THE APPLICATION OF THE DEATH ON THE HIGH SEAS ACT (DOHSA) TO COMMERCIAL SPACE FLIGHT ACCIDENTS

Jeffrey Robert Kuhns[*]

I. INTRODUCTION TO THE DEATH ON THE HIGH SEAS ACT (DOHSA)

The Death on the High Seas Act (DOHSA), 46 U.S.C. §§ 30301-30308[1] confers federal admiralty jurisdiction on a maritime death caused by wrongful acts, neglect, or default on the "high seas" more than three nautical miles (also called a "marine league"[2]) from United States shores. Originally targeted at marine disasters, courts have consistently applied DOHSA to aviation accidents since the 1941 decision of *Choy v. Pan American Airways Co.*, 1941 A.M.C. 438 (S.D.N.Y.) where the court reasoned that DOHSA could apply in a both a horizontal and vertical direction.[3] Therefore, using this same line of reasoning, DOHSA should be interpreted vertically to also encompass space flight. In 2000 DOHSA was redrafted to include provisions specifically relating to commercial aviation accidents which expand the distance requirement to twelve nautical

[*] State Bar of California; LL.M. Candidate, Chapman University School of Law, 2012; J.D. Whittier Law School, 2010; B.S. University of Southern California, Marshall School of Business, 2007; B.A. University of Southern California, College of Letters Arts and Sciences, 2006.

[1] Pub. L. 109-304, §6(c). Formerly 46 U.S.C. App. § 761 *et seq*.

[2] A marine league is a marine unit of measurement equal to three nautical miles; also called a sea league. BLACK'S LAW DICTIONARY (9th ed. 2009). *See also* In re Air Crash Off Long Island New York on July 17, 1996, 209 F.3d 200, 202 n.2 (2d Cir. 2000) ("A marine league is three nautical miles.") *and* In re Air Crash Disaster Near Peggy's Cove, Nova Scotia on September 2, 1998, 210 F.Supp.2d 570, 579 n.8 (E.D.Pa. 2002) ("A marine league is equivalent to three nautical miles (nm)."). One nautical mile is equal to 6,076.12 feet. As aviation altitudes are customarily given in feet, all calculations in this paper with respect to aviation analysis will be given in feet rounded the nearest whole foot. Accordingly, one marine league is equal to 18,228 feet. Originally, DOHSA used the term "marine league" but in 2006 substituted the words "three nautical miles" for clarity. H.R. REP. NO. 109-170 (2006), *reprinted in* 2006 U.S.C.C.A.N.972.

[3] Choy v. Pan American Airways Co., 1941 A.M.C. 483, 484 (S.D.N.Y.).

miles.[4] Using these principles, this paper will argue the legislative history of DOHSA and the *Choy* line of cases make this law applicable to wrongful death arising from commercial space flight.

A. A Historical Summary of Wrongful Death Actions Leading up to DOHSA

At common law, there was not a remedy for wrongful-death on the high seas.[5] A wrongful-death action allows the victim's dependents to recover for the harm the dependent actually suffered as a result of the victim's death, independent of any action the decedent may have for his or her own personal injuries. The harsh effects of the common law rule were first modified by statute, originally in England with the 1846 adoption of Lord Campbell's Wrongful Death Statute.[6]

In 1886, the United States Supreme Court held in *The Harrisburg* that, absent statutory authority, the general maritime law did not recognize a cause of action for wrongful maritime deaths.[7] After *The Harrisburg*, some courts in admiralty began to apply state wrongful death statutes to accidents in state and territorial waters as well as the high seas, because there was no applicable federal statute.[8] The power of a state to create an enforceable cause of action for death on the high seas was up-

[4] Wendell H. Ford Aviation Investment and Reform Act for the 21st Century., Pub. L. 106-181, §404, 114 Stat. 61, 131 (Apr. 5, 2000), amending 46 U.S.C. §§ 761-762. The amendment's application to DOHSA was retroactive to any death occurring after July 16, 1996, one day before TWA Flight 800, a Boeing 747-400 crashed off Long Island, New York and litigated as *In re Air Crash Off Long Island, New York, on July 17, 1996*, 209 F.3d 200, 2000 A.M.C. 1217.

[5] Offshore Logistics, Inc. v Tallentire, 477 U.S. 207, 212 (1986), on remand 800 F.2d 1390 (5th Cir. 1986). For more information on the early history of admiralty wrongful death see *Moragne v. State Marine Lines, Inc.*, 398 U.S. 375 (1970), on remand 446 F.2d 906 (5th Cir. 1971). *See also*, John W. Sims, *The American Law of Maritime Personal Injury and Death: An Historical Review,* 55 TUL. L. REV. 973 (1981); Paul S. Edelman, *Recovery for Wrongful Death Under General Maritime Law*, 55 TUL. L. REV. 1123 (1981).

[6] Lord Campbell's Act, 9 & 19 Vict. C. 93, An Act for Compensating the Families of Persons Killed by Accidents (Aug. 26, 1846); see also 2 BENEDICT ON ADMIRALTY, § 81a (7th ed., revised, 2010).

[7] The Harrisburg, 119 U.S. 199, 213-214 (1886).

