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Houston, We Have a (Liability) Problem

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NOTE

HOUSTON, WE HAVE A (LIABILITY) PROBLEM

*Justin Silver**

The development of private manned space flight is proceeding rapidly; there are proposals to launch paying passengers before the end of 2014. Given the historically dangerous nature of space travel, an accident will probably occur at some point, resulting in passengers' injury or death. In the event of a lawsuit stemming from such an accident, a court will likely find that a space flight entity operating suborbital flights is a common carrier, while an entity operating orbital flights is not. Regardless of whether these entities are common carriers, they face a threat of high levels of liability, as well as risks stemming from an inability to obtain insurance and the escalation of tort litigation costs. Given that the private manned space flight industry is brand new and can provide many benefits to the United States and the world, it is important to protect the industry while it grows. Individual states have attempted to protect the industry by passing liability immunity statutes, but passing statutes on a state-by-state basis is insufficient to protect the industry from the liability it faces. As a result, this Note proposes a national tort liability immunity statute to shield the industry until it reaches a more advanced stage of development.

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INTRODUCTION

Manned space flight is an incredibly complex and dangerous endeavor. Of the 536 individuals who have travelled into space,¹ 18, or 3.4 percent, have died during a mission.² Until recently, however, all manned space flights were the province of national governments. As a result, the issue of tort liability for injury or death of crew members arose infrequently and, in the United States, only within the bounds of the Federal Tort Claims Act.³ Within the past decade or so, there has been an ever-increasing push for commercial manned space flight to support and, in some instances, supplant governmental space flight.

The current proposals for commercial, human space transportation can roughly be broken down into two categories: suborbital and orbital. Suborbital space flights travel with enough speed to pass through the boundary between earth's atmosphere and space but do not achieve a high enough velocity to enter orbit around the earth. Orbital space flights, on the other hand, achieve a high enough velocity to enter orbit. The extra speed necessary to enter orbit is very difficult and costly to achieve.

Virgin Galactic is at the forefront of commercializing suborbital manned space flight.⁴ Scaled Composites and Virgin Galactic have formed a joint venture, the Spaceship Company, to construct the spacecraft that Virgin Galactic will use to transport passengers into space.⁵ Virgin Galactic aims to build a reusable spacecraft that will carry two crew members and six passengers into space on a suborbital flight.⁶ Virgin Galactic CEO Sir Richard Branson is so confident in the safety and success of the craft that he has

1. *List of Space Travelers by Name*, WIKIPEDIA, http://en.wikipedia.org/wiki/List_of_space_travelers_by_name (last visited Dec. 26, 2013). The number of space travelers cited is according to Department of Defense criteria. According to Fédération Aéronautique Internationale criteria, 530 individuals have gone into space. *Id.*

2. *List of Spaceflight-Related Accidents and Incidents*, WIKIPEDIA, http://en.wikipedia.org/wiki/List_of_spaceflight-related_accidents_and_incidents#Astronaut_fatalities (last visited Oct. 12, 2013).

3. 28 U.S.C. §§ 1346(b), 2671–80 (2006).

4. See VIRGIN GALACTIC, <http://virgingalactic.com> (last visited Oct. 12, 2013).

5. *History*, VIRGIN GALACTIC, <http://www.virgingalactic.com/overview> (last visited Oct. 12, 2013).

6. *Id.*; Pan Pylas, *Branson Gets Kids on Board for First Space Flight*, ASSOCIATED PRESS, July 11, 2012, available at <http://bigstory.ap.org/article/branson-gets-kids-board-first-space-flight>.

reserved tickets on the first flight of SpaceShipTwo for himself and his two children.⁷

SpaceX, one of the leading developers of orbital spacecraft,⁸ has developed a fully recoverable capsule capable of autonomous operation that can be configured to transport cargo and passengers into space.⁹ The National Aeronautics and Space Administration (“NASA”) picked SpaceX as one of three teams to receive funding through NASA’s Commercial Crew Integrated Capability (“CCiCap”) program to test and develop the capability of commercial transportation of crew members to the International Space Station (“ISS”).¹⁰ A crewed test flight is scheduled to occur in 2015.¹¹

Additionally, some corporations have proposed other, more exotic manned launch systems. While not as close to completion, recent proposals for suborbital point-to-point transportation would allow flights from New York to Tokyo in as little as ninety minutes.¹² For example, XCOR, another spacecraft manufacturer, has developed a two-seat suborbital spacecraft with which the company plans to launch tourist flights from multiple locations in the very near future.¹³ XCOR expects to use the spacecraft as a test bed to develop both a reusable orbital vehicle capable of transporting people to a space station soon¹⁴ and a vehicle that can make suborbital point-to-point flights by around 2030.¹⁵

As more and more corporations seek to enter the field of manned space flight, the attendant likelihood of an accident resulting in injury or death to passengers will almost certainly increase. If and when such an accident occurs, it is inevitable that aggrieved parties will seek remuneration from both the space flight entity that provided the transportation and the spacecraft’s manufacturers. At that point, a court will have to grapple with applying some very old doctrines to a very new field—including deciding whether the space flight entity is a common carrier, interpreting state and federal statutes regulating the private manned space flight industry, and ascertaining what duty of care the space flight entity must satisfy. The end result could be massive liability for a still nascent industry.

