retain jurisdiction over its own persons and objects in outer space, on the moon and on other celestial bodies. The fact that these areas have no sovereign should not defeat United States sovereignty over, and responsibility for, United States registered vehicles and personnel in outer space. Courts have applied the FTCA, or admiralty jurisdiction where applicable, to

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105 Courts may hold that such actions are to be brought under admiralty jurisdiction. See infra notes 214-289 and accompanying text.

106 In the unlikely event that the negligence attributed to these ground-based activities can be traced only to United States acts or omissions occurring in foreign countries (e.g., tracking stations) with no traceable link to United States territory, then such actions will be barred by the foreign country exception. See 28 U.S.C. § 2680(k) (1982). See also infra notes 270-330 and accompanying text.

107 See generally Beattie v. United States, 756 F.2d 91, 104-06 (D.C. Cir. 1984). In Beattie, the plaintiffs based their FTCA claim on a United States government act or omission occurring in Antarctica where no substantive law existed. The court consequently applied choice of law principles outlined in the Restatement (Second) of Conflict of Laws § 6 (1971) to determine that the substantive law of the District of Columbia should apply. See infra notes 270-330 and accompanying text, which discusses the inapplicability of the foreign country exception to such a situation.
torts committed on or above the sovereignless areas of the high seas and Antarctica, even when the torts occurred solely in these areas.\textsuperscript{108} In a similar situation involving a tort which occurred solely in outer space, a court logically should turn to those relevant choice of law factors set forth in the Restatement (Second) of Conflict of Laws.\textsuperscript{109} In analyzing the substantive constraints involved, it would not be surprising, absent other factors, for courts to conclude that District of Columbia substantive law should apply. The District of Columbia would be the most logical choice because it is the capitol of the United States, the origin of United States space policy and the headquarters of all outer space related federal agencies.

Similarly, an inability to obtain proper venue under 28 U.S.C. § 1402\textsuperscript{110} should not defeat the hearing of this claim. According to section 1402, any action on a tort claim against the United States arising under 28 U.S.C. § 1346\textsuperscript{111} "may be prosecuted only in the judicial district where the plaintiff resides or wherein the act or omission complained of occurred." \textsuperscript{112} If plaintiffs happen to be residents of another country and the act or omission complained of occurs solely in outer space, technically venue might not be proper anywhere. However, congressional intent and a rule of construction adopted by the Supreme Court would not allow such a result. In Brunette Machine Works, Ltd. v. Kockum Industries, Inc.\textsuperscript{113} the Supreme Court noted that there had been, and perhaps still were, occasional cases for which the federal courts had jurisdiction, but for which there existed no district in which venue was

\textsuperscript{108} See, e.g., Beattie, 756 F.2d at 105-06. In this case, the court of appeals held that although 28 U.S.C. § 1346(b) directs the court to apply the law of the place where the tort occurred, the fact that Antarctica has no law to apply should not defeat plaintiff's FTCA claim. Id. at 104-06.

\textsuperscript{109} RESTATEMENT (SECOND) OF CONFLICT OF LAWS § 6 (1971).


\textsuperscript{112} 28 U.S.C. § 1402(b) (1982).

\textsuperscript{113} 406 U.S. 706 (1972).
The Court concluded that Congress had remedied that situation in 1966 by amending the general venue statute. The Court stated:

The [legislative] development supports the view that Congress does not in general intend to create venue gaps, which take away with one hand what Congress has given by way of jurisdictional grant with the other. Thus, in construing venue statutes it is reasonable to prefer the construction that avoids having such a gap.

In a situation involving torts occurring solely in outer space in which venue technically would not be proper in any district, dismissal of such claims for lack of venue would create a gap between jurisdiction and venue. This gap undoubtedly would create a substantial hardship not usually found in other dismissals for lack of venue, where another court with jurisdiction over the case, sitting in a district in which venue is proper, can hear the case.

C. Limited Jurisdictional Parameters

Section 1346(b) of the FTCA sets forth sharply-defined and strictly-construed jurisdictional parameters that any party or the court sua sponte may raise at any time. Under section 1346(b), the acts or omissions complained of must be caused by an employee of the United States government. Clearly, when the acts or omissions can be traced to members of the armed forces or any one of a myriad of government agency employees, this requirement will be met. However, government-sponsored

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114 Id. at 710 n.8.
115 Id.
116 Id. Similarly, the court in Beattie adopted this reasoning with regard to the determination of proper venue according to 28 U.S.C. § 1402 (1982), for claims arising in Antarctica brought by residents of foreign countries pursuant to the FTCA. Beattie, 756 F.2d at 104.
120 According to 28 U.S.C. § 2671 (1982), an employee of the government includes "officers or employees of any federal agency, members of the military or naval forces of the United States, . . . and persons acting on behalf of a federal
outer space activities necessarily involve many private contractors, subcontractors, and other non-government personnel. Confusion may arise as to whether a particular person or juridical entity whose act or omission was the proximate cause of a space related accident was an "employee of the government."

It is now widely held, although there is some disagreement, that the issue of federal employment is a question to be determined by reference to federal law, on the theory that the states may not decide for the United States who is and who is not an employee of the federal government. While section 2671 of the FTCA specifically excludes "contractors" from the definition of a federal agency of the government and thus excludes them from the scope of the FTCA, that section does not indicate when a person or corporation is, in fact, a contractor rather than an employee. In Logue v. United States, the United States Supreme Court held that a person's status as a contractor or an employee should be determined by applying the traditional distinction between employees of a principal and employees of an independent contractor of the principal. The Court stated that the "critical factor in making this determination is the authority of the principal to control the detailed physical performance of the contractor." The Supreme Court concluded that

agency in an official capacity temporarily or permanently in the service of the United States, whether with or without compensation."


122 28 U.S.C. § 2671 (1982). Section 2671 states in part: "The term 'Federal agency' includes the executive departments, the military departments, independent establishments of the United States, and corporations primarily acting as instrumentalities or agencies of the United States, but does not include any contractor with the United States." Id.


124 Id. at 526-27.

125 Id. The Supreme Court makes specific reference to the Restatement (Second) of Agency, which sets forth the distinction:

(1) A master is a principal who employs an agent to perform service in his affairs and who controls or has the right to control the physical conduct of the other in the performance of the service.

(2) A servant is an agent employed by a master to perform service in
the right to make inspections to verify compliance with federal standards absent authority to physically supervise the contractor's employees, did not make the United States the employer; therefore, the United States could not be sued under the FTCA.\textsuperscript{126}

Similarly, one also may have to determine whether a specific person is an employee of the United States government or of the independent contractor. The factor of primary importance is control over the work of such an individual.\textsuperscript{127} If the federal government has such control or right of control, the person ordinarily will be considered an employee of the government. The mere fact that some entity other than the government pays the individual, or that the government owns the property which the person uses negligently, is not determinative of the status of that person.\textsuperscript{128}

In a suit for damages or injuries arising out of outer space activities, it may be practically impossible at the outset of the impending litigation to determine whether an alleged tortfeasor was an employee of the government or whether the tort arose from the actions of a federal agency. Although these two issues may arise in the same case, they are susceptible to separate analysis. Since the claimant will have the burden\textsuperscript{129} to prove the alleged

\textsuperscript{126} Id. at 572 n.5 (citing \textit{Restatement (Second) of Agency} \S 2 (1958)).
\textsuperscript{127} Id. at 531-32.
tortfeasor is an employee of the government, he should
file suit against certain other defendants in their private
capacities as well, at least to the extent that these defend-
ants are not immune from suit. This will ensure that in
the event of a finding that the United States is not liable
under the FTCA, the claimant will not be barred by appli-
cable statutes of limitations from suing the other
defendants.

Another jurisdictional prerequisite to suit is that the
acts or omissions complained of must have been caused
by an employee of the government "while acting within
the scope of his office or employment."130 State respondeat
superior law controls the determination of scope-of-em-
ployment questions.131 However, this law is unclear in
many instances and varies from state to state. The case of
a serviceman acting in the line of duty is analogous to a
private employee acting within the scope of his employ-
ment under the FTCA.132 These cases also are deter-
mined by applicable state respondeat superior law.133

Problems with regard to scope of employment may
arise in space activities if an employee deviates from in-
structions, or commits an unauthorized act, reckless con-
duct or tort while "off duty," either on the ground or
aboard a spacecraft. Problems also may arise if an em-
ployee of a private corporation is working simultaneously
for a government agency, such as NASA. For example, if
an employee's duties as a payload specialist aboard the
Shuttle include the performance of functions for his pri-
ivate employer in addition to certain functions for NASA,
there may be problems in determining whether at the
time of the alleged negligence that person was acting
within the scope of his office or employment with the

132 The United States Code states: "'Acting within the scope of his office, or
employment,' in the case of a member of the military or naval forces of the United
133 See, e.g., Berrettoni v. United States, 263 F. Supp. 907 (D. Mont. 1967)(ser-
viceman's leave status was determined under state respondeat superior law).
United States government.\textsuperscript{134}

Another jurisdictional prerequisite to maintenance of an FTCA action is the occurrence of an act or omission "under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred."\textsuperscript{135} The test for determining the United States' liability is whether a private person would be responsible for similar negligence under the law of the state where the acts occurred.\textsuperscript{136} However, many space activities, either for economic or national security reasons, ordinarily may not be entered into by private persons. To determine whether jurisdiction lies under the FTCA in these situations, the test is whether under applicable state law a private person doing what the government was doing could be sued for negligence.\textsuperscript{137} In Bulloch \textit{v. United States},\textsuperscript{138} a case involving alleged negligence of the government when conducting nuclear tests, the court wrote that

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under the Tort Claims Act permitting recovery against the United States if a private person would be liable, it is not necessary to show that a private person could be sued under identical circumstances. . . . It is pointed out that private persons under existing law cannot legally detonate a nuclear device. Neither can they maintain armies, operate the postal service, operate, independent of Government, certain secret experimental aircraft, or operate military airbases. Yet, there are analogous private activities in the scope of which certain negligent acts would give rise to private liability. [There is] no doubt that as to these, there may be corresponding responsibility on the part of the Government under the Tort Claims Act, de-
\end{quote}

\textsuperscript{134} See generally Pattno \textit{v. United States}, 311 F.2d 604 (10th Cir. 1962) (question arose as to status of Air National Guard flight instructor as state or federal employee).

\textsuperscript{135} 28 U.S.C. § 1346(b) (1982).


\textsuperscript{137} See Big Head \textit{v. United States}, 166 F. Supp. 510 (D. Mont. 1958). However, close attention must be paid to another possible exception to jurisdiction: the discretionary function exception. See infra notes 158-212 and accompanying text.

\textsuperscript{138} 133 F. Supp. 885 (D. Utah 1955).
pending upon the particular facts. . . . To hold the Government responsible for certain acts or omissions occurring in the course of nuclear tests would not necessarily visit the Government with 'novel or unprecedented liabilities' contrary to the intent of Congress.\footnote{Id. at 892 (citations omitted).}

\textit{Bulloch} and subsequent cases support the proposition that suit against the federal government for a particular outer space activity is not banned \textit{per se} simply because such activity is carried out only by the government and not by private enterprise, nor because such a suit would involve a matter for which the government never has been sued before.

It also must be noted that in \textit{Feres v. United States},\footnote{340 U.S. 135, 146 (1950).} the Supreme Court judicially created an exception to the waiver of sovereign immunity accomplished by the FTCA, holding that Congress had not intended to waive sovereign immunity with respect to activity incident to military service. Thus, servicemen generally are precluded from suing the United States government for damages, injuries or death occurring while on duty. In \textit{Feres}, the plaintiff's decedent was an Army private killed in a barracks fire caused by a defective heating plant.\footnote{Id. at 137.} The United States Supreme Court ruled that the United States generally is not liable for any service-connected disability or death of any member of the United States armed services incurred in the course of active duty.\footnote{Id. at 146.} Subsequently, in \textit{Stencel Aero Engineering Corp. v. United States},\footnote{431 U.S. 666 (1977).} the Court filtered out three factors it considered controlling in \textit{Feres}-type cases: (1) the distinctively federal character of the relationship between the soldier and the sovereign; (2) the existence of a no-fault statutory compensation scheme that serves as a substitute for governmental tort liabil-

\footnotesize{\bibliography{references}}
ity; and (3) the concern about possible adverse effects on the military disciplinary structure if tort litigation were allowed against the sovereign.