[8] *See generally Offshore Logistics*, 477 U.S. 207; *Moragne*, 398 U.S. 375; and Paul S. Edelman, *supra* note 5.

held in *The Hamilton*,[9] when the United States Supreme Court held the Delaware Wrongful Death Statute was proper when two vessels owned by Delaware Corporations collided on the high seas. Thus, by the early 20th Century, there was a significant degree of inconsistency with maritime wrongful death.

Accordingly, DOHSA was enacted to fill this void in maritime law and provide a remedy for wrongful death where none existed before.[10] DOHSA was originally drafted as a maritime statute designed to protect sailors on ships. DOHSA's principal advocate, the Maritime Law Association, led in the creation of a bill providing a uniform federal right of action for wrongful death upon the high seas in 1915.[11] The bill was introduced in the House and Senate in the 64th Congress.[12] The bill was favorably reported in both houses but did not reach a vote.[13] The same bill was reintroduced in the House early in the 65th Congress in 1917 but did not reach a vote because the United States entered World War I four days after its introduction.[14] After World War I, the bill was again reintroduced in the 66th Congress.[15] Congress finally enacted DOHSA in 1920.[16] While DOHSA provided a cause of action for wrongful maritime deaths, it was not until 1970 that *The Harrisburg* was overruled.[17]

B. DOHSA's Limitation on Liability

A DOHSA aviation claim is unique because it avails the defendant of the benefit of limitation of liability to pecuniary damages and strictly defines permitted non-pecuniary damages. Under DOHSA, there is no limit to the categories of persons who may be sued as defendants. The plaintiff may sue the ves-

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[9] The Hamilton, 207 U.S. 398 (1907).

[10] *In re Air Crash Off Long Island New York, on July 17, 1996*, 209 F.3d 200, 203 (2d Cir. 2000).

[11] Robert M. Hughes, *Death Actions in Admiralty*, 31 YALE L.J. 115, 118 (1921).

[12] H.R. 9919, S. 4288, 64th Cong. (1916).

[13] S. REP. NO. 741 (1916), H. REP. NO. 1419 (1917).

[14] H.R. 39, 65th Cong. (Apr. 2, 1917).

[15] S. 2085, 66th Cong. (Nov. 19, 1919).

[16] 41 Stat. 537 (1920) *amended by* 46 U.S.C. § 30302 (2006).

[17] *Moragne v. State Marine Lines, Inc.*, 398 U.S. 375, 378 (1970).

sel or aircraft *in rem*, as well as any person or corporation that would have been liable.[18] DOHSA authorizes the decedent's "spouse, parent, child, or dependent relative" to sue as the personal representative in admiralty court.[19] Maritime claims under DOHSA limit recovery to pecuniary damages.[20] State wrongful-death statutes are not permitted to supplement DOHSA claims with non-pecuniary damages[21] and bars the plaintiff from any state law survival rights.[22] Perhaps most importantly, DOHSA prohibits recovery of punitive damages.[23]

In the case of a commercial aviation accident, DOHSA provides additional compensation for non-pecuniary damages in addition to the pecuniary damages. Non-pecuniary damages are strictly defined to mean "damages for loss of care, comfort, and companionship."[24] In *Dooley v. Korean Air Lines Co.,* the United States Supreme Court held that aviation DOHSA claims preclude any general maritime law survival action that would permit recovery for pre-death pain and suffering.[25]

C. Test for DOHSA Applicability to Aviation Accidents

DOHSA's 2000 amendments require that in the case of an aviation accident, the wrongful act, neglect, or default must occur on (1) at least twelve (12) nautical miles from shore and (2) on the high seas.[26]

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[18] 46 U.S.C. § 30302.

[19] 46 U.S.C. § 30302.

[20] 46 U.S.C. § 30303; *see also* Miles v. Apex Marine Corp., 498 U.S. 19, 31 (1990). For a detailed discussion of calculation of damages with DOHSA litigation, see *Matter of Adventure Bound Sports*, 858 F. Supp. 1192 (S.D.Ga. 1994).

[21] In re Korean Airlines Disaster of Sept. 1, 1983, 117 F.3d 1477, 1481 n.4 (D.C. Cir. 1997), aff'd 524 U.S. 116 (1988).

[22] Jacobs v. Northern King Shipping Co., 180 F.3d 713, 717, 170 A.M.C. 967 (5th Cir. 1999).

[23] 46 U.S.C. § 30307(b).

[24] 46 U.S.C. § 30307(a); *see* Zicherman v. Korean Airlines Co., Ltd., 516 U.S. 271, 230 ("…petitioners cannot recover for loss-of-society damages under DOHSA. Moreover, where DOHSA applies, neither state law, . . . nor general maritime law, . . . can provide a basis for recover of loss-of-society damages.").

[25] 524 U.S. 116 (1998).

[26] 46 U.S.C. § 30307; *see also* THOMAS J. SCHOENBAUM, ADMIRALTY AND MARITIME LAW 429 (West Publishing Co., 4th ed., 2001).

1. Distance

DOHSA currently requires that in the case of an aviation accident, the wrongful act or omission leading to the accident must occur at least twelve nautical miles from shore. Prior to the 2000 Amendments, this distance, for both marine and aviation accidents were only three nautical miles.