7. Pylas, *supra* note 6.

8. See SPACEX, <http://www.spacex.com> (last visited Oct. 12, 2013).

9. Dragon, SPACEX, <http://www.spacex.com/dragon> (last visited Oct. 12, 2013).

10. Candrea Thomas, *NASA’s Commercial Crew Program Progressing for Future of U.S. Human Spaceflight*, NASA (Aug. 3, 2012), <http://www.nasa.gov/exploration/commercial/crew/ccicap-announcement.html>.

11. See *id.*

12. Alex Davies, *The Return of Supersonic Flight Will Revolutionize Travel*, BUS. INSIDER (Sept. 27, 2012, 10:40 AM), <http://www.businessinsider.com/the-return-of-supersonic-flight-will-revolutionize-travel-2012-8>.

13. See Dave Klingler, *As Commercial Space Race Intensifies, SpaceX, Virgin Find They Have Company*, ARS TECHNICA (Aug. 25, 2012, 1:23 PM), <http://arstechnica.com/science/2012/08/as-commercial-space-race-intensifies-spacex-virgin-find-they-have-company>.

14. See *id.*

15. Davies, *supra* note 12.

Faced with these dangers, private space flight entities risk liability that could cause the industry to destruct before it finds steady footing. The liability risks are numerous and not limited to entities classified as common carriers. Even private carriers will likely face litigation regarding passengers who are injured or killed. The risks include difficulty finding insurance, costs of tort litigation, and product liability for parts manufacturers and service providers.¹⁶

One way to provide relief to companies is for the government to enact limitations on liability. In fact, some state legislatures have already done so.¹⁷ Some may question the necessity (or wisdom) of providing immunity from common carrier liability to such a small and currently niche field. Examining other dangerous and previously niche industries can increase these concerns. Courts applied common carrier liability to the railroad and aviation industries from the very beginning of their existence.¹⁸ Even with the added constraints of common carrier liability, however, both railroads and airlines flourished.

Nonetheless, the issues that manned space flight operators face remain a concern to many within the industry and beyond. Both wealthy investors and the federal government are pushing the development of commercial space flight. The federal government hopes that companies such as SpaceX will provide much of its low-earth-orbit transportation needs in the near future.¹⁹ Given the current economic climate, the federal and state governments have a vested interest in promoting the industry's growth to create needed jobs and ensure that the United States remains a leading developer of advanced technology.²⁰ Faced with a stagnant economy and increasing budget cuts, the federal government still believes the stakes are important enough to allow NASA to fund commercial programs through Space Act Agreements²¹ and to task a group within the Federal Aviation Administration ("FAA") with regulating and promoting the industry.²²

Given these high stakes, this Note argues that Congress should create a federal statutory regime to limit the space flight industry's exposure to tort

16. See discussion *infra* Section I.A.

17. See discussion *infra* Section II.B.

18. See, e.g., *Phila. & Reading R.R. Co. v. Derby*, 55 U.S. 468, 485–86 (1853); *Smith v. O'Donnell*, 12 P.2d 933, 934 (Cal. 1932).

19. See *Commercial Crew Program*, NASA, <http://commercialcrew.nasa.gov> (last visited Oct. 12, 2013).

20. See Shefali Luthra, *Going Private, Space Industry Eyes State's Open Spaces*, N.Y. TIMES, Aug. 10, 2012, at A15A, http://www.nytimes.com/2012/08/10/us/the-private-space-industry-eyes-texas-land.html?_r=0.

21. See NAT'L AERONAUTICS & SPACE ADMIN., NASAFACTS: COMMERCIAL CREW PROGRAM (2013) [hereinafter NASAFACTS], available at http://www.nasa.gov/pdf/608888main_CCP.pdf; *Commercial Crew & Cargo Program Office*, NASA, <http://www.nasa.gov/offices/c3po/home/index.html> (last visited Oct. 12, 2013).