Therefore, United States military servicemen probably could not obtain FTCA recovery from the government for injuries suffered in a space related accident while on active duty. In Charland v. United States, the United States Supreme Court interpreted "active duty" to encompass those injuries sustained in the course of an activity incident to service and subject to military orders and discipline. In Charland, the Court held that a Navy seaman killed on leave while voluntarily participating in Navy training exercises was barred from recovery under the Feres doctrine. The Court reasoned that although the serviceman was on furlough, he remained on active duty and was subject to military orders and discipline at all times while on board the Navy vessel.

Active duty does not, however, include injuries to servicemen which are not service-connected or in any sense incident to military service. In Snyder v. United States, an Air Force sergeant, while off duty and at his privately-owned home off base, suffered injuries when a government bomber which had been abandoned in flight crashed into his house. The court held that since the injuries were neither service-connected nor in any sense incident to the sergeant's military service, the Feres doctrine did not preclude his FTCA action against the United States.

While there have been a number of conflicting and inconsistent opinions rendered by the courts in attempts to identify situations in which servicemen may recover under

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144 Id. at 672-730. See, e.g., The Veterans Benefit Act, 38 U.S.C. §§ 301-62 (1982) (provides the upper limit of liability for service-connected injuries).
145 Stencel, 431 U.S. at 672-73.
146 615 F.2d 508, 509 (9th Cir. 1980).
147 Id.
148 Id.
150 Id. at 596-98.
the FTCA, a few principles can be stated with reasonable certainty. Servicemen probably will be allowed recovery for space-related injuries occurring while off duty and off base. Conversely, servicemen probably will not be allowed to recover for space-related injuries occurring while on duty and on base. Servicemen injured aboard a United States space object or space vehicle probably will be precluded from recovery under the FTCA regardless of whether they were on duty or off duty.\textsuperscript{151}

Government civilian employees injured while on duty also are precluded from maintaining an action under the FTCA against the United States. The government provides specific remedies for injured employees under the Federal Employee Compensation Act (FECA).\textsuperscript{152} These statutes contain exclusive government liability provisions, and the prohibition against suit extends to relatives or other parties attempting to claim damages through the injured party.\textsuperscript{153} Section 8116(c) of the FECA states, "the liability of the United States or an instrumentality thereof . . . with respect to the injury or death of an employee is exclusive, and in place of all other liability of the United States or the instrumentality to the employee . . . ."\textsuperscript{154} The FECA is the federal equivalent of workmen's compensation. Where the FECA applies, a federal employee may not seek recovery of damages from the United States or a fellow worker.\textsuperscript{155} The FECA only provides relief, however, when there is personal injury sustained in the performance of the federal worker's duty. If the federal employee is injured while off duty, the FECA does not ap-

\textsuperscript{151} \textit{But cf.} Johnson v. United States, 749 F.2d 1530 (11th Cir.) (holding that the Feres doctrine should not bar FTCA recovery by the widow of a Coast Guard helicopter pilot killed during a rescue mission, because the civilian status of the government tortfeasors, FAA flight controllers, made it inconceivable that the suit would adversely affect military discipline), \textit{vacated for rehe'g en banc}, 760 F.2d 244 (11th Cir. 1985), \textit{reinstated}, No. 83-5764 (11th Cir. Jan. 13, 1986).

\textsuperscript{152} 5 U.S.C. §§ 8101-93 (1982).

\textsuperscript{153} 5 U.S.C. § 8116(c); see also Lockheed Aircraft Corp. v. United States, 103 S. Ct. 1033, 1036 (1983).


\textsuperscript{155} Gilliam v. United States, 407 F.2d 818, 819 (6th Cir. 1969).
ply and that employee may seek compensation against the United States under the FTCA. Therefore, the success of claims against the United States by federal employees or their relatives for injuries arising out of outer space activities depends upon whether the employee was injured in the performance of his duty.

D. Particular Exceptions

The FTCA also contains twelve specific exceptions to the government's waiver of sovereign immunity.\(^\text{156}\) Although these exceptions usually are asserted by the government when answering a claimant's complaint, as a practical matter these defenses are jurisdictional and can be raised appropriately at any time during the litigation.\(^\text{157}\) The following discussion examines some of the more problematic exceptions which might be raised in suits against the government for outer space related torts.

1. Discretionary Function Exception

By far the most confusing, controversial and litigated exception is the discretionary function exception which bars

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\text{[a]ny claim based upon an act or omission of an employee of the Government, exercising due care, in the execution of a statute or regulation, whether or not such statute or regulation be valid, or based upon the exercise or performance or the failure to exercise or perform a discretionary function or duty on the part of a federal agency or an employee of the Government, whether or not the discretion involved be abused.}\(^\text{158}\)
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\(^{156}\) 28 U.S.C. § 2680 (1982). These exceptions include but are not limited to the discretionary function exclusion; any claim for which a remedy is provided in admiralty; any claim arising out of assault, battery, false imprisonment, malicious prosecution, abuse of powers, libel, slander, deceit or interference with contractual rights; any claim arising out of combatant activities of the military, naval forces or Coast Guard during time of war; and any claim arising in a foreign country. Id.


Nowhere in the FTCA is the term "discretionary function" defined, and the legislative history provides very little guidance. The leading case construing the parameters of the discretionary function exception is the United States Supreme Court case of *Dalehite v. United States*. While *Dalehite* is the landmark case construing this exception, it is also the cause of much confusion because of the Court's unduly broad language and refusal to define precisely where the discretionary exception ends. *Dalehite* arose out of the disaster caused by the eruption of fires and explosions after the government had loaded ships with combustible fertilizer. Negligence was alleged in the adoption of the plan to export the fertilizer, in contracting for its manufacture, in handling the shipment and in fighting the subsequent fire. The Court held that the case was barred by the discretionary function exception, finding that the federal employees involved were following "a plan developed at a high level under a direct delegation of plan-making authority from the apex of the Executive Department." The Court, in discussing the discretionary exception, stated that it covers "all employees exercising discretion," and that this includes the "discretion of the executive or the administrator to act according to one's judgment of the best course." The "determination made by executives or administrators in establishing plans, specifications or schedules of operations" and the acts of subordinates in carrying out these plans are also covered by this exception. However, the Court stated that the exception does not include, for example, the negligent conduct of an employee in an automobile accident.

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161 Id. at 40.
162 Id. at 33.
163 Id. at 34.
164 Id. at 35-36.
165 Id. at 34.
While the Supreme Court defined the two extreme parameters of the discretionary function exception, it refused to delineate an all-important precise middle boundary where discretion ends and liability begins.\textsuperscript{166} The Court simply stated, "[w]here there is room for policy judgment and decision there is discretion."\textsuperscript{167} Subsequent courts and legal scholars have struggled to draw lines in this grey middle area. The results often have been inconsistent and unpredictable. However, a majority of courts seem to have adopted a planning level versus operational level test in applying this exception to particular factual situations.\textsuperscript{168} The district court in \textit{Swanson v. United States}\textsuperscript{169} provided guidance for general application of this test:

Although portions of the \textit{Dalehite} opinion are no longer controlling, see \textit{Rayonier, Inc. v. United States}, 352 U.S. 315, 319, 77 S. Ct. 374, 1 L. Ed. 2d 354 (1957), the planning level-operations level distinction has been adopted by several circuits. . . .

In a strict sense, every action of a government employee, except perhaps a conditioned reflex action, involves the use of some degree of discretion. The planning level notion refers to decisions involving questions of policy, that is, the evaluation of factors such as the financial, political, economic, and social effects of a given plan or policy. For example, courts have found that a decision to reactivate an Air Force Base . . . or to change the course of the Missouri River . . . or to decide whether or where a post office building should be built in Madison, Wisconsin . . . are on the planning level because of the necessity to evaluate policy factors when making those decisions.

The operations level decision, on the other hand, involves decisions relating to the normal day-by-day operations of the government. Decisions made at this level may

\textsuperscript{166} \textit{Id.} at 35.
\textsuperscript{167} \textit{Id.} at 36.
\textsuperscript{168} \textit{Comment, Discretion and the FAA: An Overview of the Applicability of the Discretionary Function Exception of the FTCA to FAA Activity, 49 J. AIR L. & COM. 143, 153 (1983).}
\textsuperscript{169} 229 F. Supp. 217 (N.D. Cal. 1964).
involve the exercise of discretion but not the evaluation of the policy factors. For instance the decision to make low level plane flights to make a survey . . . or the operation of an air traffic control tower . . . or whether a handrail should be installed as a safety measure at the United States Post Office in Madison, Wisconsin . . . involve the exercise of discretion but not the evaluation of policy factors.170

This planning level versus operational level test is relevant in almost every governmental involvement. When a planning level decision has been made, there are operational aspects to then be carried out; there are details to then be implemented by subordinate personnel. Once a planning level decision has been made, the government thereafter may be liable for any negligence in carrying out the decision. In Pierce v. United States,171 an action against the United States under the FTCA for injuries sustained by a lineman in an electrical accident at a government ordinance works, the court stated:

Once the decision was made to construct substations and bring in power, all of the discretion required had already been exercised. Therefore, it became the duty of the government and its agents and employees to exercise due care in carrying out the program decided upon. The complete failure to do so is outside the protection afforded the discretionary functions already exercised and results in liability on the part of the government.172

Similarly, it generally is held that the failure to adopt regulations is a discretionary function, but a failure to carry out those regulations is not.173

a. As Applied to Indirect Government Activities (Regulation and Inspection)

It generally has been held that cases involving the issu-

170 Id. at 219-20 (citations omitted).
172 Id. at 731 (emphasis added).
ance of licenses, authorizations and permits would fall under the discretionary function exception and bar suit against the government absent evidence of an established standard for the issuance of a particular authorization which the government employee failed to follow properly. Many courts follow the operational versus planning level test as an aid in determining whether liability exists in these types of situations.

It appears that the Department of Transportation's regulatory activities, as the lead agency for the licensing of commercial expendable launch vehicles and launching facilities, would fall under the discretionary function exception. Suits generally would be barred against the DOT for negligent licensing certification processes which employees omit or disregard. However, liability against the DOT may lie because the negligent act or omission occurred at the operational level in disregard of a specific DOT regulation or standard. Yet a recent Supreme Court decision may have broadened the discretionary function exception even further.

In *United States v. S.A. Empresa de Viacao Aerea Rio Grandense* (hereinafter *Varig Airlines*), the Supreme Court held that the United States enjoys immunity from liability for tort claims involving alleged FAA negligence in the issuance of aircraft type certificates where the FAA "spot check" inspection system has been utilized to monitor aircraft manufacturers' compliance with safety regulations. Broadly interpreting the discretionary function exception for the first time since its decision in *Dalehite v. United States* thirty years earlier, the Supreme Court stated that discretionary activities of a federal agency "acting in its role as a regulator of the conduct of private individuals" are immune from tort liability under the.

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176 Id. at 2768-69.
177 See supra note 160.
Varig deals with the parameters of liability of the FAA in failing to discover a safety defect while carrying out its regulatory duties of inspecting and certifying commercial aircraft. Varig also is of particular relevance, however, to the future liability parameters of the DOT in its function as the lead regulatory agency and general overseer and coordinator of commercial space launch activities including, inter alia, the licensing of private launch vehicles and launch sites. Problematically, the Varig decision deals with narrow facts — the FAA policy decision to utilize a spot check mechanism of compliance review during the certification process of a commercial aircraft. Under the facts of both Varig and its companion case, United Scottish Insurance Co. v. United States, an area of questionable design was not examined at all as a result of the government’s discretionary policy decision to adopt a spot check method. Under these facts, the failure to examine an area in accordance with this policy decision cannot give rise to liability. However, there is conflict as to whether the Varig decision will bar actions involving actual inspections, where an inspection is undertaken negligently.

Not surprisingly, the government takes the position that Varig stands for the proposition that the FAA’s actions in all certification matters are within the discretionary function exception. Plaintiffs’ lawyers assert that Varig does not affect the proposition that actions of the government in actively participating in the inspection process and in negligently failing to exercise due care in connection with such inspections will lead to liability. Already conflicts have arisen in the federal courts in interpreting the parameters of Varig.

In Proctor v. United States, the plaintiffs alleged negli-

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178 104 S. Ct. at 2765.
179 104 S. Ct. at 2755.
gence by the FAA in the inspection and issuance of a type certificate for a Saudi Arabian Airlines L-1011 aircraft severely damaged by fire during a flight in August 1980. Plaintiffs attempted to distinguish Varig on the ground that they were alleging negligence by the FAA in conducting an inspection actually performed on the aircraft, while Varig considered generally the propriety of a "spot-check" inspection system and involved only an alleged failure to inspect. The district court in Los Angeles rejected this argument, stating that, under Varig, the "entire FAA certification process is immune from potential tort liability." The court said that the discretionary judgment of FAA employees in the course of certification "encompasses decisions to thoroughly check, cursorily check, or not to check at all a particular aircraft or system ...." Judge Wallace Tashima reasoned that the FAA logically could not be subject to liability for negligently performing an inspection when, under Varig, it is immune from liability for negligently failing to perform an inspection.