2. High Seas

Courts have interpreted the term "high seas" broadly. Interpretations of this term have been relative to the shoreline of the United States and include waters within the jurisdiction of foreign states and foreign state's inland lakes, seas, and navigable waterways.

a. Historical Views of the "High Seas"

Historically, the high seas have been defined to include those areas that are outside the territory of a national state. Originally, the United States defined that distance as one sea league, or three nautical miles. The Court of Appeals for the Second Circuit explained that:

> In 1793, seeking to remain neutral in the war between France, Britain and Spain in the Atlantic Ocean, Secretary of State Thomas Jefferson claimed the 'smallest distance' for the extent of American territorial seas. Relying on 'the utmost range of a cannon ball, usually stated at one sea league,' Jefferson made a claim for three nautical miles.[27]

One of the first judicial definitions of the high seas, from Justice Story, characterized the "high seas" as "the open,

[27] *In re Air Crash Off Long Island New York, on July 17, 1996*, 209 F.3d 200, 205 (2d Cir. 2000). *See also* Note from Secretary of State Jefferson to the British Minister on the Subject of the U.S. Territorial Sea (Nov. 8, 1793), *reprinted in* THE EXTENT OF THE MARGINAL SEA 636 (Henry G. Crocker ed., 1919) (conveying to the British Minister President George Washington's instruction to fix the United States territorial sea to a "distance of one sea league, or three geographical miles."); U.S. v. California, 332 U.S. 19, n.16, 1947 A.M.C. 1579, 1590 n.16 (1947) (characterizing Secretary of Jefferson's note as "the first official American claim for a three-mile zone which has since won general international acceptance").

un[e]nclosed ocean, or portion of the sea, which is without the *fauces terre* on the sea coast."[28] This viewpoint is based on the position that the "high seas" should be defined by geographic features.

However, subsequent definitions by courts shifted towards the theory of governmental control. One of the first cases to articulate this view was *United States v. Morel* in 1834, which held that "[t]he open sea, the high sea, the ocean, is that which is . . . under the particular right or jurisdiction of no sovereign."[29]

During the nineteenth and early twentieth century, the Supreme Court holdings continued with this jurisdictional approach and definition, focusing on governmental control as opposed to geography for defining the "high seas." In *The Hamilton*, Justice Holmes of the United States Supreme Court characterized the "high seas" as "outside the territory, in a place belonging to no other sovereign."[30] The Supreme Court also defined the "high seas" as "where the law of no particular State has exclusive force, but all are equal."[31] Phrased another way, "[t]he high sea is common to all nations and foreign to none."[32] Shortly after DOHSA's enactment, although it was targeted at the enforceability of a Prohibition statute, in *Cunard S.S. Co. v. Mellon,* 262 U.S. 100, 122-23 (1923), the Supreme Court held, likely for further clarity, that the high seas included international waters.

These holdings frame the general principal that the United States has historically interpreted the "high seas" to be a place not under the control of a specific government, but as the following cases show, in the context of DOHSA aviation actions, this also includes foreign state's waters.

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[28] United States v. Grush, 26 F.Cas. 48, 51 (D.Mass. 1829) (emphasis added). *Fauces terre* literally means "the jaws of land," which are "narrowed headlands and promontories, including a portion or arm of the sea within them." BLACK'S LAW DICTIONARY 485 (2nd ed. 1910).

[29] United States v. Morel, 26 F.Cas. 1310, 1312 (C.C.E.D.Pa. 1834).

[30] *The Hamilton,* 207 US. 398, 403 (1907).

[31] The Scotland, 105 U.S. 24, 29 (1882); *see also* La Bourgogne, 210 U.S. 95 (1908) (quoting *The Scotland*).

[32] Maul v. United States, 274 U.S. 501, 511 (1927).

b. Expansion to Include Territorial Waters of Foreign States

Three cases, *In re Air Crash Disaster Near Peggy's Cove, Nova Scotia on September 2, 1998*,[33] *Jennings v. Boeing Co.*,[34] and *In re Air Crash Disaster Near Bombay, India on Jan. 1, 1978*,[35] held DOHSA applies to aviation accidents occurring on the waters of a foreign state because that territory constituted the "high seas" relative to the United States.

In the crash of Swissair Flight No. 111, litigated under the caption *In re Air Crash Disaster Near Peggy's Cove, Nova Scotia on September 2, 1998*, while the exact location of the crash was undetermined, it was stipulated by all parties that it was outside the three nautical mile limit of Nova Scotia's territorial waters claimed by Canada at the time DOHSA was enacted in 1920 but within the twelve nautical mile territorial waters limit then claimed by the Canadian government.[36] The District Court concluded that "DOHSA, as amended, applies to aviation accidents in foreign territorial waters."[37] In *Jennings*, the District Court applied DOHSA to a plane crash two and a half miles off of the coast of the Shetland Islands, Scotland. The District Court, when adjudicating *In re Air Crash Near Bombay, India on Jan. 1, 1978*, observed that "[n]othing in [DOHSA] or its legislative history supports the position that Congress intended to limit the scope of this remedy to deaths occurring in international waters" and thus held DOHSA applied.[38]

This holding is not specific to aviation accidents because in terms of maritime accidents, the term "high seas" for the purposes of DOHSA applies to nautical accidents that occur within

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[33] *In re Air Crash Disaster Near Peggy's Cove, Nova Scotia on September 2, 1998*, 210 F.Supp.2d 570, (E.D. Pa. 2002).