22. *Office of Commercial Space Transportation: About the Office*, FED. AVIATION ADMIN., http://www.faa.gov/about/office_org/headquarters_offices/ast/about (last visited Oct. 12, 2013).

liability and, in particular, to prevent a court from deeming space flight entities common carriers. Part I briefly surveys a variety of liability issues threatening the space flight industry's viability. It then focuses its inquiry on a particularly significant source of liability—the law governing common carriers—and how a court may apply common carrier law to manned space flight operations. Part II examines the current liability regimes in place for rocket launches, how these regimes apply specifically to manned space flights, and how these regimes may affect the common carrier analysis. Part III considers the government's compelling interest in protecting the industry from tort liability and examines tort liability reform in analogous industries. Part III also suggests, in more detail than previous proposals by other commentators, that because of the increased risk of liability inherent in classification as a common carrier, the United States should establish a time-limited federal statutory regime waiving tort liability for ordinary negligence, regardless of whether the entity is actually a common carrier. Finally, Part III examines other possible tort reforms, such as an extension of the current federal third-party insurance and cross-waiver regime to space flight participants, but concludes that these alternatives are neither as efficient nor as effective as a federally mandated tort liability waiver.

I. LIABILITY ISSUES AND COMMON CARRIER STATUS

This Part examines common carrier liability and its application to manned space flight operators. Section I.A discusses some liability issues facing entities apart from common carrier status. Section I.B provides an overview of the development of common carrier law throughout the United States. Section I.C argues that, despite what other commentators have claimed in the past, courts may construe certain manned space flight entities as common carriers and subject them to higher levels of tort liability.

A. *Manned Space Flight Operators Face a Variety of Liability Issues*

Private operators looking to fly humans into space face a variety of tort liability issues.²³ Based on past flights, passengers are at a high risk of suffering injury or death in various ways. For example, in 1971, the entire three-man crew of Soyuz 11 was killed after a pressure seal of its spacecraft failed during reentry into the atmosphere after undocking from the Salyut I space station caused depressurization.²⁴ Additionally, in 1997, an unmanned Russian Progress resupply spacecraft collided with the Mir space station, causing one module to depressurize and the space station to spiral out of control

23. This is apart from and in addition to whether a space flight entity will be classified as a common carrier, which would subject the operators to a higher standard of care and prevent passengers from signing liability waivers. See discussion *infra* Sections I.B–C.

24. EDWARD CLINTON EZELL & LINDA NEUMAN EZELL, *THE PARTNERSHIP: A HISTORY OF THE APOLLO-SOYUZ TEST PROJECT* 147–51 (1978); Bernard Gwertzman, *Russians Confirm a Drop in Pressure Killed 3 Astronauts*, N.Y. TIMES, July 12, 1971, at 1, available at <http://select.nytimes.com/gst/abstract.html?res=F40E1FFC395C1A7493C0A8178CD85F458785F9>.

and almost deorbit.²⁵ Because the aggregated potential for tort liability threatens the viability of the space flight industry, it militates in favor of a new liability regime.²⁶

In general, tort costs present a risk to the small but growing industry that is still largely supported by wealthy individuals such as Sir Richard Branson at Virgin Galactic,²⁷ Elon Musk at SpaceX,²⁸ and Robert Bigelow at Bigelow Aerospace.²⁹ Introducing potentially large and devastating tort costs while the industry is trying to find its footing could scare off individuals who would otherwise be willing to place personal fortunes at risk to develop manned vehicles—especially given that tort costs grew three times as fast as the U.S. gross domestic product (“GDP”) between 1950 and 2003.³⁰ Moreover, compared to the development of previous cutting-edge industries such as airlines and railroads, the potential burden of tort costs is proportionally larger for commercial space flight.³¹ Given the industry’s immaturity and precarious nature, it is much harder to plan for and absorb tort costs while

25. CLAY MORGAN, SHUTTLE-MIR 109–11 (2001).

26. See discussion *infra* Part III.

27. See *Virgin Galactic Takes Ownership of Spaceship Co.*, L.A. BIZ (Oct. 8, 2012, 12:53 PM), <http://www.bizjournals.com/losangeles/news/2012/10/08/virgin-galactic-takes-ownership-of.html>.

28. See *Leadership*, SPACE X, <http://www.spacex.com/about/leadership> (last visited Oct. 12, 2013).

29. See *Introduction*, BIGELOW AEROSPACE, <http://www.bigelowaerospace.com/introduction.php> (last visited Oct. 12, 2013).

30. INT’L BAR ASS’N, EXCESSIVE PRIVATE LITIGATION: THE IMPACT ON BUSINESS AND CONSUMERS 1 (2008), available at <http://www.ibanet.org/Document/Default.aspx?DocumentUId=323EA4B5-105C-4AD5-9EBC-1F13CFE81979>.