The United States also has been successful in some courts in obtaining a broad interpretation of Varig in non-aviation cases. In Hylin v. United States, which involved an allegedly negligent inspection by the Mine Enforcement and Safety Administration, the United States Court of Appeals for the Seventh Circuit assumed that the agency was required to conduct the inspection, but concluded that mine inspectors were required to exercise discretion in performing those inspections and in taking enforcement action. The court of appeals thus held in Hylin that the claims were barred by the discretionary function exception to the FTCA.

The decisions in Proctor and Hylin demonstrate that the

182 19 Av. Cas. at 18,011.
183 Id.
184 Id. In contrast, the Supreme Court in Varig characterized the plaintiff's claims as alleging "the negligent failure of the FAA to inspect certain aspects of aircraft type design in the process of certification ...." 104 S. Ct. at 2766.
185 755 F.2d 551 (7th Cir. 1985).
government will attempt to extend *Varig* and the discretionary function exception in all cases involving allegations of negligence by government employees during inspection and enforcement activities. The government certainly will use this precedent to attempt to extend the discretionary function exception to all DOT and other federal agency licensing and certification activities of commercial space launch vehicles, payloads and private launch ranges. However, a recent decision indicates that the government may not always be successful in this endeavor. In *McMichael v. United States*,186 the Eighth Circuit held that the discretionary function exception did not bar claims arising from the alleged negligence of the Department of Defense in failing to enforce compliance by a contractor with safety requirements set forth in a government contract.187 The court distinguished *Varig* on several grounds, including the ground that the FAA's "spot-check" inspection system used in the issuance of aircraft type certificates was intended merely to police compliance with safety regulations, while the Department of Defense had assumed responsibility for assuring such compliance and the Department's quality assurance inspectors were required to conduct specific inspections not involving any discretionary judgment.188

Just as it is difficult to reconcile the Supreme Court's 1953 decision in *Dalehite*189 with the many subsequent decisions190 rejecting the government's discretionary func-

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186 751 F.2d 303 (8th Cir. 1985).
187 Id. at 307.
188 Id. The court emphasized the non-discretionary nature and quality of the work done by Defense Department employees when compared to FAA employees in the "spot check" system. The Defense Department had three quality control inspectors on site at all times at the plant in this case. The inspectors' job descriptions included emphasis on compliance with safety regulation. In addition, the inspection procedure included a fifty-one step review checklist for safety compliance. Consequently, the court held that the Defense Department inspectors were not asked to make discretionary regulatory judgments, and therefore the discretionary function exception did not operate to bar the claims. Id.
190 See, e.g., Rayonier, Inc. v. United States, 352 U.S. 315 (1957) (discretionary
tion defense, it will be difficult to reconcile *Varig* with *McMichael, Proctor, Hylin* and other decisions which are sure to be handed down in the future. *Varig* and its progeny undoubtedly will have a substantial effect on any tort claims arising out of DOT or any other federal agency's certification, registration, approval or regulation of outer space activities. As a practical matter, until further Supreme Court clarification, much will depend upon the philosophy of the particular court hearing the matter.

b. *As Applied to Direct Governmental Activities*

While regulatory involvement of the United States in outer space activities will be subject to the legal parameters set forth under *Varig* and its progeny, the discretionary function exception also applies to administrative or policy decisions regarding direct outer space activities undertaken by the United States. Once a specific task is undertaken by the government, however, that task must be performed with due care, or liability will attach.

In *Indian Towing Co. v. United States*, a case involving the failure to properly maintain a lighthouse, the United States Supreme Court held that the United States was liable for negligently performing a task it voluntarily undertook in its discretion. The basis of the holding is that while it may be discretionary on the part of the government to undertake a task, once the task is undertaken and relied upon, the government is held to the same standard of care as private entities in carrying out the task. The determination of reasonableness in this

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function defense defeated FTCA suit claiming negligence of employees of the fire service in fighting a fire); Ingham v. Eastern Air Lines, 373 F.2d 227 (2d Cir.) (discretionary function exception held not applicable to air traffic controller who failed to comply with an FAA regulation resulting in death of twenty-five passengers and crew aboard airliner), cert. denied, 389 U.S. 931 (1967).

192 Id. at 69.
193 Id. In applying this rule to the facts of the case, the court stated:

The Coast Guard need not undertake the lighthouse service. But once it exercised its discretion to operate a light on Chandeleur Island and engendered reliance on the guidance afforded by the light,
situation is purely a matter of state law. Although *Indian Towing* was decided by the Supreme Court prior to *Varig*, *Varig* did not overturn *Indian Towing*.

The rule set forth in *Indian Towing* is known as the "good Samaritan" rule and has been applied in a number of situations. For example, once a rescue operation is undertaken, it must be performed with due care. Likewise, once the government has decided to place pilings in a canal, the government must use care to make sure that the submerged pilings do not damage boats. Similarly, the United States has consented to suit for the negligence of its air traffic control employees in the operations phase of their duties with respect to guiding and controlling aircraft in the air, landing, taking off and taxiing at airports.

With regard to potential liability of government air traf-

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194 Rayonier, 352 U.S. 315 (1957). Here the Court held that the United States would be liable for losses due to negligence of employees of the Forest Service in fighting a fire if the law of the state, Washington, would impose liability on private persons in similar circumstances. *Id.* at 315. See Reynolds, *The Discretionary Function Exception of the Federal Tort Claims Act*, 57 GEO. L. J. 81, 94 n.71 (1968).

195 United States v. Lawter, 219 F.2d 559 (5th Cir. 1955) (FTCA action for damages for death of plaintiff's wife who fell from Coast Guard helicopter while being rescued).

196 Everitt v. United States, 204 F. Supp. 20 (S.D. Tex. 1962) (United States held liable for damages to shrimp boat resulting from failure of Corps of Engineers to discover and remove piling which had been submerged for over six months).

197 Spaulding v. United States, 455 F.2d 222, 226 (9th Cir. 1972) (holding that controller's duty to warn does not completely relieve pilot from primary duty or responsibility); American Airlines v. United States, 418 F.2d 180, 192 (5th Cir. 1969) (stating in *dicta* that an air traffic controller, whether or not required to by manuals, must warn of dangers reasonably apparent to him but not apparent to the pilot); Ingham v. Eastern Air Lines, 373 F.2d 227, 236 (2d Cir.) (holding that because the FAA voluntarily undertook to transmit weather warnings to pilots, the FAA had a duty to transmit these warnings non-negligently), *cert. denied*, 389 U.S. 931 (1967).
fic control functions, the degree of care required by air traffic controllers in addition to their specific duties outlined in FAA air traffic control regulations and manuals is "reasonable care." The degree of "reasonable care" here increases according to the dangers involved in any given situation, for "[t]here is always lurking the possibility of tragic accidents capable of snuffing out the lives of hundreds in a mere matter of seconds."198 Stork v. United States stresses "the need for warning . . . in the face of extreme danger known to the tower."199 In Maryland v. United States, the court stated, "what constitutes due care under any circumstances necessarily depends in large part on the risk and hazard involved."200

From this analysis, the FAA can be held liable for negligent acts or omissions in the case of failing to separate aircraft from or adequately warn aircraft about outer space activities occurring through FAA controlled airspace. This analysis also may apply to other government agencies such as NASA or DOD which supervise, undertake and operate launch activities in restricted airspace controlled by those agencies.201

Furthermore, if the United States plays a role in maintaining safety by the separation of outer space vehicles from other outer space objects and debris and this role is relied upon, then the United States may be liable for any breach of reasonable care in the performance of this oper-

199 430 F.2d 1104, 1108 (9th Cir. 1970).
201 As of April 30, 1984, there were seventeen violations of restricted airspace by light aircraft during Shuttle launches. Kokum, KSC Airspace Violations Raise Concern, Av. Week & Space Tech., Apr. 30, 1984, at 51. Restricted airspace surrounds the Kennedy Space Center/Cape Canaveral launch areas. Any restricted areas open during non-launch times are closed three hours before a Space Shuttle launch. Pilots are restricted by Notice to Airmen (NOTAM's) twenty-four hours before the areas are closed. Id. If for some reason the procedure for NOTAM's is not followed or there is a failure to adequately warn aircraft or assure separation and this failure results in injury or death, it is probable that the United States government will be liable under the reasoning set forth in Indian Towing. See supra notes 191-197 and accompanying text.
atation which proximately causes injuries.202 In other words, if the United States performs space traffic control operations, then the United States also will become the target of potential lawsuits arising out of any act or omission which is relied upon and which proximately causes injuries under the reasoning set forth in Indian Towing.203

The United States Air Force, through North American Defense (NORAD)/Space Command, is responsible for United States space traffic monitoring activities.204 NORAD already performs a collision avoidance role in the United States Shuttle Orbiter missions.205 NORAD performs a Computation of Miss Between Orbits (COMBO) assuring safe separation of the Shuttle from other objects during launch and orbit. NORAD compares the flight path of the Shuttle and other space objects and computes a point of closest approach (PCA). If a risk is determined, the Shuttle avoids the risk by maneuvering.206 NORAD/Space Command also performs a COMBO for private launches such as the Space Services of America September 1982 launch of its CONESTOGA I rocket.207 While NORAD/Space Command apparently has no duty to serve as a “space traffic controller,” once it undertakes this duty, any failure to adequately monitor and warn about inadequate separation or an otherwise

202 United States Air Force (USAF) Colonel Gerald M. May, Director of Space Operations for Space Command, states, “In order for us to keep everything separated in space, we are going to become the traffic cop.” Corault, Center Set for Soviet Space Monitoring, Av. Week & Space Tech., Mar. 28, 1983, at 57. See also Corault, Space Defense Organization Advances, Av. Week & Space Tech., Feb. 8, 1982, at 21. USAF Lieutenant Colonel William Bowers, Space Defense Director for the Space Defense Operations Center (SDOC), likened the current role of the SDOC to that of early United States air traffic control. Id.
203 See supra notes 191-197 and accompanying text.
206 Id.
207 Dula, supra note 50, at 309, 320.
potentially dangerous situation will result in liability under the reasoning set forth in *Indian Towing*.

However, current United States space tracking facilities are generally military in nature, emphasizing national security. Consequently, government attorneys may successfully shield the United States from liability under the judicially construed "national security" exception to the FTCA. Courts have held that the United States government has broad discretion in actions which involve national security. This discretion is illustrated by the Korean Airlines disaster of September 1, 1983, in which 269 people died when KAL Flight 007 was shot down.208 In subsequent litigation, two groups of plaintiffs alleged that the United States negligently deployed military aircraft in the vicinity of the flight path of Flight 007 and that the government should have utilized its capabilities to warn KAL 007 that it was headed for danger.209 The United States filed motions to dismiss the plaintiffs' actions and to enter summary judgment as to all claims based upon the United States providing air traffic services and the failure to warn of any impending danger.210 The Government asserted that the plaintiffs' allegations were superceded by national security considerations.211 The

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208 *In re* Korean Airline Disaster of Sept. 1, 1983, 18 Av. Cas. (CCH) 17,942 (D.D.C. 1984). During its flight on August 31 through September 1, 1983, Korean Airlines (KAL) Flight 007 deviated from its assigned international flight, R20, which it was required to follow after departure from Anchorage, Alaska, while en route to Seoul, Korea. *Id.* The failure of Flight 007 to adhere to its assigned flight path resulted in its passage over the Kamchatka Peninsula, the Sea of Okhotsk, Sakhalin Island, and the Sea of Japan. *Id.*

The Union of Soviet Socialist Republics (U.S.S.R.) controls the airspace over the Kamchatka Peninsula, the Sea of Okhotsk and Sakhalin Island. Prior to the September 1, 1983 occurrence, the U.S.S.R. published warnings that aircraft flying in that airspace may be fired upon without warning. The U.S.S.R. dispatched jet fighters to intercept KAL Flight 007. Flight 007 was struck by one or more explosive missiles fired by U.S.S.R. interceptor aircraft, causing Flight 007 to crash into the Sea of Japan. *Id.*

209 *Id.*


court agreed with the Government:

"[U]nder the doctrine formulated in the landmark decision, Baker v. Carr, 369 U.S. 186 (1962), plaintiffs may not present these claims against the government based upon the decisions of the military concerning the national security. . . .