[34] *Jennings v. Boeing Co.*, 660 F. Supp. 796 (E.D. Pa. 1987) *aff'd. without op.*, 838 F.2d 1206 (3d Cir. 1988).

[35] In re Air Crash Disaster Near Bombay, India on Jan. 1, 1978, 531 F. Supp. 1175 (W.D. Wash. 1982).

[36] *In re Air Crash Disaster Near Peggy's Cove, Nova Scotia on September 2, 1998*, 210 F.Supp.2d at 572.

[37] *Id.* at 586.

[38] *In re Air Crash Disaster Near Bombay, India on Jan. 1, 1978*, 531 F.Supp. at 1183.

foreign territorial waters.[39] As summarized in *Benedict on Admiralty*: "It appears to be settled that the term 'high seas' within the meaning of DOHSA is not limited to international waters, but includes the territorial waters of a foreign nation as long as they are more than a marine league away from United States shore."[40] In light of DOHSA's 2000 Amendments, in the context of aviation accidents, the phrase "marine league" as used in *Benedict on Admiralty* should be replaced with "twelve nautical miles".

D. The Origin of Aviation DOHSA Claims Prior to Statutory Language

While actions arising from aviation torts are generally not cognizable in admiralty, there are two specific exceptions.[41] The first is in situation where the wrong bears a significant relationship to a traditional maritime activity.[42] The second is when there is specific legislation authorizing a claim, such as DOHSA.

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[39] Compare with Howard v. Crystal Cruises, Inc., 41 F.3d 527, 529 (9th Cir. 1994) (territorial waters of Mexico are "high seas" under DOHSA); Azzopardi v. Ocean Drilling & Exploration Co., 742 F.2d 890, 892 (5th Cir. 1984) (English Channel is "high seas" under DOHSA); Kuntz v. Windjammer "Barefoot" Cruises, Ltd., 573 F. Supp. 1277, 1280-81 (W.D. Pa. 1983), aff'd 738 F.2d 423 (3d Cir. 1984) (Scuba diving off Berry Islands, Bahamas); First & Merchants Nat'l Bank v. Adams, 1979 A.M.C. 2860 (E.D. Va.) aff'd in part, rev'd in par on other grounds, 644 F.2d 878 (4th Cir. 1981) (Canadian territorial waters are high seas); and Moyer v. Klosters Rederi, 645 F. Supp. 620 (S.D.Fla. 1986) (Jamaican territorial waters are high seas).

[40] BENEDICT ON ADMIRALTY, *supra* note 6, at §81 n. 8.

[41] *See generally* AM. JUR. AVIATION §§ 189, 190.

[42] Executive Jet Aviation, Inc. v. City of Cleveland, Ohio, 409 U.S. 249 (1972). In Executive Jet, the Supreme Court held that federal courts lacked admiralty jurisdiction over a situation where an airplane on a flight solely within the continental United States crashed into Lake Erie, a public navigable waterway, shortly after departing Cleveland's Burke Lakefront Airport reroute to Portland, Maine, with a final destination of White Planes, New York because it did not have a sufficient nexus to a traditional maritime activity. *See also*, Hayden v. Krusling, 531 F. Supp. 468 (N.D. Fla. 1982); Brons v. Beech Aircraft Corp., 627 F. Supp. 230 (S.D. Fla. 1985); City of New York v. Waterfront Airlines, Inc., 620 F. Supp. 411 (S.D.N.Y. 1985); *see generally* Robert A. Brazener, *What Constitutes Significant Relationship to Traditional Maritime Activity to Support Federal Court's Admiralty Jurisdiction in Aviation Tort Cases*, 30 A.L.R. FED. 759; ROBERT FORCE AND MARTIN J. NORRIS, THE LAW OF MARITIME PERSONAL INJURIES §1:15 (5th ed. 2004).

1. *Choy v. Pan-American*

The first case to apply DOHSA to aviation accidents was *Choy v. Pan-American Airways Co.*[43] In 1941, DOHSA, then codified as 46 U.S.C. § 761 et seq., did not include specific provisions relating to aviation accidents. In *Choy*, the plaintiff administrator sued Pan-American Airways (Pan Am) following the crash of a seaplane in the Pacific Ocean.[44] The plaintiff brought causes of action under: (1) DOHSA, (2) the Death Statute of Nevada, the place of defendant's incorporation, (3) the Death Act of New York where Pan-Am had a place of business and where plaintiff purchased his ticket, (4) the Warsaw (International Airline) Convention, and (5) the laws of the Commonwealth of the Philippine Islands.[45]

Noting that "[t]he language of [DOHSA] is broad" the United States District Court for the Southern District of New York found that "beyond a marine league from shore" should be construed to extend in both a horizontal and vertical direction:

> The statute certainly includes the phrase 'on the high seas' but there is no reason why this should make the law operable only on a horizontal plane. The very next phrase 'beyond a marine league from shore of any State' may be said to include a vertical sense and another dimension.[46]

2. Subsequent Cases Confirmed *Choy*

With *Choy* serving as the genesis of DOHSA application to aviation accidents "beyond a marine league from shore" by applying the law in a vertical direction, courts consistently followed this holding and firmly entrenched DOHSA as the substantive law for aviation accidents occurring on the "high seas."