31. While it is true that the railroads flourished despite their designation as common carriers, space flight entities face a different situation, which warrants temporarily limiting tort liability. Initially, companies developing railroads did not actually face heightened exposure to tort liability. In fact, in 1845 in Britain, only two passengers, out of the millions who travelled, received damages from a jury verdict for accidental injury. R.W. KOSTAL, *LAW AND ENGLISH RAILWAY CAPITALISM 1825–1875*, at 293 (1994). Whether because of a lack of resources or something else, people in the mid-nineteenth century were less likely than passengers in 2013 to sue over injuries and receive damages. It was not until later in the nineteenth century, when passenger railway travel exploded from approximately 174 million passengers in 1861 to 507 million passengers in 1875 in Britain alone, ROYAL COMMISSION ON RAILWAY ACCIDENTS, REPORT OF THE ROYAL COMMISSIONERS, 1877, H.C. 1637, at 17 (U.K.), available at <http://parlipapers.chadwyck.com/fullrec/fullrec.do?id=1877-053190&DurUrl=Yes>, that tort liability became a pressing concern for railroads. KOSTAL, *supra*, at 293–98, 304–05. With the increase in passenger travel, the railroads saw a corresponding increase in the willingness of injured passengers to file suit and of courts and juries to award damages. *Id.* The space flight industry faces a very different legal atmosphere than did the fledgling railroads and does not anticipate carrying anywhere close to as many passengers in the near future. Passengers will be travelling not merely for the purpose of transportation but for adventure and new, unique experiences. The railroads, by contrast, provided a network of industrialized travel across nations that would help connect people from one place to another. By the time railroads faced liability similar to that space flight operators will face, the industry had grown large enough to handle the exposure. To place the same level of liability on industries that have different growth prospects and motivations is not ideal or efficient.

taking the risks needed to develop new vehicles than it was for other industries, such as railroads.³²

Additionally, space flight entities may struggle to find insurance to cover tort liability at a reasonable cost. Currently, insurance is available to cover launches and operations of satellites in orbit.³³ In fact, as explained below, the FAA currently requires launch operators to obtain insurance to cover third-party damage for all launches, manned or unmanned.³⁴ It is unclear, however, how insurance companies will develop the necessary policies to cover space flight entities against liability from passengers who suffer onboard injuries.³⁵ Commentators, such as Paul Ordyna, suggest that it may be difficult for insurers to adequately cover the industry because it “is so new that insurers and underwriters know little about the potential risks and liabilities associated with the activity.”³⁶ Moreover, insurers are at a disadvantage because information about these risks is in the hands of the insured.³⁷

The industry also faces the major risk of product liability for contractors and subcontractors that provide products and services to launch operators.³⁸ Of the six states that have implemented tort liability immunity for space flight entities, one does not extend liability protection to manufacturers or service providers.³⁹ The lack of immunity for manufacturers and service providers could discourage them from participating in the field because they would risk shouldering the majority of liability. The general aviation industry exemplifies this possibility: the production of general aviation aircraft declined from 17,811 planes in 1978 to 899 planes in 1992, due in part to a large increase in litigation costs.⁴⁰ While these issues are serious, they are minor compared to the consequences of being deemed a common carrier.

B. *The Law Governing Common Carriers*

An entity is usually defined as a common carrier if it presents itself to the general public as a business willing to transport people or property for compensation.⁴¹ In contrast, a private carrier presents itself as willing to

32. See KOSTAL, *supra* note 31, at 2–5.

33. Pamela L. Meredith, *Space Insurance Law—With a Special Focus on Satellite Launch and In-Orbit Policies*, 21 AIR & SPACE LAW., no. 4, 2008, at 13, 13.

34. 51 U.S.C.A. § 50914(a)–(c) (West 2013); see *infra* Section II.A.

35. Meredith, *supra* note 33, at 13.

36. Paul Ordyna, *Insuring Human Space Flight: An Underwriter’s Dilemma*, 36 J. SPACE L. 231, 251 (2010).

37. *Id.*

38. Michael C. Mineiro, *Assessing the Risks: Tort Liability and Risk Management in the Event of a Commercial Human Space Flight Vehicle Accident*, 74 J. AIR L. & COM. 371, 397–98 (2009).

39. See CAL. CIV. CODE § 2210(d) (West Supp. 2013). For a more in-depth discussion of states’ tort immunity regimes, see discussion *infra* Section II.B.

40. See S. REP. NO. 103-202, at *1–2 (1993), available at 1993 WL 484770.

41. 13 C.J.S. *Carriers* § 2 (2005).

transport the public only on a case-by-case basis, through specific contracts, and under a particular set of circumstances.⁴² Common carriers are held to a much stricter standard of care than private carriers,⁴³ and they are also not allowed to enforce contractual waivers of liability.⁴⁴

Jackson v. Stancil laid out the bedrock three-factor test for common carrier status: whether the entity has “[a]n established place of business[,] [e]ngag[es] in the operation [of air transportation] as a regular business and not merely as a casual or occasional undertaking[, and has a] [r]egular schedule of charges.”⁴⁵ Some other jurisdictions, such as California—which has a long history of applying common carrier law to new forms of transportation—have employed this test.