To the extent that plaintiffs' claims suggest that the government possesses capabilities which it could have utilized to warn KAL 007 but chose not to utilize, the claims shall be dismissed. The failure to adopt a policy to utilize available equipment and procedures for the purposes and in the manner plaintiffs suggest is a basic policy decision. Since such alleged negligence is not based upon "imperfectly executing a federal program established either by an act of Congress or a federal regulation" it is not actionable.\footnote{Id. at 17,944.}

The court's reasoning with regard to national security is significant. Any suit based on the United States government's failure to warn of a dangerous situation in outer space will undoubtedly come up against similar reasoning. Justice Department attorneys could defend any case arising in these circumstances by asserting that for NORAD/Space Command to warn of an impending dangerous situation in space would involve a policy decision: not to warn versus violating national security. Courts are very hesitant to attach liability to any decisions of the United States government which may involve national security.

The discretionary function exception together with the judicially-created national security exception are two potentially broad shields which may effectively preclude recovery based upon the United States government's negligence in the regulation, supervision and monitoring of outer space activities. Curiously, if private entities were sued on identical grounds under traditional tort principles, liability almost certainly would attach.
2. Suits in Admiralty

Section 2680(d) of the FTCA\(^{213}\) provides that the FTCA does not apply to any claim for which the Suits in Admiralty Act (SIAA)\(^{214}\) provides a remedy. The SIAA is a waiver of sovereign immunity of the United States for maritime activities resulting in liability against the government.\(^{215}\) Jurisdiction under the FTCA and SIAA are mutually exclusive.\(^{216}\) SIAA jurisdiction encompasses admiralty claims arising on navigable waters that bear a significant relationship to traditional maritime activity.\(^{217}\) Section 745 of the SIAA clearly sets forth a two-year absolute and non-waivable statute of limitations for actions brought pursuant to the SIAA.\(^{218}\) The SIAA generally applies to aviation accidents occurring over the high seas.\(^{219}\) It also may apply to outer space related accidents occurring in airspace over the high seas or on the high seas if they bear a significant relationship to maritime activity.\(^{220}\)

In *Executive Jet Aviation v. City of Cleveland*,\(^{221}\) the Supreme Court clarified the kind of "significant relationship to maritime activity" necessary to invoke SIAA admiralty jurisdiction for aviation torts.\(^{222}\) In *Executive Jet*, an aircraft accident occurred immediately after take-off when the plane flew into a flock of seagulls, ingesting some of the birds into one of the engines. The aircraft lost power

\(^{215}\) Id. at §§ 742, 745.
\(^{217}\) Executive Jet Aviation, Inc. v. City of Cleveland, 409 U.S. 249, 268 (1972); Roberts v. United States, 498 F.2d 520, 523 (9th Cir.), cert. denied, 419 U.S. 1070 (1974).
\(^{219}\) See *Executive Jet*, 409 U.S. at 268-74.
\(^{220}\) See id. The mere fact that an aviation accident occurs over navigable waters does not, however, guarantee SIAA jurisdiction; the claim must bear the requisite relationship to traditional maritime activity. *Id.*
\(^{221}\) 409 U.S. 249 (1972).
\(^{222}\) *Id.* at 268-74.
and fell into Lake Erie.\textsuperscript{223} The Supreme Court decided that since the aircraft flight was scheduled to be entirely within the United States, the sinking of the aircraft on navigable waters was merely fortuitous.\textsuperscript{224} According to the Court, SIAA jurisdiction should not be predicated solely on whether the plane happened to be flying over land or water when the accident occurred.\textsuperscript{225} The Court formulated a "locality plus" test in which both the locality of the tort and the activity involved are important.\textsuperscript{226}

It appears that the Supreme Court's reasoning in \textit{Executive Jet} would apply with equal force to space torts occurring over or on navigable waters. However, the scope of admiralty jurisdiction is not fixed but is restricted or enlarged as the law develops.\textsuperscript{227} The question of whether space torts in general fall within the jurisdiction of admiralty or law is still untested. Logical extension of the Supreme Court's \textit{Executive Jet} reasoning regarding the dissimilarity of most aviation torts to maritime activity, however, suggests that most space torts also will not be considered cognizable in admiralty absent a significant relationship to a maritime activity. It should be remembered that at the beginning of the development of aviation in the United States, however, there was considerable opinion to the effect that "the entire ocean of air surrounding the earth" was within admiralty jurisdiction.\textsuperscript{228} Therefore, all flights through the air medium were within admiralty jurisdiction. While this theory never received general acceptance,\textsuperscript{229} it is possible that such reasoning may be urged by advocates who see ad-

\begin{thebibliography}{9}
\bibitem{223} Id. at 250.
\bibitem{224} Id. at 272-73.
\bibitem{225} Id. at 267-68.
\bibitem{226} See id. at 251, 265-68.
\bibitem{228} See Wilson v. Transocean Airlines, 121 F. Supp. 85, 91 n.23 (D. Cal. 1954); see generally, 2 Am. Jur. 2D Admiralty § 23 (1962).
\bibitem{229} Wilson, 121 F. Supp. at 91 n.23.
\end{thebibliography}
vantages in the application of admiralty law to their particular case. Such a general argument absent specific facts linking the tort to maritime activities, however, appears unlikely to succeed in light of the *Executive Jet* decision.

Similarly, these advocates also may assert that since Congress recently extended the federal courts special maritime and territorial *criminal* jurisdiction to space flights, admiralty jurisdiction over such flights also might extend to civil cases. However, this argument would be spurious in light of the fact that in the past Congress also extended federal maritime criminal jurisdiction to include crimes committed on board aircraft in flight over the high seas, while maritime civil jurisdiction for torts lies only if the wrongful acts bear a significant relationship to maritime activity.

Finally, the Supreme Court in *Executive Jet* effectively separated aeronautical torts from torts related to "waterborne vessels." Such reasoning can easily be applied to space torts as well:

Unlike waterborne vessels, [airplanes] are not restrained by one-dimensional geographic and physical boundaries. For this elementary reason, we conclude that the mere fact that the alleged wrong "occurs" or "is located" on or over navigable waters — whatever that means in an aviation context — is not of itself sufficient to turn an airplane neg-

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230 18 U.S.C. § 7(6) (1982) provides that the federal courts' special maritime and territorial jurisdiction in criminal cases includes jurisdiction over:

[A]ny vehicle used or designed for flight or navigation in space and on the registry of the United States pursuant to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies and the Convention on Registration of Objects Launched into Outer Space, while that vehicle is in flight, which is from the moment when all external doors are closed on Earth following embarkation until the moment when one such door is opened on Earth for disembarkation or in the case of a forced landing, until the competent authorities take over the responsibility for the vehicle and for persons and property aboard.

*Id.*


232 See *supra* notes 222-226 and accompanying text.

233 409 U.S. at 265-68.
ligence case into a "maritime tort". It is far more consistent with the history and purpose of admiralty to require also that the wrong bear a significant relationship to traditional maritime activity. We hold that unless such a relationship exists, claims arising from airplane accidents are not cognizable in admiralty in the absence of legislation to the contrary. . . . It is true that in a literal sense there may be some similarities between the problems posed for a plane downed on water and those faced by a sinking ship. But the differences between the two modes of transportation are far greater, in terms of their basic qualities and traditions, and consequently in terms of the conceptual expertise of the law to be applied. . . . For the reasons stated in this opinion we hold that, in the absence of legislation to the contrary, there is no federal admiralty jurisdiction over aviation tort claims arising from flights by land-based aircraft between points within the continental United States.\textsuperscript{234}

It is important to note that the \textit{Executive Jet} decision was limited to flights by \textit{land based} aircraft between points within the continental United States.\textsuperscript{235} The Supreme Court in \textit{Executive Jet} suggested, and subsequent decisions have held, that admiralty jurisdiction will still lie for aviation accidents on international flights over the high seas, or other aviation activities which bear a significant relationship to maritime activity.\textsuperscript{236} Domestic flights between islands or between islands and mainland have been held to fall under admiralty jurisdiction.\textsuperscript{237}

From this analysis, it appears that most accidents involving outer space activities would not lie in admiralty, but in law. However, certain operations inherent in space activities may be deemed to have a significant relationship to maritime activities, such as waterlaunch activities, splashdown activities, and Coast Guard and Navy safety,

\textsuperscript{234} 409 U.S. at 268-69, 274.
\textsuperscript{235} \textit{Id}. at 274.
\textsuperscript{236} 409 U.S. at 274; Roberts v. United States, 498 F.2d 520, 524 (9th Cir.), \textit{cert. denied}, 419 U.S. 1070 (1974).
reconnaissance and tracking activities. It is plausible, therefore, that if an accident occurs during certain phases of certain outer space related activities, the SIAA, not the FTCA, will apply in a resulting tort action against the United States.\textsuperscript{258}

When a court's admiralty jurisdiction under the SIAA is held applicable to an accident arising from United States outer space activities and the accident results in death to people on the high seas or in subadjacent airspace, then the Death on the High Seas Act (DOHSA)\textsuperscript{239} may apply to any subsequent action filed. Congress enacted DOHSA in 1920 because the Supreme Court previously had concluded that general maritime law provided no basis for recovery in the case of wrongful death.\textsuperscript{240} The DOHSA provides a remedy for wrongful death "occurring in the high seas beyond a marine league [three nautical miles] from the shore of any State, or the District of Columbia, or the territories or dependencies of the United States."\textsuperscript{241} Courts have broadly interpreted the term "high seas" under DOHSA and have construed the term to include territorial waters of a foreign country.\textsuperscript{242} A maritime tort committed on navigable waters within a state, however, will be governed by the wrongful death statute of that state.\textsuperscript{243}

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\bibitem{} Compare \textit{Kelly v. United States}, 531 F.2d 1144 (2d Cir. 1976) (Coast Guard negligence during rescue of drowning victims from capsized sailboat fell within admiralty jurisdiction even though the negligence in question took place on land, since the tortious conduct bore a significant relationship to traditional maritime activity), \textit{with} \textit{Teachey v. United States}, 363 F. Supp. 1197 (D. Fla. 1973) (negligence following Coast Guard helicopter rescue of victims from sinking boat did not fall within admiralty jurisdiction since the negligence occurred after the helicopter returned to land and refueled); \textit{see generally} Annot., 30 A.L.R. Fed. 759 (1976) (discussing what constitutes a significant relationship to traditional maritime activity to support federal admiralty jurisdiction in aviation tort cases).
\bibitem{} \textit{See, e.g., In re Air Crash Disaster Near Bombay, India}, 531 F. Supp. 1175, 1182-84 (W.D. Wash. 1982), and the sources cited therein.
\bibitem{} Annot., 71 A.L.R. 2d 1296, 1302-03 (1960).
\end{thebibliography}
a. *Damages Recoverable Under DOHSA*

DOHSA provides a right of action under United States admiralty law and under the law of any foreign country if such a right is granted under the applicable foreign law.\(^{244}\) Although foreign substantive law can be applied, United States procedural law is still followed. However, the remedies granted under the DOHSA choice of law provisions are not cumulative.\(^{245}\) Instead, the federal court hearing the case must decide whether to apply American law or foreign law in a given situation, applying relevant choice of law principles to the particular facts and circumstances presented.\(^{246}\) Courts considering relevant choice of law principles applicable to the DOHSA have concluded that the choice of law principles governing claims brought under the Jones Act,\(^{247}\) as set forth in *Lauritzen v. Larsen*,\(^{248}\) govern DOHSA choice of law questions as well.\(^{249}\) The Supreme Court in *Lauritzen* enumerated seven points of contact to be considered in choosing applicable law: (1) the place of the wrongful act; (2) the law of the flag; (3) the allegiance or domicile of the injured; (4) the allegiance of the shipowner; (5) the place of contract; (6) the inaccessibility of a foreign forum; and (7) the law of the forum.\(^{250}\) In *Hellenic Lines Ltd. v. Rhoditis*,\(^{251}\) the Supreme Court added an eighth factor: the shipowner's base of operations.\(^{252}\) Such factors apply to aircraft accidents and can be applied easily to space accidents occurring on the high seas.


\(^{245}\) In re Air Crash Disaster Near Bombay, India, 531 F. Supp. at 1185.

\(^{246}\) See id. at 1185-90.


\(^{248}\) 345 U.S. 571, 583-92 (1953).


\(^{251}\) See id. at 306.

\(^{252}\) Id. at 309.
If the DOHSA is applicable, then specific damage law applies. DOHSA sets forth its own remedy and applicable substantive law. DOHSA section 762 provides that recovery in a suit brought under the Act "shall be a fair and just compensation for the pecuniary loss sustained by the persons for whose benefit the suit is brought." In determining the amount of pecuniary loss to the beneficiaries, the chief element to be taken into consideration is the loss of the decedent's actual financial assistance or contributions to the beneficiaries. Generally, awards of pecuniary loss represent two periods of pecuniary loss: losses from the time of the decedent's wrongful death up to the date of judgment, and future losses occurring subsequent to the date of judgment. With regard to future losses, DOHSA requires that the court discount the award amount to its present value.