In *Wilson v. Transocean Airlines*, a plane traveling from Guam to Oakland, California, fatally crashed 325 miles east of Wake Island.[47] The passenger's spouse brought an action for loss

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[43] *Choy v. Pan-American Airways Co*., 1941 A.M.C. 438 (S.D.N.Y.)
[44] *Id*. at 483.
[45] *Id*.
[46] *Id*. at 484-485.
[47] Wilson v. Transocean Airlines, 121 F. Supp. 85, 86 (1954).

of companionship and support under the governing California law but Transocean, the carrier, argued that DOHSA represented the sole and exclusive remedy because the accident occurred on the "high seas" and more than a marine league from shore.[48] The *Wilson* court noted: "[i]t is clear that the scope of [DOHSA], within the geographical area of its operation, was intended to be as broad as the traditional tort jurisdiction of admiralty."[49] As a result, the court concluded DOHSA "affords a right of action for deaths resulting from airplane crashes on the high seas."[50]

In *Noel v. Linea Aeropostal Venezolana*, Cashin, J. held:

> Neither authority, the language of the Statute nor the dictates of common sense sustain a holding that the fulfillment of the jurisdictional requirements of the Federal Death on the High Seas Act is to be governed by the determination of such elusive fact as whether a person died above, on or in the sea.[51]

Thus, using *Noel*, the exact place of the decedent's death is irrelevant provided the wrongful act or omission occurred within the situs of DOHSA.

The principal that DOHSA is the substantive law for aviation accidents was also articulated in the 1983 Korean Airlines Flight 007 Disaster when the Soviet Union shot down a Korean Airlines 747 that veered off course. As litigated, *Zicherman v. Korean Airlines Co. Ltd.*, 516 U.S. 217 (1996), the Supreme Court held that when "an airplane crash occurs on the high seas, DOHSA supplies the substantive Untied States law."[52]

The 2000 DOHSA Amendments have not negated the *Choy* line of cases but, in addition to being on "the high seas," also replaced the three nautical mile requirement with a new situs

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[48] *Id.* at 94-95.

[49] *Id.* at 92

[50] *Id.* at 93; referencing Sierra v. Pan American World Airways, Inc., 107 F. Supp. 519 (D.C.P.R. 1952); Lacey v. L.W. Wiggins Airways, Inc., 95 F. Supp. 916 (D.C.Mass. 1951); *Choy v. Pan American Airways,* 1941 A.M.C. 438 (S.D.N.Y.).

[51] *Noel v. Linea Aeropostal Venezolana*, 154 F. Supp. 162, 164 (S.D.N.Y. 1956), aff'd 247 F.2d 667 (2d Cir. 1957).

[52] *Zicherman v. Korean Airlines Co., Ltd.,* 516 U.S. 217, 231.

requirement of the accident occurring at least twelve nautical miles off of the United States shoreline.

E. DOHSA's Inconsistent Drafting and TWA Flight 800

The statutory language of DOHSA has previously given rise to problems with regards to the boundaries of DOHSA in regards to aviation litigation. If there is a commercial space accident, similar problems will arise as to where the "high seas" begin as did in the litigation following the crash of Trans World Airlines (TWA) Flight No. 800 in 1996, the most recent DOHSA aviation accident case before an appellate court to interpret the term "high seas."

TWA 800, a Boeing 747-400, crashed shortly after takeoff in the Atlantic Ocean from New York's John F. Kennedy International Airport reroute to Charles de Gaulle airport in Paris, France.[53] The crash, litigated under the caption *In re Air Crash Off Long Island, New York, on July 17, 1996*, killed all 230 passengers and crew and occurred approximately eight nautical miles off the shore of Long Island, New York.[54] The subsequent litigation addressed the problem of how to address accidents that occur between DOHSA's then three nautical boundary but within the twelve nautical mile boundary claimed by the United States. The Court found that in order for DOHSA to apply (as this case was decided before the 2000 DOHSA Amendments), the accident must take place both on "the high seas" and "beyond a marine league from shore of any state."[55]

The problem in TWA 800 arose because under Presidential Proclamation No. 5928, issued on December 27, 1988 by President Reagan, the territorial waters of the United States were extended from three nautical miles to twelve nautical miles.[56] Thus TWA 800 crashed outside of what was DOHSA's three nautical mile boundary but still within the United States terri-

[53] *In re Air Crash Off Long Island, New York, on July 17, 1996,* 209 F.3d 200, 201 (2d Cir. 2000).
[54] *Id.*
[55] *Id.*
[56] Proclamation No. 5928, 54 Fed. Reg. 777 (Dec. 28, 1988); *In re Air Crash Off Long Island, New York, on July 17, 1996*, 209 F.3d 200, 202.

torial waters. Thus the court considered whether the proclamation, by increasing the territorial waters from three to twelve miles, had also increased the boundary of the "high seas."