For example, in *Gradus v. Hanson Aviation, Inc.*, the California Court of Appeal held that California follows the same criteria set forth in *Stancil*, and it added a fourth factor: whether the carrier advertises to the public at large.⁴⁶ In *Smith v. O'Donnell*, a case from 1932 when passenger air travel was still in its infancy, the California Supreme Court noted that “[i]f the craft be employed as a common carrier vehicle, it is not a reason for applying different rules of liability to say that it and the industry are new.”⁴⁷ The court found that the defendant, who operated a sightseeing flight, was a common carrier even though the flight took off from and landed at the same airport because the defendant both held himself out to the general public as willing to transport any person for compensation and had a set place of business.⁴⁸ Thus, the court established that it did not matter in determining common carrier status whether the transportation took passengers to and from distinct locations.⁴⁹

Courts also look at the purpose of the passenger transportation in determining whether an entity is a common carrier. Courts in multiple states have held that providing transportation as part of an adventure sport—such as transportation on an aircraft as part of skydiving or transportation on a raft as part of whitewater rafting—does not make an entity a common carrier because the transportation is incidental to the true purpose of the activity.⁵⁰ Entities operating other methods of transportation, including

42. *Id.* § 4.

43. *See id.* § 514.

44. *Id.* § 583.

45. 116 S.E.2d 817, 824 (N.C. 1960) (citations omitted). A common carrier does not have to operate on a set schedule—an air carrier operating only chartered flights may be a common carrier. *Id.*

46. 205 Cal. Rptr. 211, 216 (Ct. App. 1984).

47. 12 P.2d 933, 934 (Cal. 1932).

48. *O'Donnell*, 12 P.2d at 933–34.

49. *Id.*

50. *E.g.*, *Deutsch v. Chubb Grp. of Ins. Cos.*, No. 95-B-331, 1995 WL 584394, at *3 (D. Colo. Sept. 29, 1995) (“[A] white-water raft may convey persons from one place to another but it is not a ‘common carrier.’” Rather, the ‘carriage’ by raft and water is ‘merely incidental’ to the purpose of the trip.” (citation omitted)); *Jones v. Dressel*, 623 P.2d 370, 377 (Colo. 1981) (“Free Flight was not engaged in ‘commercial operations’ or acting as a common carrier

chairlifts⁵¹ and amusement park rides, however, are often deemed common carriers⁵² because they are open to the general public, have an established place of business, and advertise set prices.

Most jurisdictions hold that common carriers are liable under a negligence standard with an extremely high duty of care: “the highest degree of care commensurate with the practical operation of the business.”⁵³ Additionally, some jurisdictions, such as California, give a *res ipsa loquitur*

in connection with this skydiving flight. . . . Carriage by air was incidental to Free Flight’s principal business.”); *see also* *Malecha v. St. Croix Valley Skydiving Club, Inc.*, 392 N.W.2d 727, 731 (Minn. Ct. App. 1986) (“[T]he Skydiving Club’s services are not qualitatively the same kind as those provided by common carriers . . .”).

51. *E.g.*, *Squaw Valley Ski Corp. v. Superior Court*, 3 Cal. Rptr. 2d 897, 900 (Ct. App. 1992) (“Given the fact Squaw Valley indiscriminately offers its . . . chair lift to the public to carry skiers at a fixed rate from the bottom to the top of the . . . run, it logically comes within the . . . definition of a common carrier.”); *D’Amico v. Great Am. Recreation, Inc.*, 627 A.2d 1164, 1166 (N.J. Super. Ct. Law Div. 1992) (“A common carrier does not lose its status as such merely because the nature of its services is specialized. All members of the general public who possess the necessary equipment and expertise may avail themselves of the . . . chair lift.”); *Grauer v. State*, 192 N.Y.S.2d 647, 649 (App. Div. 1959) (“The Court below held that the State, in the operation of its lift, was a common carrier, and we see nothing objectionable in this finding.”). *But see* *Pessl v. Bridger Bowl*, 524 P.2d 1101, 1106–08 (Mont. 1974) (holding that a chairlift was not a common carrier as specified by statute).

52. *E.g.*, *Gomez v. Superior Court*, 113 P.3d 41, 47–48 (Cal. 2005) (“[O]ur conclusion that the operator of a roller coaster or similar amusement park ride can be a carrier of persons for reward is consistent with the authority holding that operators of ski lifts are common carriers, despite the fact that the skiers who ride such lifts are engaged in recreation.”); *O’Callaghan v. Dellwood Park Co.*, 89 N.E. 1005, 1007 (Ill. 1909) (holding that an amusement park is held to the same duty of care when operating a scenic railway as that of a common carrier). *But see, e.g.*, *Harlan v. Six Flags Over Ga., Inc.*, 297 S.E.2d 468, 469 (Ga. 1982) (holding that an amusement park ride is not a common carrier because transportation is incidental to the purpose of the ride); *Bregel v. Busch Entm’t Corp.*, 444 S.E.2d 718, 719 (Va. 1994) (“Busch Entertainment is not a common carrier because it does not, as a regular business, undertake for hire to transport persons from place to place.”).