In determining the amount of pecuniary loss, courts have taken into consideration the decedent's health, life expectancy and work expectancy. Past earnings and probable future earnings also play a very significant role in determining the amount of pecuniary loss to the beneficiaries. The decedent's projected personal living expenses, such as food, mortgage payments, basic utilities and the decedent's "pocket money," also must be factored into the DOHSA damages determination.

Pre-judgment interest may be allowed in DOHSA actions at the discretion of the trial court. Pre-judgment interest from the date of death has been held allowable.
under DOHSA. In a recent case brought under DOHSA, the court awarded pre-judgment interest at a rate of eight percent. DOHSA does not allow recovery for the decedent’s conscious pain and suffering, or for the beneficiaries’ loss of love and affection or grief caused by the wrongful death of the decedent, or for funeral or burial expenses.

3. The Foreign Country Exception

Another possible defense which the Justice Department may raise in an otherwise actionable FTCA claim against the United States for torts resulting from outer space activities is the “foreign country” exception. Section 2680(k) of the FTCA exempts from coverage under the FTCA “any claim arising in a foreign country.” Legislative history and case law indicate that this exception seeks to prevent the United States government from being subjected to liability dependent upon the law of a foreign power. This issue has not yet been resolved. In view of the underlying rationale for this exception, however, it appears that outer space will not be construed as a “foreign country” under section 2680(k) since outer space, per se, is not subject to the laws of a foreign power and is indeed “sovereignless.” Such extensions of sov-

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266 Id. at 538.
268 See infra notes 272-322 and accompanying text.
269 Id.
270 OST, supra note 24. This Treaty clearly states: “Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.” Id.
ereign immunity, though, to judicially untested areas not specifically included in the waiver of immunity or contemplated at the time of drafting, should not be made lightly. Consequently, an in-depth analysis of the relevant legislative history and case law is warranted. The following analysis will reveal that the foreign country exception will not be a valid defense for the United States against FTCA claims arising out of government activities in outer space, even when resulting injuries occur in a foreign country, provided that the negligent act or omission occurred elsewhere. Analogous case law dealing with the applicability of the foreign country exception to the high seas and Antarctica supports this conclusion.

a. Legislative History

In the years preceding adoption of the FTCA in 1946, many different alternatives were proposed to structure the precise language contained in Section 2680(k). In 1940, language was proposed which would have defined the geographical jurisdiction of the FTCA by a positive inclusion: "This act shall be applicable only to damages or injury occurring within the geographical limits of the United States, Alaska, Hawaii, Puerto Rico, and the Canal Zone." It is significant that this language or comparable language such as "the applicability of the FTCA is limited to claims arising in the United States or its territories," which limited the applicability of the FTCA to

271 Any waiver of sovereign immunity must be construed strictly by courts. Thomas v. Calavar Corp., 679 F.2d 416, 418 (5th Cir. 1982); See Builders Corp. of Am. v. United States, 320 F.2d 425, 426 (9th Cir. 1963). The United States Supreme Court has indicated repeatedly that suit may not be maintained against the United States in any case not clearly within the terms of the statute by which it consents to be sued. E.g., United States v. Michel, 282 U.S. 656, 659 (1930); Eastern Transp. Co. v. United States, 272 U.S. 675, 686 (1926). Additionally, it seems reasonable to conclude that government liability for outer space activities was not contemplated either at the time Congress enacted the FTCA in 1946, or during the 28 years of congressional drafting preceding enactment.

272 Hearings on S. 2690 Before a Subcomm. of the Senate Comm. on the Judiciary, 76th Cong., 3d Sess. 38 (1940).
a specific geographic area, was never accepted. Congress instead simply made an exception in the case of "foreign countries." Since Congress apparently did not intend FTCA application to be limited to specific geographic areas or regions, an extension to activities in outer space would not, per se, be prohibited.

b. Case Law Interpreting the Intent of Section 2680(k)

Case law interpreting Section 2680(k) reveals the actual parameters of the exception. The courts have interpreted the foreign country exception to apply to torts arising solely in territory where permanent sovereignty ultimately lies with another nation. Underlying this "sovereignty test," however, is a determination by the courts on whether foreign law governs the tort in question. If United States law is applicable, then the "foreign country" exception is abrogated by the courts regardless of the fact that the actual injury occurred in a foreign country.

*United States v. Spelar,* a 1949 United States Supreme Court case, is the only decision by that Court addressing the term "foreign country." *Spelar* concluded that the term denoted territory subject to the sovereignty of another nation. *Spelar* involved a suit for wrongful death arising out of the death of a flight engineer at a United States air base in Newfoundland, leased for ninety-nine years by the United States from Great Britain pursuant to executive agreement. The Supreme Court determined that even though the accident occurred on a United States air base, the negligent acts nevertheless arose in a foreign country. The Supreme Court noted that the law which would have governed the case if the FTCA applied would

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275 See infra notes 276-330 and accompanying text.
277 Id. at 219.
278 Id. at 218.
279 Id. at 219-21.
have been the wrongful death law of Newfoundland.\textsuperscript{280} The Court stated that the FTCA was geared to the sovereignty of the United States, and that the executive agreement between the United States and Great Britain for the leasing of the military bases did not effect a transfer of sovereignty over the leased areas from Great Britain to the United States.\textsuperscript{281} Analyzing the legislative history behind Section 2680(k), the Supreme Court concluded that Congress enacted this section to ensure that United States tort liability does not depend upon the law of a foreign power.\textsuperscript{282}

Subsequent lower court decisions examining this exception assert that even a temporary transfer of sovereignty over property to the United States is not sufficient to abrogate "foreign country" status.\textsuperscript{283} In \textit{Burna v. United States},\textsuperscript{284} the court found that after World War II, Okinawa was a foreign country for FTCA purposes despite the fact that the United States, pursuant to a treaty with Japan, had the right to exercise any and all powers of administration, legislation and jurisdiction.\textsuperscript{285} Finding that the treaty was simply a transitional arrangement, the court determined that the ability of the United States to exercise sovereignty was not "a conclusive factor."\textsuperscript{286} \textit{Cobb v. United States}\textsuperscript{287} is a similar case which, like \textit{Burna}, arose out of a vehicle accident on the Island of Okinawa.\textsuperscript{288} A close

\textsuperscript{280} Id. at 218.
\textsuperscript{281} Id. at 221-22.
\textsuperscript{282} Id. The Court stated:

In brief, though Congress was ready to lay aside a great portion of the sovereign's ancient and unquestioned immunity from suit, it was unwilling to subject the United States to liabilities depending upon the laws of a foreign power. The legislation must be respected. The present suit, premised entirely upon Newfoundland's law, may not be asserted against the United States in contravention of that will.

\textit{Id.}


\textsuperscript{284} 240 F.2d 720 (4th Cir. 1957).

\textsuperscript{285} Id. at 721.

\textsuperscript{286} Id. at 722.

\textsuperscript{287} 191 F.2d 604 (9th Cir. 1951).

\textsuperscript{288} Id. at 605.
reading of these two cases indicates that the key to the decisions is the application of foreign law, not just sovereignty.

Under the FTCA, liability must be determined under the law of the jurisdiction in which the tort occurs. During the United States occupation of Okinawa after World War II, the United States had complete control over Okinawa. While the United States had the power to annul all the existing tort law of Okinawa, it does not appear that it did so. The United States did not take this step because such a change would have been in disregard of the legitimate interests of the inhabitants, and would have violated the "dictates of public conscience" as well as "the spirit, if not the letter, of Art. 43 of the Hague Convention of 1907." Therefore, in both Burna and Cobb, even though the United States for all practical purposes had complete but temporary sovereignty over this territory, the application of the FTCA would depend upon Japanese law. This appears to be the real reason for invoking the "foreign country" exception in these cases. In fact, the courts consistently have held that torts occurring solely within American installations on foreign soil are barred by the foreign country exception, even when practically all vestiges of sovereignty are transferred to the United States. It is significant that embassies and military bases in foreign countries often operate under agreement to apply the foreign country's laws to claims arising there. In this sense, the sovereignty test does not necessarily relate to the territory involved, but to the tort

290 Cobb, 191 F.2d at 606.
291 Id. at 609-10.
292 Id. at 611.
293 This article dictates that an occupying power should undertake, as far as possible, not to disturb the laws in force in the occupied country. See generally Schwenk, Legislative Power of the Military Occupant Under Article 43, Hague Regulations, 54 YALE L.J. 393, 393-408 (1945).
itself. And while the courts couch their language in terms of sovereignty, the "sovereignty test" created by the courts ultimately is based upon whether foreign laws are applicable to torts occurring outside United States territory.

This conclusion is supported further by a line of cases holding the foreign country exception inapplicable even though the injuries or the accident occurred in a foreign country.295 These cases interpret the "arising in" language296 of the FTCA as directing courts to look to the place where the act or omission took place in determining the applicable law, not where the actual injury or accident occurred.297 These decisions hold the foreign country exception inapplicable even though the accident or injury occurred in a foreign country.298 Again, the key to these decisions appears to be a determination of whether United States law or foreign law governs the resolution of the case.299 This body of cases illustrates that an FTCA claim may arise in the United States, because the negligent act or omission occurred in the United States, even though the act or omission had its "operative effect" in a foreign country that is, the injury actually occurred in a foreign country.300

This conclusion finds further support in aviation cases occurring in a foreign country. In In re Paris Air Crash of March 3, 1974,301 the court held that if the negligent acts at issue occurred in the United States, but the operative effect — in this case an airplane crash — occurred in a foreign country, the foreign country exclusion does not apply.302 This case arose out of the crash of a Turkish Air Lines DC-10 aircraft in France that claimed the lives of

295 See infra notes 299-300 for a list of some of these cases.
297 See infra notes 299-300 for examples of such cases.
298 See infra notes 299-300 for examples of such cases.
300 Leaf v. United States, 588 F.2d 733, 735-36 (9th Cir. 1978); In re Paris Air Crash of March 3, 1974, 399 F. Supp. 732, 737 (C.D. Cal. 1975).
302 Id. at 737-38.
346 people.\footnote{Id. at 735.} The claims against the United States were based upon the allegedly negligent certification or inspection of the aircraft by the Federal Aviation Administration.\footnote{Id. at 737.} Plaintiffs asserted that these acts of negligence occurred in California.\footnote{Id.} In ruling against the United States on this issue, the district court stated:

Under the FTCA, a tort claim arises at the place where the negligent act or omission occurred and not where the negligence had its “operative effect”. . . . Thus, none of the claims against the United States for death, as alleged in the complaints, is a “claim arising in a foreign country.”\footnote{Id.}

These “operative effect” cases relate not so much to the definition of “foreign country,” but to the meaning of “arising in.” They demonstrate that “arising in” does not necessarily refer to the situs of the injury, but that it may refer to the situs of the negligence.

Proper pleading is necessary in order for this exception to the exception to take effect and survive summary judgment motions by the government. In \textit{Pignataro v. United States},\footnote{Id.} the plaintiff, a minor, was a passenger on a flight from Saudi Arabia to Eritrea aboard an unpressurized airplane owned by the United States and operated by the Air Force.\footnote{Id. at 152.} The plaintiff sustained permanent loss of hearing and speech when the aircraft allegedly was flown negligently at an altitude far in excess of the reasonably safe limits for unpressurized aircraft.\footnote{Id.} The court in \textit{Pignataro} dismissed the claim under the FTCA on the ground that it failed to set forth the local law upon which the claim was grounded and that if such law was the law of a foreign country, the claim was barred by section 2680(k).\footnote{Id. at 152-53.} The court stated that the test for determining whether a claim
was excluded by section 2680(k) was whether the place in which the claim arose was territory subject to the sovereignty of another nation and whether the liability asserted was one depending upon the laws of a foreign power. The court noted that the complaint did not state where the alleged negligent act occurred and that every nation had the authority to exercise sovereignty over acts occurring in its own territorial airspace. The court concluded that if the Government’s alleged tortious act occurred over some foreign country, the claim was one “arising in a foreign country” and was barred by section 2680(k). The court might have reached a different result if the allegations contained in the pleadings had been drafted differently to allege that this crash was due to improper training of the crew or failure to adequately warn the crew of the dangers of flying this aircraft above certain altitudes, and that the acts or omissions which proximately caused this injury took place in the United States. Such careful pleading might have enabled the plaintiff in Pignataro to survive the Government’s motion for summary judgment.