As the Court of Appeal for the Second Circuit observed, "once the United States or any state or territory thereof has asserted sovereignty over certain waters, DOHSA does not give the remedies available in those waters."[57] Therefore by examining historical interpretations of the "high seas" the court found the "background and legislative history of DOHSA demonstrate Congress' intent to exclude all state and federal territorial waters from its [DOHSA's] scope" because they were not the high seas.[58] Therefore, "DOHSA does not apply to United States territorial waters where the crash in this case occurred."[59]

F. Summary of DOHSA Principles for Aviation Accidents

In summary, to apply DOHSA in an aviation accident setting, the accident must occur more than twelve nautical miles off United States shoreline and on the "high seas" – often referred to as the *situs*. Second, the *Choy* line of cases have consistently applied DOHSA in a vertical direction and the location of the decedent's death is irrelevant as long as the wrongful act or omission occurred while the aircraft is within the DOHSA *situs*. Finally, under the TWA 800 holding, once the United States asserts jurisdiction over any body of water, that body of water is removed from DOHSA's jurisdiction. With this foundation, it is now appropriate to survey why wrongful death in space poses a novel issue.

II. A BRIEF HISTORY OF WRONGFUL DEATH AND U.S. SPACE OPERATIONS

While at its infancy, the commercial space industry will emerge as a significant industry within the coming years. Early space exploration, dominated by the United States and the Soviet Union during the 1950's and 1960's, arguably culminated

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[57] *In re Air Crash Off Long Island, New York, on July 17, 1996,* 209 F.3d at 215.
[58] *Id.* at 213.
[59] *Id*. at 215.

with the *Apollo 11* Moon landing in 1969. However, such exploration has not been without human sacrifice as the United States National Aeronautics and Space Administration (NASA) has lost three spacecraft to accidents. *Apollo 1* caught fire during a 1967 test killing three astronauts. *Space Shuttle Challenger* exploded shortly after liftoff in 1986 and *Space Shuttle Columbia* disintegrated upon re-entry in 2003, each killing seven astronauts. In all of these cases, wrongful death claims were non-actionable.

In two cases, *Smith v. U.S.*,[60] and *Smith v. Morton Thiokol, Inc*.,[61] the widow of astronaut Michael J. Smith, a member of the *Challenger* crew, brought suit against NASA for this death. In these companion cases, the courts held that the astronauts were NASA employees acting within the course and scope of their employment so the claims must be brought under the Federal Tort Claims Act,[62] and that suits are bared under the Federal Tort Claims Act by the *Feres* doctrine,[63] because astronauts are military personnel assigned to NASA and the injuries arose from an activity incident to military duty, even though the astronauts were killed in a mission for NASA, a civilian agency.[64] Thus, as long as space flight was conducted by a government entity, the problem of wrongful death actions by the survivors was non-actionable because of the application of the *Feres* doctrine.

However, now that private enterprise is set to commence commercial space flight operations within the immediate future, history suggests that it is inevitable that accidents will happen

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[60] Jane J. Smith v. U.S., 877 F.2d 40 (11th Cir. 1989), cert. denied, 493 U.S. 1069 (1990).

[61] Jane J. Smith v. Morton Thiokol, Inc., 712 F. Supp. 893 (M.D.Fla. 1988), aff'd 877 F.2d 40 (11th Cir. 1989), cert. denied 493 U.S. 1069 (1990).

[62] 28 U.S.C. §§ 1291, 1346(b), (c), 1402(b), 2401(b), 2402, 2671-80.

[63] Feres v. United States, 340 U.S. 135 (1950). In *Feres*, the executor of a soldier who had died when his barracks caught fire alleged that the United States had been negligent in housing the solider in barracks with a known defective heating system. The US Supreme Court noted that although the Federal Tort Claims Act allows persons intentionally or negligently injured by a government employee to sue the government for their injuries, the federal government could not be held liable for injuries to members of the armed forces arising from activities incident to military service.

[64] *Jane J. Smith v. U.S.*, 877 F.2d 40; *Jane J. Smith v. Morton Thiokol, Inc.* 712 F. Supp. 893.

and wrongful death actions will arise which will not have the *Feres* immunity NASA enjoys. *SpaceShipOne* became, in 2004, the first privately built spacecraft to exceed an altitude of 100km twice in succession.[65] After *SpaceShipOne*'s success, Virgin Atlantic announced it had acquired the design rights to *SpaceShipOne* with the intent of creating a space tourist vehicle.[66] Furthermore, with the retirement of the *Space Shuttle* fleet in 2011, NASA will no longer have the ability to conduct human spaceflight operations. Thus, as private spaceflight business operations appear highly likely in the immediate future, it is safe to anticipate that there will be emerging legal issues which need to be addressed

III. AIRSPACE AND AERONAUTICAL NAVIGATION

The United States has claimed exclusive sovereignty of its airspace.[67] In doing so, the United States has vested power with the Federal Aviation Administration (FAA) for developing the airspace of the United States.[68]

First, the FAA has created sets of "flight rules"—Visual Flight Rules (VFR) and Instrument Flight Rules (IFR)—which govern aviation navigation. Next, FAA has established two forms of airspace: controlled and uncontrolled. Both are defined and governed by the Federal Aviation Administration in Part 71 of the Federal Aviation Regulations (FAR).[69] All classes of airspace are assigned a letter: A, B, C, D, E, or G and some contain

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[65] MARK WILLIAMSON, SPACE: THE FRAGILE FRONTIER 9 (2006).