53. *Publix Cab Co. v. Fessler*, 335 P.2d 865, 868 (Colo. 1959) (“[T]he slightest deviation from this [highest degree of care] constitutes negligence toward the passenger.”); *see also, e.g.*, CAL. CIV. CODE § 2100 (West 2010) (“A carrier of persons for reward must use the utmost care and diligence for their safe carriage, must provide everything necessary for that purpose, and must exercise to that end a reasonable degree of skill.”); *Jackson v. United Airlines, Inc.*, No. 3:08CV182, 2009 WL 1036068, at *10–11 (E.D. Va. 2009) (stating that Virginia law holds common carriers to the highest duty of care); *O’Donnell*, 12 P.2d at 935 (“[I]t was the duty of [the carrier] to ‘exercise the highest degree of care for the safety of his passenger[]’”); *Gradus v. Hanson Aviation, Inc.*, 205 Cal. Rptr. 211, 216 (Ct. App. 1984) (“A common carrier does not guarantee the safety of its passengers. The care . . . is the highest that reasonably can be exercised consistent with the mode of transportation used, and the practical operation of its business as a carrier.” (internal quotation marks omitted)); *Commodore Cruise Line, Ltd. v. Kormendi*, 344 So.2d 896, 897–98 (Fla. Dist. Ct. App. 1977) (“[U]nder Florida law, a contractual duty arises between a passenger and common carrier obligating the carrier to transport the passenger to his or her destination, exercising the highest degree of care and vigilance for the passenger’s safety.”); *Shamblee v. Va. Transit Co.*, 132 S.E.2d 712, 714 (Va. 1963) (“[A] common carrier is not an insurer of the safety of its passengers, but it does owe to them the highest degree of care for their safety.”); *Carlton v. Boudar*, 88 S.E. 174, 177 (Va. 1916) (holding that common carriers are held to a high degree of care as opposed to ordinary care). *But*

instruction establishing a rebuttable presumption or inference of the carrier's negligence.⁵⁴

Common carriers cannot protect themselves with passenger waivers of liability.⁵⁵ It would be nonsensical to allow an airline or space flight entity to simply opt out of the duty placed on common carriers. This is because such a liability waiver would allow a carrier to limit its liability by exploiting the power it has over a passenger, instead of giving a court the opportunity to examine whether a higher duty is necessary. If an entity's transportation of its customers is incidental to some other activity (such as skydiving), however, the waiver of liability is enforceable as long as it is not against public policy.⁵⁶ For the same reasons a court does not permit a liability waiver, common carriers likewise cannot rely on an assumption-of-risk defense.⁵⁷

see N.M. UNIF. JURY INSTRUCTIONS—CIVIL § 13-2108 (2013) (“Ordinary care under the circumstances is the proper standard of care in New Mexico . . .”). The development of common carrier liability during the rise of the railroads and other forms of mass transportation in the 1800s established the standard that common carriers were not strictly liable but were instead liable under a negligence standard with an extremely high duty of care. See, e.g., *Phila. & Reading R.R. Co. v. Derby*, 55 U.S. 468, 485–86 (1853); *Stokes v. Saltonsall*, 38 U.S. 181, 190 (1839); *McPadden v. N.Y. Cent. R.R. Co.*, 44 N.Y. 478, 478 (1871) (“Although railroad companies are bound to exercise the utmost care and vigilance for the safety of their passengers, they are not held to an absolute warranty that the passengers shall not be injured, rendering them liable in any event, in the absence of negligence.”); Robert J. Kaczorowski, *The Common-Law Background of Nineteenth-Century Tort Law*, 51 OHIO ST. L.J. 1127, 1157–69 (1990).

54. E.g., *Hardin v. San Jose City Lines, Inc.*, 260 P.2d 63, 65 (Cal. 1953) (“[A]n inference of negligence based on *res ipsa loquitur* arises in cases where a passenger on a common carrier is injured as the result of the operation of the vehicle and . . . the carrier is obliged to meet the inference by evidence sufficient to offset or balance it.”); *Gradus*, 205 Cal. Rptr. at 216, 220 (stating that California applies conditional *res ipsa loquitur* to common carriers and that common carriers are under a duty of the highest reasonable care); *Roberts v. Trans World Airlines*, 37 Cal. Rptr. 291, 295–96 (Ct. App. 1964) (stating that *res ipsa loquitur* applies to airlines).