From the foregoing analysis, it is clear that determination of whether the foreign country exception applies revolves around substantive jurisdiction over the cause of action: is the cause of action subject to United States law or the law of another country? Since liability is to be determined pursuant to the law where the tort arises, an action arising solely in a foreign country is barred under the foreign country exception. Consequently, should injury or damage caused by United States government personnel arise solely in foreign territory or on a non-United States registered space object that is subject to foreign law, then it is possible that this exception will be applicable to bar suit under the FTCA. Suit still may be possible, however, in the unlikely event of underlying negligence

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311 Id. at 152.
312 Id.
313 Id.
by the United States occurring outside of the foreign country or foreign space object. Additionally, this reasoning supports the general proposition that the foreign country exception will not be a valid defense for the United States when suit is brought pursuant to the FTCA for liability arising out of government activities in outer space, even when injuries result in a foreign country.

Outer space, the moon and other celestial bodies have been declared "sovereignless." Section 1346 of the FTCA directs courts to apply the law of the place where the act or omission occurred. It may be argued by government attorneys that, if the act or omission giving rise to the tort occurred in outer space, section 1346 would leave a court in the curious position of having no body of civil law to apply. This would be directly opposite to the foreign country exception. At least for the immediate future, however, the interpretation of "arises in" as referring to where the act or omission took place means that United States law will apply to a great majority of the situations involving alleged negligence of the United States government. This is true because, at the level of space development which exists today, practically all outer space activities can be attributed in some way to ground-based causes. As one observer notes:

Any number of ground-based causes can be conceivable ranging from faulty surface control and telemetry, improper construction or maintenance of space transportation systems, negligent design of space stations and facilities, and so on. In point of fact, it may be argued that almost every operation in outer space is traceable to or linked with ground-based functions.\(^\text{315}\)

Furthermore, with regard to United States registered space objects or personnel thereof, Article VIII of the Outer Space Treaty provides that the United States shall "retain jurisdiction over such space objects, and over any personnel thereof, while in outer space or on a celestial

\(^{314}\) OST, supra note 24.  
\(^{315}\) Nsgos, supra note 104.
Thus an accident/injury occurring on a space object registered to the United States would automatically be under the jurisdiction of the United States, which would logically mean that United States law would apply. Determination of which United States jurisdiction's substantive law applies would involve a traditional choice of laws analysis by the forum court.

Furthermore, "sovereignless" areas, areas in which claims of sovereignty are not recognized by international agreement, are not "foreign countries" under section 2680(k) and United States law has been held applicable to torts arising in such areas. Cases arising on the high seas or in international airspace above the seas illustrate this point. In Blumenthal v. United States, an action was brought in admiralty under the Death on the High Seas Act, alleging negligence on behalf of the United States for wrongful death of the decedent who died after bailing out of a disabled military plane over international waters between Korea and Japan.

The court held that an action for death resulting from an aircraft accident over international waters was a maritime tort under DOHSA and not a tort arising in a foreign country, and that United States law was applicable. In this case, the United States did not have sovereignty over the territory, but sovereignty over the tort itself. Thousands of torts arise in sovereignless territories and application of United States law over these cases is common. There is no reason why United States law could not apply under similar circumstances to torts arising in outer space, another sovereignless territory.

The only outer space related situations where FTCA

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316 OST, supra note 24, at Article VIII.
317 See infra notes 318-321 for cases supporting this proposition.
320 189 F. Supp. at 442.
321 Id. at 445-46.
claims should be barred pursuant to the foreign country exception are cases in which the negligence arises solely aboard a space object subject to a foreign law, such as a foreign-registered space object.\footnote{\textsuperscript{322} Under Articles VII & VIII of the Outer Space Treaty, State parties have agreed to retain jurisdiction over their space objects. It is probable that foreign law thus will be applicable to torts occurring aboard such foreign registered objects. OST, supra note 24, at Articles VII-VIII.} Of course, if space colonies are formed with sufficient attenuation from Earth to be autonomous and have independent laws, torts arising in such colonies also may be barred by the foreign country exception.

c. The Antarctica Analogy

The most persuasive authority for the proposition that torts occurring in outer space will not be barred by the foreign country exception is the recent court of appeals decision of \textit{Beattie v. United States}.\footnote{\textsuperscript{323} 756 F.2d 91 (D.C. Cir. 1984).} \textit{Beattie} involved an FTCA action alleging that negligent United States Navy personnel on duty at air traffic control facilities in Antarctica caused the crash of an Air New Zealand DC-10 on that continent.\footnote{\textsuperscript{324} Id. at 92-93.} The Government moved to dismiss, asserting that the plaintiffs had failed to state a cause of action upon which relief could be granted because the tort occurred in Antarctica and, thus, the foreign country exception applied.\footnote{\textsuperscript{325} Id. at 93.} In denying the Government's motion to dismiss and affirming the district court, the court of appeals addressed the novel issue of whether Antarctica constitutes a foreign country under section 2680(k). The court held that an action arising in Antarctica is \textit{not} barred by the foreign country exception.\footnote{\textsuperscript{326} Id. at 93-94.}

This decision is indicative of the interpretation to be given the foreign country exception to torts occurring in outer space. This interpretation results from the unique similarities in the legal status between Antarctica and...
outer space which have permitted\textsuperscript{327} and will permit courts and legal scholars to analogize between the two regions.

The Beattie court, in dicta, appears to take for granted the proposition that a tort occurring in outer space would not be barred by the foreign country exception.\textsuperscript{328} In fact, the court uses this proposition by analogy to support its conclusion that the foreign country exception should not apply to Antarctica.\textsuperscript{329} The court states:

The legal status of Antarctica has been most frequently analogized to outer space. United States spokesmen suggested the 1959 Antarctic Treaty as a possible model for an outer space treaty during initial formulation discussions in 1965 and 1966. Obviously, the provisions of a treaty relating to outer space are only relevant to the present case by analogy. However, they are instructive as to the way in which the United States has acted with reference to sovereign immunity and liability for acts of its agents in a context very similar to Antarctica.

The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies [the Space Treaty], was signed at Washington, London, and Moscow on 27 January 1967, and entered into force on 10 October 1967. By the terms of the treaty the United States has agreed to be internationally liable for its space objects and retain jurisdiction over its own objects and persons. . . . The Space Treaty is obviously not couched in terms of tort claims. However, the basic principle is that in the sovereignless reaches of outer space, each state party to the treaty will retain jurisdiction over its own objects and persons. Like the decisions . . . holding that Antarctica is not a "foreign country" for various purposes, the treatment of outer space is persuasive by analogy.\textsuperscript{330}


\textsuperscript{328} See Beattie, 756 F.2d at 99-100.

\textsuperscript{329} Id.

\textsuperscript{330} Id. (emphasis added) (footnotes omitted).
The foregoing analysis indicates that the foreign country exception should not bar otherwise actionable claims against the United States pursuant to the FTCA or SIAA and DOHSA for torts resulting from activities in outer space, the high seas or United States territory, even if injury or damage occurs in a foreign country.

IV. LIABILITY UNDER THE FEDERAL TORT CLAIMS ACT — PROCEDURAL PROVISIONS

Suits against the United States for negligence under the FTCA may be brought in the federal "judicial district where the plaintiff resides or wherein the act or omission complained of occurred." The United States of America is the only proper party to be sued under the FTCA, not specific agencies or departments. The FTCA requires, however, that a claim first be presented to the "appropriate Federal agency" before suit can be properly instituted in federal district court. Suit can be instituted only after the administrative claim has been rejected in writing and sent by certified or registered mail. While it is foreseeable that one may not be able to determine the "appropriate Federal agency," failure to do so appears to place the burden on the receiving agency to transfer the claim to the appropriate agency. If more than one federal agency is involved though, it is advisable to file notice with that agency also. If the agency fails to dispose of the claim within six months after filing, the claimant may at any time thereafter consider the claim denied and bring an FTCA claim against the United States in federal district court. If the agency formally denies the claim in writing within the six month period, however, the claimant must file suit in federal district court within

524 Id.
526 Kennelly, Claims and Suits for Aviation Accidents Under the Federal Tort Claims Act, 1972 TRIAL LAW. GUIDE 1, 36 [hereinafter cited as Kennelly].
six months after such written denial. While these notice provisions were intended to streamline litigation against the government, "the opposite has occurred."

With respect to preparation and service of the prerequisite notice, one commentator suggests that claimant's counsel obtain the standard government form provided for filing the claim. This form ("Standard Form 95") can be obtained from any United States Post Office, United States Attorney, general counsel of most government agencies, or by writing directly to the federal agency whose agent committed the tort. Use of Standard Form 95 is not mandatory, but any notice must contain the information required. The claim should identify the incident and all parties, and state the damages claimed in sum certain. Failure to completely identify the incident al-

338 Chapman, Preface to Tompkins, Litigation of an Airplane Hull Suit Against the United States of America, 1983 TRIAL LAW. GUIDE 329, 338. Professor Chapman states:

The "new" provisions of the Federal Tort Claims Act, which require Notices of Claims before filing suit, were designed to diminish the burden cast upon federal judges in regard to valid tort claims against the federal government. Congress wanted to supply the federal government with a method of ascertaining the merits of claims before litigation ensued, in order to give the government an opportunity to review and pay legitimate claims. The opposite has occurred. The federal government routinely denies all substantial claims against it, especially where it is the sole defendant. This has resulted in an unnecessary bureaucracy (in regard to presuit claims under the Federal Tort Claims Act) and the unwarranted mandatory prevention of the filing of legitimate suits for at least six months. It is difficult to understand why plaintiffs who have valid claims must wait at least six months simply to permit the bureaucratic processes of the federal government to file a lot of papers since it is well recognized that: (1) the government almost never even responds to a Notice of Claim within six months, and (2) if the federal government finally does respond, it universally sends a routine form letter, which always uses identical words in denying the claims, however meritorious they might be.

Id.

340 For a complete list of the specific requirements, see 28 C.F.R. §§ 14.1-.11 (1985).
342 See id.
most certainly will result in return of the claim for more specifics. Failure to demand specific damages is an even more serious defect.343

No limit exists as to the amount of the administrative claim. However, a claimant may not subsequently file a claim in federal court in excess of the amount presented to the federal agency, "except where the increased amount is based upon newly discovered evidence not reasonably discoverable at the time of presenting the claim to the federal agency or upon allegation and proof of intervening facts, relating to the amount of the claim."344 Any written reduction of the claim will be construed as an amended administrative claim, which will later reduce any maximum recoverable amounts at trial.345

It is important to note that most federal courts have held that the notice of claim requirement is jurisdictional and cannot be waived.346 It also should be noted that this administrative notice filing tolls the applicable two-year statute of limitations, not the filing of suit in federal district court.347 FTCA section 2401(b) provides in relevant part: "A tort claim against the United States shall be forever barred unless it is presented in writing to the appropriate Federal agency within two years after such claim accrues . . . ."348 In United States v. Kubrick,349 the United States Supreme Court held that a claim occurs when the claimant learns the existence and cause of the injury, and not when he subsequently learns that there may have been negligence involved.350 This statute of limitations

346 Hubbard v. United States Parole Comm’n, 585 F.2d 857, 859 (7th Cir. 1978); Blain v. United States, 552 F.2d 289, 291 (9th Cir. 1977); Allen v. United States, 517 F.2d 1328, 1329 (6th Cir. 1975).
348 Id.
350 Id. at 135-36.
has been construed strictly by the courts, and, unlike many other statutes of limitations, contains no "savings" or tolling provisions. The rationale for this strict construction is set forth in Simon v. United States:

"[A] statute which in itself creates a new liability, gives an action to enforce it unknown to the common law, and fixes the time within which that action may be commenced, is not a statute of limitations. It is a statute of creation, and the commencement of the action within the time it fixes is an indispensable condition of the liability and of the action which it permits. . . . Such a provision is in other words jurisdictional rather than a mere statute of limitations."

Consequently the statute is not tolled during a plaintiff's minority or other disability, and is effective to bar counterclaims against the government.

The effects of reading the notice and statute of limitations together have been characterized justifiably as "pitfalls for the practitioner." The effect of these provisions actually appears to shorten the applicable statute of limitations period in certain situations. For example, if a claim is presented two or three weeks after an accident and denied five months thereafter, it appears that the claimants must then file suit within six months after the denial or be forever barred. This is less than a year after the tort occurred!

Under the Federal Rules of Civil Procedure, a plaintiff may join different parties as defendants in the same lawsuit "if there is asserted against them jointly, severally, or in the alternative, any right to relief in respect of or arising out of the same transaction, occurrence or series of

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351 See infra notes 354-356 and accompanying text.
352 244 F.2d 703, 704-05 (5th Cir. 1957).
353 Id. (emphasis omitted) (quoting 34 AM. JUR. LIMITATION OF ACTIONS § 7 (1941)).
355 Tinkoff v. United States, 211 F.2d 890, 891 (7th Cir. 1954).
356 Id. at 892.
transactions or occurrences and if any question of law or fact common to defendants will arise in the action.