[66] *Id.* at 133.

[67] 49 U.S.C. § 40103(a)(1) ("The United States Government has exclusive sovereignty of airspace of the United States."); This law consistent with Article 1 of the 1944 Chicago Convention whereby the major World War II Allied powers agreed that a nation should have "…complete and exclusive sovereignty over the airspace above its territory." Convention on International Civil Aviation, art. 1, Dec. 7, 1944, 61 Stat. 1180, 15 U.N.T.S. 295 [hereinafter Chicago Convention].

[68] 49 U.S.C. § 40103(b)(1)("The Administrator of the Federal Aviation Administration shall develop plans and policy for the use of navigable airspace and assign by regulation or order the use of the airspace necessary to ensure the safety of aircraft and efficient use of airspace.").

[69] Federal Aviation Regulations are codified in the Code of Federal Regulations (C.F.R.), Title 14. *See* 14 C.F.R. § 71 et seq. for specific guidance regarding United States controlled airspace.

a specific flight rule requirements.[70] All altitudes listed in the FARs are given in feet as mean sea level (MSL), or the distance above the mean level of the ocean and above 18,000 feet, as Flight Levels (FL).[71]

A. *Visual Flight Rules and Instrument Flight Rules*

There are two types of regulations governing the weather conditions and licensure under which a pilot may operate an aircraft: VFR and IFR. VFR is a set of regulations which allow a pilot to operate an aircraft in weather conditions meeting certain minimum visibility requirements. Permission from FAA controllers is not required to operate under VFR in certain categories of airspace. However, under IFR, the pilot must be in two way radio communications with, and receive permission from, Air Traffic Control (ATC), and have a transponder.[72]

B. *Uncontrolled Airspace*

Class G is the only form of uncontrolled airspace. Although specifically designed by FAA Order JO 7400.9V, *Airspace Designation and Reporting Points* dated August 9, 2011, it generally extends to either 700 feet above ground level or 1,200 feet above ground level at certain fixtures.

C. *Controlled Airspace from Surface to FL180*

The FARs establish five classes of controlled airspace as defined by letter: A, B, C, D, and E. All flight operations within controlled airspace has some limitations or restrictions. Such restrictions include, but not limited to, radio communication, altitude restrictions, and position reporting.[73]

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[70] *Id.*

[71] A Flight Level (FL) is a standard altitude of in aircraft in hundreds of feet. Flight Levels are usually designed in writing as FLxxx where xxx is a three-digit number indicating the pressure altitude in units of 100 feet (e.g., 18,000 feet = FL 180). For example, flight level 250 represents a barometric altimeter indication of 25,000 feet; flight level 255, an indication of 25,500 feet. 14 C.F.R. § 1.1.

[72] 14 C.F.R. §§ 91.126 - 91.135.

[73] *Id.*

Class A airspace exists between FL180 and FL600. Classes B, C, D, E, and F airspace exist below FL 180 (the lower limit of Class A airspace), and are specifically defined by FAA Order JO 7400.9V, *Airspace Designation and Reporting Points* dated August 9, 2011, This order specifically lists coordinates of airspaces that fall into the Class B, C, D, E, and F airspace. Additionally, Class E airspace is also defined by exclusion when below FL 180. Therefore, if airspace is not designated Class A, B, C, D, F, or G, then by exclusion, it is defined as Class E airspace.[74]

D. Controlled Airspace from FL180 to FL600

Class A airspace is defined as all "airspace overlying the waters within 12 miles of the coast of the 48 contiguous States, from 18,000 feet MSL to and including FL 600 . . ."[75] In order to operate in Class A airspace, the pilot must by flying under Instrument Fight Rules (IFR) receive a clearance, or permission from Air Traffic Control (ATC), have altitude reporting equipment, and maintain two-way radio communication with ATC.[76]

E. Airspace above FL600

Airspace above FL600 is Class E airspace.[77] Thus, Class E airspace exists both below FL180 and above FL600. In Class E airspace, radio communications, and ATC clearance are not required and in limited situations, below 10,000 feet, altitude reporting near Class B airspace is required.

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[74] FAA Order JO 7400.9V, Airspace Designation and Reporting Points, August 09, 2011; §6000, pg. E-1. "Generally, if the airspace is not Class A, Class B, Class C, or Class D, and it is controlled airspace, it is Class E airspace." *See also* 14 C.F.R. § 71.1.

[75] FAA JO Order 7400.9V, *supra* note 74. *See* 14 C.F.R. 71.81.

[76] 14 C.F.R. § 91.135.

[77] 14 C.F.R. § 71.71.

IV. DOHSA SHOULD APPLY WHEN A COMMERICAL SPACE ACCIDENT OCCURS MORE THAN TWELVE NAUTICAL MILES ABOVE EARTH BECAUSE ABOVE FL600 CONSTITUTES THE "HIGH SEAS" FOR THE PURPOSES OF DOHSA

In order to satisfy the traditional aviation requirements for DOHSA, the *situs* of the accidents must be twelve nautical miles from shore and on the "high seas." Here, the distance from shore is interpreted in the vertical direction and above FL600 is equivalent to the "high seas."