55. “[L]imitations of liability in airline tickets issued by a common carrier have uniformly been held invalid.” *Jones v. Dressel*, 623 P.2d 370, 377 (Colo. 1981); see also *Curtiss-Wright Flying Serv., Inc. v. Glose*, 66 F.2d 710, 712–13 (3d Cir. 1933) (“[T]he policy of law is settled that common carriers, in dealing with passengers, cannot compel them to so release their legal liability for their own negligence.”); *Bernard v. U.S. Aircoach*, 117 F. Supp. 134, 138–39 (S.D. Cal. 1953) (“It is a basic principle of law that one cannot in advance of doing an act of negligence, limit his or its liability for the results which flow from the tort of negligence, nor prescribe conditions for recovery of damages which flow from acts of negligence, even though there be a contract of carriage by a common carrier.” (citations omitted)); *Conklin v. Canadian-Colonial Airways, Inc.*, 194 N.E. 692, 693–94 (N.Y. 1935) (holding that New York law prohibits a common carrier from limiting liability for injury or death).

56. See *Dressel*, 623 P.2d at 377–78 (holding that the exculpatory agreement was valid because skydiving operator was not a common carrier and the agreement was not against public policy); *Durrell v. Parachutes Are Fun, Inc.*, No. 85C-AU-82, 1987 Del. Super. LEXIS 1321, at *5–7 (Del. Super. Ct. Oct. 8, 1987) (stating that an exculpatory agreement between a skydiver and skydiving company was not against public policy under the law of the State of Maryland); *Malecha v. St. Croix Valley Skydiving Club, Inc.*, 392 N.W.2d 727, 731–32 (Minn. Ct. App. 1986) (holding that an exculpatory agreement between a skydiver and skydiving club was valid and not against public policy).

57. *Fox v. Trans World Airlines, Inc.*, 20 F.R.D. 565, 568 (E.D. Pa. 1957) (holding that the defense of assumption of risk is inapplicable to injuries to passengers when traveling on a

C. *Courts Will Construe Certain Manned Space Flight Entities as Common Carriers*

Whether any given space flight entity is a common carrier depends on the nature of the space flight involved, but it seems reasonably certain that at least suborbital operations would face common carrier liability. The more exotic suborbital operations that have been proposed, such as point-to-point transportation between cities by 2030,⁵⁸ are most straightforwardly common carriers. These operations seek to act like traditional air carriers by transporting passengers from one destination to another—just at a faster speed than current technology permits. Using the logic presented in *O'Donnell*, the simple fact that suborbital point-to-point service uses a new technology to transport passengers from city to city “is not a reason for applying different rules of liability.”⁵⁹ A court would most likely apply the framework from *Stancil* and *Gradus* and look at whether the space flight entity has a set place of business, is in the regular business of space travel, has set prices, and advertises.⁶⁰ Given that the point-to-point space flight services would seek to operate like normal airline services, there is a very high probability that the space flight entity would, like an airline entity, be deemed a common carrier. Even if it were providing chartered flights, it might still be a common carrier.⁶¹

A court will also likely deem other suborbital operations that begin within the next decade, such as suborbital tourist flights,⁶² common carriers. Such suborbital proposals appear to meet all the criteria of the *Stancil* test, namely, they are setting up businesses and setting standardized prices for their services.⁶³ For instance, Virgin Galactic advertises a guaranteed set price of \$200,000 on its website and even sells tickets through travel agents.⁶⁴ It also appears that Virgin Galactic admits the general public and does not administer a strict fitness test.⁶⁵ These facts suggest that a court should treat

common carrier); *Urban v. Frontier Air Lines*, 139 F. Supp. 288, 289 (D. Wyo. 1956) (“[Common carriers] should exercise the highest degree of care consistent with the practical operation of the plane and protection of its passengers from injury. It follows that the defense of assumption of risk is without merit.” (citation omitted)); *Lopez v. Resort Airlines, Inc.*, 18 F.R.D. 37, 39 (S.D.N.Y. 1955) (“In view of the high degree of care owed by a common carrier to its passengers there is no basis for the claim of assumption of the risk.” (footnote omitted)).

58. Davies, *supra* note 12.

59. *Smith v. O'Donnell*, 12 P.2d 933, 934 (Cal. 1932).

60. *Gradus v. Hanson Aviation, Inc.*, 205 Cal. Rptr. 211, 216 (Ct. App. 1984); *Jackson v. Stancil*, 116 S.E.2d 817, 824 (N.C. 1960).

61. *Stancil*, 116 S.E.2d at 824.

62. See *supra* notes 4–7 and accompanying text.

63. *Stancil*, 116 S.E.2d at 824; see also *Gradus*, 205 Cal. Rptr. at 216 (Ct. App. 1984).