Under this rule, a plaintiff may elect to join other defendants in the action against the United States. If the plaintiff elects not to sue the United States, but another defendant seeks contribution or indemnity from the federal government and the action is in federal court, the defendant may implead the United States by filing a third-party complaint. No administrative claim is required to implead the United States, or to file cross-claims or counter-claims. This right to implead the United States as a third-party defendant, however, does not necessarily permit a plaintiff who has not complied with the administrative claim requirements to assert a direct action against the United States. The FTCA vests the federal courts with jurisdiction over third-party claims, cross-claims and counterclaims, but may not excuse the prerequisite administrative procedure in the case of direct claims.

When multiple defendants not including the United States are sued, and federal jurisdiction is lacking, the lawsuit must be filed in state court. If one or more defendants desire to pursue a third-party claim against the United States for contribution or indemnity, the defendant may be required to institute separate proceedings in federal court. This stems from the fact that the United States may be sued only in federal court under the FTCA,


Id.; L. Jayson, Handling Federal Tort Claims § 3.06 (Supp. 1977).


and impleading the United States in state court will not provide the required removal jurisdiction over the main action if no independent basis for federal jurisdiction exists. Under the FTCA scheme, of course, state law still governs the substantive decision on the merits of the indemnity or contribution claim.

A. Filing the Administrative Claim — NASA

In filing the administrative claim and attempting to negotiate a settlement at the administrative level, certain regulations promulgated by the particular federal agency involved become significant. NASA, the obvious target agency for outer space related accidents, stands as no exception. Of course, claims against the United States arising out of NASA functions must be submitted to NASA in writing within two years after the accident or incident in order to meet the FTCA notice of claim prerequisites discussed above.

The specific NASA regulations governing claims against NASA or its employees for personal injuries or property damage provide a dual redress procedure: a special administrative procedure and a claims procedure pursuant to the FTCA. Either procedure apparently will activate the six-month administrative notice prerequisite to suit under the FTCA. Claimants should submit NASA-related claims arising in the United States to the chief counsel of the NASA installation believed responsible for the

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363 Morris v. United States, 521 F.2d 872 (9th Cir. 1975); Ayala v. United States 550 F.2d 1196 (9th Cir. 1977).
365 This section of text will set forth the NASA administration claim procedure as an example. Specific agency regulations, however, must be consulted when instituting any administrative claim. L. Jayson, Handling Federal Tort Claims app. 40 (Supp. 1985), contains specific agency regulations identifying individuals who possess authority to adjudicate claims. The agency regulations usually identify the limits that can be settled by various officials. See id.
366 See supra notes 333-356 and accompanying text.
368 See supra notes 333-356 for a complete discussion of the administrative notice prerequisite.
claimed injury, loss or death. If there is doubt as to where the claim should be filed, or if the claim arose in a foreign country, the claim should be submitted to NASA's General Counsel in Washington, D.C. A claim will be deemed presented to NASA, for purposes of tolling the statute of limitations and satisfying the administrative notice prerequisite under the FTCA, when NASA receives written notification of the incident or accident, accompanied by a claim for a sum certain. It does not appear that NASA will act on the claim, however, until the agency receives a completed Standard Form 95. NASA installations will furnish copies of Standard Form 95 upon request. NASA regulations provide that NASA's General Counsel will act upon claims in amounts of $10,000 or more. Claims for amounts less than $10,000 will be handled by the chief counsel of the field installation in question or the Assistant General Counsel for Litigation for NASA Headquarters.

The claims procedure outlined in the NASA regulations authorizes the NASA Administrator to "consider, ascertain, adjust, determine, compromise, and settle any claim for money damages against the United States for injury or loss of property or personal injury or death" brought under the FTCA. In exercising this authority, the Administrator must act in accordance with regulations prescribed by the Attorney General of the United States. If a proposed settlement or award exceeds $5,000, NASA General Counsel must review the award or settlement.

372 Id.
373 Id. at § 1261.307(c).
374 Id. § 1261.305(a). Standard Form 95 is the standard administrative notice form used for compliance with the administrative notice prerequisite under the FTCA. See supra notes 339-343 for a discussion on the advisability of filing this standard form, even when not technically required.
375 14 C.F.R. § 1261.305(b) (1985).
376 Id. at § 1261.308(a).
377 Id. at § 1261.308(b).
378 Id. at § 1261.301(a).
379 Id.
Any award or settlement in excess of $25,000 must have the prior written approval of the Attorney General of the United States or his designee.\(^{381}\) As a practical matter, therefore, most substantial claims under the FTCA involving NASA will require consultation with the United States Department of Justice before a settlement or award may be reached.\(^{382}\) It is important to note that the FTCA parameters of legal liability apply to this claims procedure.\(^{383}\)

Under the special administrative procedure outlined in the NASA regulations, NASA also has authority under "42 U.S.C. Section 2473(c)(13)(A)... to consider, ascertain, adjust, determine, settle, and pay, on behalf of the United States, in full satisfaction thereof, any claim for $25,000 or less against the United States for [injuries to persons or property] resulting from the conduct of NASA's functions..."\(^{384}\) Under this procedure, and at its discretion, NASA may settle a claim "even though the United States could not be held legally liable to the claimant."\(^{385}\) In contrast to the claims procedure, therefore, the administrative procedure may allow a plaintiff to recover on a claim for less than $25,000, without meeting the burdens imposed under the FTCA.\(^{386}\)

Generally, a claim in excess of $25,000 must comply with the requirements of the FTCA. If the NASA Administrator considers a claim in excess of $25,000 meritorious, however, NASA may reduce the harshness of the FTCA by submitting the claim to Congress for its consideration.\(^{387}\) Any claim submitted to Congress, though, almost certainly will not become operational before exhaustion of all other administrative and judicial

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\(^{381}\) Id. at § 14.6.
\(^{382}\) See id.
\(^{383}\) See 14 C.F.R. § 1261.301(b) (1985).
\(^{384}\) Id.
\(^{385}\) Id. (emphasis added).
\(^{386}\) The plaintiff might be allowed recovery, for example, even if one of the FTCA exceptions listed in 28 U.S.C. § 2680 (1982) might otherwise bar recovery.
\(^{387}\) 14 C.F.R. § 1261.301(c).
remedies.\textsuperscript{388}

No provisions exist to prevent a claimant from seeking redress under both the administrative and claims procedures. Many commentators state that the claimant may select either the special administrative procedure or the claims procedure, but that failure to designate the statute under which the claimant is submitting the claim will allow NASA the choice to treat the matter under either procedure.\textsuperscript{389} NASA regulations simply state that claims shall be acted upon pursuant to either the FTCA or the NASA special administrative procedure "as the NASA official deems appropriate."\textsuperscript{390}

The special administrative procedure is significant to claimants seeking less than $25,000 in that NASA may, in its discretion, award or settle the claim regardless of whether the claim meets all of the jurisdictional requirements and is actionable under the FTCA.\textsuperscript{391} This procedure has been characterized as "quite expedient."\textsuperscript{392} However, the relatively low ceiling on amounts recoverable under this administrative procedure will not afford most claimants an adequate remedy in the case of a catastrophic accident involving NASA activities. An administrative settlement also precludes further liability under the FTCA since acceptance by a claimant of any "award, compromise, or settlement" on behalf of any federal agency constitutes "a complete release of any claim against the United States."\textsuperscript{393}

If all administrative and judicial remedies prove futile, a claimant seeking redress against the United States for in-
juries resulting from outer space activities may pursue the final recourse option of a private bill before Congress. Congress has unlimited power to provide compensatory relief; however, actual congressional appropriation would be unlikely.

V. CONCLUSION

While the United States has consented to liability for torts "in the same manner and to the same extent as a private individual under like circumstances," the enormous advantages the United States enjoys through various limitations on consent to suit have made this impossible. Specific substantive and procedural exceptions, barriers and loopholes confine actionable torts to certain narrowly-defined situations. While administrative claims have potential for expeditious processing, and certain administrative claims (such as the NASA special administrative claim) proceed unencumbered by FTCA limitations, it appears that any expeditious recovery will be limited to cases involving relatively low amounts of $25,000 or less. In cases involving more than $25,000, which probably would include a substantial majority of any claims arising from outer space activities, the federal government has shielded itself from liability in a number of ways.

Unlike many state laws governing claims against private defendants, the FTCA precludes claims against the government based upon strict or absolute liability. This leads to a bifurcated approach to federal tort liability. United States domestic law under the FTCA differs from international law which affords claimants the benefit of absolute liability for damages or injuries suffered by unrelated third parties in the air or on the surface of the Earth. This disparity can lead to absurd or unjust results. In injuries arising out of the same occurrence, foreign claimants may

394 Id. at § 2674.
395 See supra notes 384-387 and accompanying text.
396 See supra notes 386-388 and accompanying text.
be able to recover damages against the United States under international law, while United States citizens suffering injuries in the United States may be precluded because of their inability to plead and prove negligence.397

Furthermore, specific FTCA exceptions or sharply-defined and strictly-construed jurisdictional parameters may bar FTCA recovery by innocent victims injured or killed in the same occurrence, simply because of their status as military personnel or federal employees,398 or because of failure to file an administrative claim which succumbs to routine denial in most cases anyway.399 These obstacles to fair redress prejudice not only claimants, but also may lead to inequitable treatment of other defendants. Even if the United States government’s actions proximately cause injuries, the myriad of liability exceptions and limitations make it possible that other joint tortfeasors, such as manufacturers or contractors, because of joint and several liability, may be forced to pay full damages to plaintiffs, regardless of the joint tortfeasor’s actual percentage of relative fault or culpability.

The United States government thus enjoys protection on all sides. Users of NASA space vehicles and other government owned or sponsored space equipment come mostly from military or federal employee ranks. FTCA limitations typically bar these individuals from suing the United States.400 The federal government also stands insulated in most cases from claims by manufacturers and contractors held liable to military servicemen due to defective equipment, even though the facts demonstrate negligence on the part of the United States as well.401 The Supreme Court reasoned in Stencel Aero Engineering Corp. v. United States402 that FTCA-based indemnity would

397 See supra notes 91-96 and accompanying text.
398 See supra notes 140-155 and accompanying text.
399 See supra notes 333-337 and accompanying text.
400 See Feres v. United States, 340 U.S. 135, 140-46 (1950); see supra notes 138-147 and accompanying text.
401 See infra notes 402-406 and accompanying text.
subject the government to varying degrees of liability, depending upon the situs of the accident. Such indemnity also would require the United States to pay indirectly to servicemen what the ceiling limits in the Veterans' Benefits Act forbid the government to pay directly, and would interfere with military discipline. Stencel reaffirms traditional governmental insulation from FTCA liability to a serviceman who makes a claim directly against the federal government, and also expands this protection to third party indemnity claims against the federal government, despite clear proof of negligence on the part of the federal government. Decisions like Stencel highlight the reality that the United States is, in fact, not treated as a "private individual under like circumstances," despite the explicit assertion to the contrary in the language of the FTCA.

This broad governmental immunity also has spilled into

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403 Id. at 672.
405 Stencel, 431 U.S. at 672-73.
406 28 U.S.C. § 2674 (1982). It should be noted that the United States Supreme Court recently approved, for the first time, a third-party action against the United States following injury to a civilian employee of the federal government. In Lockheed Aircraft Corp. v. United States, 460 U.S. 190 (1983), a civilian employee of the United States Navy died in the crash of an aircraft operated by the United States Air Force and manufactured by Lockheed. Id. at 191. The United States paid death benefits to the employee's survivors under the Federal Employees' Compensation Act (FECA). Id. See generally 5 U.S.C. §§ 8101-93 (1982). The employee's administrator filed suit against Lockheed in federal district court, seeking damages for the employee's wrongful death and for injuries suffered prior to her death. Lockheed, 460 U.S. at 191-92. Lockheed filed a third-party action against the United States, claiming a right to indemnification under the FTCA. Id. at 192.

Lockheed settled the claim of the administrator and moved for summary judgment in the third-party action. Id. The Government moved to dismiss on the ground that the exclusive liability provision of FECA barred the third-party action. Id. The FECA exclusive liability provision states:

The liability of the United States . . . under [FECA] with respect to the injury or death of an employee is exclusive and instead of all other liability of the United States . . . to the employee, his legal representative, spouse, dependents, next of kin, and any other person otherwise entitled to recover damages from the United States . . . because of the injury or death . . . .