A. Twelve Vertical Nautical Miles (72,913 Feet)

The *Choy* line of DOHSA cases has consistently held that DOHSA applies in a "vertical sense" as well as a horizontal sense. Therefore, twelve vertical nautical miles above the earth would equivocate to an altitude of 72,913 feet. Accordingly, any accident above this altitude should, if taken literally as the *Choy* line of cases suggests, meet this distance requirement of DOHSA.

B. Above FL600 the Airspace is the "High Seas"

Above FL600, the airspace shares many similarities to the "high seas." As previously discussed, jurisprudence has, for the better part of 200 years focused on government control as an approach for whether a locale qualifies as "the high seas."[78] Using this test, there is evidence that the United States is not exercising governmental control above this altitude sufficient to claim jurisdiction that would prevent it from being considered the "high seas."

In order to show that the United States government is not exercising control over the airspace above FL600, it is first necessary to compare the governmental involvement with the class A airspace directly below it. When operating in Class A airspace, a pilot is required to be operating IFR, obtain ATC clear-

[78] *See United States v. Morel*, 26 F.Cas. 1310 (C.C.E.D.Pa. 1834); *The Hamilton*, 207 U.S. 398 (1907); *The Scotia,* 81 U.S. 170 (1871)*; The Scotland*, 105 U.S. 24 (1882); *La Bourgogne*, 210 U.S. 95 (1908); and *Maul v. United States*, 274 U.S. 501 (1927).

ance, be in two-way radio communications, and have a transponder with altitude encoding ability (often referred to as Mode C transponder).[79] Some of these requirements may seem repetitive because under IFR, a pilot must be in contact with ATC. Class A airspace, as previously mentioned, is the only airspace which mandates IFR procedures.[80]

However, within classes B, C, D, E, and G, a pilot may chose to operate under VFR or IFR.[81] Thus, when a pilot goes above the Class A ceiling of FL600 and enters into the Class E airspace above FL600, the pilot is no longer obligated to operate IFR and can operate VFR and have no contact with ATC. While it remains possible for the pilot to continue to operate under VFR, the regulations permit VFR fight rules, which do not mandate continued ATC clearance, altitude reporting, or two-way radio communications – symbolic of the fact that United States is not exercising control over aviation activities above this altitude.

Further, as a practical note, the Class E airspace, as written in the FARs above FL600 extends indefinitely into space which places it into conflict with International Law. The United States claims exclusive sovereignty over its airspace in connection with the principles of the Chicago Convention, a 1944 conference on developing post World War II international air travel standards.[82] However, Article II of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies (Outer Space Treaty) prohibits any nation from claiming sovereignty over Space.[83] As the Class E airspace extends indefinitely, it at some point violates this treaty.

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[79] 14 C.F.R. § 91.135(a)-(c).

[80] 14 C.F.R. §§ 91.126 - 91.135.

[81] 14 C.F.R. §§ 91.126 - 91.135.

[82] Chicago Convention, *supra* note 67.

[83] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, *opened for signature* Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205. Outer Space is "not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means." *Id.* at art. II.

V. Observations and Conclusions

Given the history of space flight, fatalities, while uncommon, have occurred. Since May 5, 1961, when Alan Sheppard became the first American in Space, in the sixty years that have since passed, NASA lost sixteen Americans (and one Israeli) to spaceflight accidents. The Soviet Union has also suffered at least six fatalities with *Soyuz 1* in 1967 and *Soyuz 11* in 1971. Therefore, there is a likely probably that as commercial space flight operations enter private industry, fatalities will happen and DOHSA should be included in any litigation.

A. DOHSA Will Also Apply if the Circumstances from the Commercial Operation Contribute to the Deceased Passing While the Spacecraft is on the High Seas

If the deceased does not pass during the actual flight, but rather from factors attributed to their travels, DOHSA's provisions are drafted so that the tort is deemed to occur, not where the wrongful act or omission has its inception, but were the impact of the act or omission produced such injury that gives cause to the rise of the cause of action.[84]

In *D'Aleman v. Pan American World Airways, Inc*.,[85] the wife of the decedent brought suit against Pan American after her husband "became so terrified by the feather of the engine [a malfunction causing the propeller to stop spinning] and the announcement of the unscheduled landing at Norfolk that he went into a state of shock which, four days later, in New York, resulted in his death" after his flight from Puerto Rico to New York was forced to make an unscheduled landing in Norfolk, Virginia because of engine trouble.[86] Noting that "[t]o give passengers on ship protection [of DOHSA] and deny similar rights to passengers in the air would amount to an unjustifiable and highly technical discrimination," the Court of Appeal for the Second Circuit held that DOHSA "grants a right of action in

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[84] *See generally* Middleton v. United Aircraft Corp., 204 F. Supp. 856 (S.D.N.Y. 1960).

[85] D'Aleman v. Pan American World Airways, Inc., 259 F.2d 493 (2d Cir. 1959).

[86] *Id.* at 494.