5 U.S.C. § 8116(c).

The Supreme Court held that the exclusive liability provision of the FECA did
the private sector. Private manufacturers have benefited enormously by the wide shield of immunity enjoyed by the government under the government contractor defense.\textsuperscript{407} The government contractor defense is a judicially-created concept which, in certain instances, provides immunity for design defects when the contractor performs the work according to government specifications.\textsuperscript{408} This defense is being asserted with increasing frequency in product liability actions filed against government contractors for the death of servicemen.

In \textit{McKay v. Rockwell International Corp.},\textsuperscript{409} the widows of two Navy pilots killed in two unrelated crashes of RA-5C naval aircraft filed wrongful death actions against the manufacturer of the aircraft and its ejection system.\textsuperscript{410} The court held that a supplier of military equipment is not subject to strict liability to an injured serviceman or his heirs, if the United States government set specifications for the equipment in question or approved a manufacturer's reasonably precise specifications.\textsuperscript{411} The court reasoned that subjecting government suppliers to strict liability might undermine the FTCA statutory scheme by shifting to the government the cost of judgments against

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not \textit{directly} bar a third-party indemnity action against the United States. \textit{Lockheed}, 460 U.S. at 199.

The \textit{Lockheed} decision could have considerable practical ramifications in a products liability suit against manufacturers arising from an outer space related accident involving an injured or deceased civilian employee or other third parties. Under the FTCA mandate for application of the substantive law of the situs state, manufacturers in such cases may recover all or part of their payments to plaintiffs through application of state contribution or indemnity laws. However, it must be emphasized that the \textit{Lockheed} holding is limited, stating that FECA's exclusivity provision does not \textit{directly} bar a third-party indemnity (or contribution) action against the United States. \textit{See id.} Applicable state law may continue to indirectly bar efforts of manufacturers seeking indemnity from the United States. State indemnity and contribution laws vary widely from state to state. \textit{See generally, Note, Lockheed Aircraft Corp. v. United States: Its Impact on Indemnity Actions Against the Federal Government in Asbestos Exposure Cases, 19 Forum 489, 495-99 (1984).}

\textsuperscript{407} \textit{See infra} notes 408-422.

\textsuperscript{408} \textit{See McKay v. Rockwell Int'l Corp., 704 F.2d 444, 448-49 (9th Cir. 1983), cert. denied, 464 U.S. 1043 (1985).}

\textsuperscript{409} 704 F.2d 444 (9th Cir. 1983), cert. denied, 464 U.S. 1043 (1985).

\textsuperscript{410} \textit{Id.} at 446.

\textsuperscript{411} \textit{Id.} at 451.
manufacturers through cost overruns, contract prices reflecting the cost of liability insurance or higher prices in later equipment sales.\textsuperscript{412} Holding military suppliers liable for federally approved designs also would raise separation of powers problems by interjecting the judiciary into military decision-making.\textsuperscript{413} A third rationale underlying the court's decision is that military production necessarily requires manufacturers to push technology toward its limits, thereby incurring risks beyond those which would be acceptable for ordinary consumer goods.\textsuperscript{414} The court also suggested that immunity from strict liability for government-specified-or-approved designs would motivate military suppliers to work closely and consult with military authorities in developing and testing equipment.\textsuperscript{415} Finally, the policy considerations underlying strict liability - enterprise liability, market deterrence, compensation and implied representation of safety - do not apply to military equipment.\textsuperscript{416}

It is important to note, however, that significant limitations may exist on the extent to which the government contractor defense affords immunity to private defendants, even under the reasoning in \textit{McKay}. First, the \textit{McKay} court consistently refers to "military equipment."\textsuperscript{417} This raises questions about whether equipment and products contracted for by the government for outer space activities will be considered "military equipment" if this equipment is used by civilian agencies of the federal government or if this equipment serves a dual civilian/military role.\textsuperscript{418} Second, it should be emphasized that

\textsuperscript{412} \textit{Id.} at 449.
\textsuperscript{413} \textit{See id.}
\textsuperscript{414} \textit{See id.} at 449-50.
\textsuperscript{415} \textit{See id.} at 450.
\textsuperscript{416} \textit{See id.} at 451-53.
\textsuperscript{417} \textit{See id.} at 448-53.
\textsuperscript{418} It will be interesting to see what effect the recent Supreme Court decision in \textit{Lockheed}, discussed supra note 406, may have on the government contractor defense in suits instituted by civilians who may be injured or killed by a military product which fails due to a design defect. \textit{McKay} involved claims by families of servicemen, not civilians. \textit{McKay}, 704 F.2d at 446. It also will be interesting to moni-
the government contractor defense applies to design defects, not manufacturing defects. The court explicitly stated, "the rule enunciated here does not relieve suppliers of military equipment of liability for defects in the manufacture of that equipment." Finally, the applicability of the government contractor defense is a matter of state law, not federal law, and some jurisdictions have flatly rejected the doctrine.

Government is involved either directly or indirectly in virtually every aspect of outer space activity. The practical effects of legal limitations on governmental liability and consent to suit, however, often shield the United States government from any tort liability connected with this involvement. This broad shield has been extended to the private sector in some cases. In most cases, though, the private sector will not enjoy comparable immunity and will be forced to pay disproportionate damages to injured third parties. In cases where sole culpability rests with the United States, but one of the FTCA exceptions shields the government from having to pay fair compensation, the innocent victim ultimately will suffer the loss (although the possibility of recovery from the United States may still exist for injured foreign nationals under the Liability Convention).

Despite judicial assertions that the FTCA should be construed to equate the liability of the United States to that which "a private individual" would have "under like circumstances," such constructions have been rare. And while the language of the FTCA plainly states, "[t]he

tor the success of attempts to extend the McKay holdings to claims by civilians injured due to dangerous defects in the design of military equipment.

419 See id. at 448-51.
420 Id. at 451.
421 See Brown v. Caterpillar Tractor Co., 696 F.2d 246, 249 (3d Cir. 1982).
422 See, e.g., Challoner v. Day and Zimmermann, Inc., 512 F.2d 77, 84 (5th Cir.), vacated on other grounds, 423 U.S. 3 (1975); Foster v. Day & Zimmermann, Inc., 502 F.2d 867, 869 (8th Cir. 1974).
United States shall be liable, respecting the provisions of this title relating to tort claims, in the same manner and to the same extent as a private individual under like circumstances. . . ," a thorough analysis of existing case law suggests a sometimes contrary reality. In summary, many of the FTCA protections the United States enjoys for its traditional terrestrial activities almost certainly will be extended to outer space related conduct as well. One can only hope that the new technology will stir Congress and the courts to reassess the often archaic reasoning which underlies many of these traditional liability limitations.

\footnote{28 U.S.C. § 2674 (1982).}
ADDENDUM

On January 28, 1986, several weeks after the main text of this article was submitted for publication, shock gripped the United States and the world as people everywhere watched or heard of the Space Shuttle Challenger tragedy. The Challenger accident, unparalleled in space exploration history, ultimately may raise some of the same questions addressed in the main text of this article. In keeping with the pioneering spirit for which the Challenger crew members sacrificed their lives, the author believes it appropriate to briefly explore some of the main issues which may arise as a result of this tragedy. Just as the deaths of these seven brave men and women will lead to a review and improvement of the present application of technology and procedures, it also will illustrate the legal inadequacies and injustices of the present compensation system in the United States for claims against the federal government and private contractors in connection with an outer space related accident. At present, the cause of the Shuttle disaster has not been determined. Consequently, this addendum seeks only to identify the main issues likely to arise and illustrate some of the inadequacies of the present legal system. Nowhere is blame or fault implied.

Any litigation brought in the United States involving multiple plaintiffs and multiple defendants, including manufacturers, component parts manufacturers and the United States government, can present difficult and sometimes insoluble legal problems. This stems largely from the fact that no uniform system of national legislation exists to preempt the myriad of contradictory laws and confusing precedents currently in force. In most complex tort litigation, multiple forums will be available—each containing different substantive law and choice of law rules. Consequently, initial battles between plaintiffs and defendants invariably will be procedural in nature, with

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425 Even the Federal Tort Claims Act, for example, requires resort to the substantive tort law of the place where the tortious conduct occurred. See supra note 84.
each combatant fighting for the forum and laws most favorable to his position. These preliminary battles typically involve questions concerning jurisdiction, conflict of laws and proper venue. Unfortunately, ultimate resolution of these issues is often difficult or impossible to predict, as well as time-consuming and expensive. After these initial issues common to most complex litigation are resolved, any legal analysis of this particular tragedy illustrates further inadequacies.

Since five of the seven crew members aboard the 
Challenger were either military servicemen or federal employees, the 
Feres doctrine or FECA, respectively, almost certainly would preclude any action against the United States government on behalf of the survivors or estates of these crewmen. Their remedies vis-à-vis the federal government probably will be limited to federal workmen's compensation-type statutes which provide relatively modest redress. FTCA actions against the federal government by the survivors or estates of the two privately-employed crewmen are allowed, but, in order to be successful, must overcome a number of barriers and other privileges afforded only to the United States when it is a defendant and not to other defendants. Some of these additional requirements include compliance with administrative notice requirements, regardless of actual notice; compliance with a prerequisite administrative claims procedure; and overcoming the limited jurisdictional parameters of the FTCA, including but not limited to the discretionary function exception, the suits in admiralty exception, and, perhaps, the foreign country exception.

426 See supra notes 103-116 and accompanying text (discussing choice of law and venue provisions applicable under the FTCA).
427 See supra notes 140-155 and accompanying text.
428 See supra notes 144,152-155 and accompanying text.
429 See supra notes 333-363 and accompanying text.
430 See supra notes 367-393 and accompanying text.
431 See supra notes 118-330 and accompanying text.
432 See supra notes 158-212 and accompanying text.
433 See supra notes 213-266 and accompanying text.
The plaintiffs also must plead and prove negligence. FTCA actions cannot be based upon strict or absolute liability theories, even though the United States would be absolutely liable for any injuries to foreign nationals not involved in launch activities, and even though private defendants may be liable under strict liability theories. In addition, these plaintiffs are precluded from recovering pre-judgment interest or punitive damages from the federal government regardless of applicable state law.

In contrast, private defendants enjoy none of these privileges and protections. Consequently, from a legal perspective, private entities such as contractors and manufacturers become very attractive defendants. And even though these entities may be guilty of only a relatively small percentage of fault as compared to the federal government, rules of joint and several liability may subject them to liability for the total amount of damages. A further contrast is that all claimants, not just the survivors or estates of the two privately-employed crewmen, may maintain an action against the manufacturers and contractors. And because of the liberal strict liability laws which exist in most jurisdictions, a plaintiff's burden of proof against these private defendants is greatly reduced as compared to the burden in an action against the United States, which requires proof of negligence.

This tragedy is a real life illustration of the legal inadequacies and inconsistencies which presently exist under the United States compensation system as applied to a space related accident. It is indisputable that such inconsistencies in the law, as it applies to different claimants or defendants, inevitably will lead to absurd results. It is hoped that the families of these seven brave astronauts

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434 See supra notes 267-330 and accompanying text.
435 See supra notes 91-95 and accompanying text.
436 Id.
437 See supra note 96.
438 See supra note 97 and accompanying text.
will be afforded prompt and adequate redress no matter how inadequate or inconsistent the present system appears. It would be unrealistic, however, to expect any immediate changes in the present compensation system, as it applies to outer space activities, to emerge as a result of this tragedy. Respected practitioners have long criticized the present tort compensation system as applied to complex or transitory tort litigation. They have stated that tort litigation arising out of a disaster involving multiple plaintiffs or defendants is often “marked by mystery, confusion, and inconsistencies.” They have criticized the present system as “outmoded, anachronistic, and frequently unworkable” and a “‘tortured, torturous and even torturing tort system.’” Various solutions have been proposed such as establishment of uniform legislation or replacement of the present system with a no-fault plan. Irrespective of the merits of such plans and the unquestioned need for change, these plans have not been adopted because of opposition from various interest groups. Unfortunately, it appears that the same unworkable and inconsistent system will apply to outer space and outer space related activities.

While the entities involved in America’s space program are reviewing diligently the present application of technology and procedure to prevent a recurrence of this tragedy, it is unrealistic to expect the same amount of re-examination or results to occur in the application of the law relating to such a disaster. While engineers and scientists work on the problems and root causes of this disas-

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440 Id.
443 See J. O’CONNELL, ENDING INSULT TO INJURY—No FAULT INSURANCE FOR PRODUCTS AND SERVICES 67 (1975).
ter, we in the legal community must remember that any review or examination of the applicable compensation system will rest largely with us.