64. *Booking*, VIRGIN GALACTIC, <http://www.virgingalactic.com/booking> (last visited Oct. 12, 2013).

65. See Richard Branson, *Stephen Hawking on Space*, VIRGIN (Jan. 16, 2012), <http://www.virgin.com/richard-branson/blog/stephen-hawking-on-space>. For instance, the company has already booked a seat for Stephen Hawking. *Id.* Even if the entity were to forbid certain individuals from buying a ticket because they lacked specialized skills or had health issues,

the entity as a common carrier.⁶⁶ This is true even though the suborbital flight would take off and land at the same location and would not provide point-to-point transportation. Sightseeing flights and amusement park scenic railways have been classified as common carriers in the past.⁶⁷ It is not an incredible leap of the imagination to view a suborbital flight as a particularly high sightseeing flight, especially since the entities offer these trips to the general public at fixed prices.

One of the stronger arguments for designating space flight operators as common carriers is that other industries, such as railroads, were deemed common carriers from their inception. During the heyday of the railroad industry, U.S. courts did not hesitate to designate railroads as common carriers.⁶⁸ Some states even went so far as to revoke judicial discretion on the issue and codify trains as common carriers.⁶⁹ In Britain, which had a similar approach to railway liability, railways asked for a relaxation of the duty of care they faced as common carriers.⁷⁰ British railway operators suffered from increased financial pressure as railway travel became more popular and the number of payouts to injured passengers grew.⁷¹ The British Parliament, however, rejected the railways' request for a reduced duty of care.⁷² The Royal Commission, which convened to examine railway accidents, decided not to limit the liability that railways faced for passenger injuries, as it felt that "the operation of the present law does not cripple the resources of the companies. . . . If . . . the change be demanded in order to lessen the amount of what is indirectly a penalty upon negligence, we do not consider that result desirable in itself."⁷³

As a common carrier, suborbital space flight entities will face a level of liability that could cause severe harm to a space flight entity after even a single accident, much greater than the degree of harm faced by newly formed railroads in the 1800s. A court will hold the entity to an extremely

courts could still find that the operator was a common carrier. In *D'Amico*, the court held that a ski lift was a common carrier even though specialized knowledge and a certain level of fitness was required to use the lift. *D'Amico v. Great Am. Recreation, Inc.*, 627 A.2d 1164, 1166 (N.J. Super. Ct. Law Div. 1992) ("A common carrier does not lose its status as such merely because the nature of its services is specialized. All members of the general public who possess the necessary equipment and expertise may avail themselves of the . . . chair lift.").

66. See *supra* notes 41–49 and accompanying text.

67. See *supra* notes 48–52 and accompanying text.

68. See, e.g., *Phila. & Reading R.R. Co. v. Derby*, 55 U.S. 468, 485–86 (1853); *Galena & Chi. Union R.R. Co. v. Yarwood*, 15 Ill. 468, 468–69 (1854); *McElroy v. Nashua & Lowell R.R. Corp.*, 58 Mass. 400, 400 (1849); *McPadden v. N.Y. Cent. R.R. Co.*, 44 N.Y. 478, 483 (1871); see also JAMES W. ELY, JR., *RAILROADS AND AMERICAN LAW* 219–21 (2001); Kaczorowski, *supra* note 53, at 1157–60.

69. GA. CODE § 2040 (1861); 1850 Fla. Laws 37, 42–43; ELY, *supra* note 68, at 181.

70. KOSTAL, *supra* note 31, at 306–13.

71. *Id.* at 293–98, 304–05.

72. ROYAL COMMISSION ON RAILWAY ACCIDENTS, *supra* note 31, at 5–36, 310–13.

73. *Id.* at 32.

high standard of care that may be almost impossible to meet given the riskiness of space flight. Additionally, entities may not even be able to cover this risk through insurance and certainly will not be able to require liability waivers.⁷⁴ The combination of all these issues makes it almost impossible for a space flight entity to survive an accident, and the fallout could destroy the entire industry.

The one subset of space flight operations that common carrier liability will likely not cover is orbital space flight.⁷⁵ The current expense of placing humans into orbit⁷⁶ suggests that passengers on orbital flights will continue to negotiate on an individual, contractual basis for the foreseeable future.⁷⁷ As a result, a court will most likely classify an orbital carrier as a contract or private carrier and subject it to ordinary negligence standards.⁷⁸ Other liability issues, however, still threaten orbital carriers. Given the lack of knowledge as to the specific risks of space flight, it will be hard for carriers to

74. A space flight entity requiring individuals on a private manned space flight to sign liability waivers has even appeared in popular culture:

HERMES: Okay, captain, this is just a standard legal release, protecting Planet Express from lawsuits in the event of the unforeseen.

LEELA: [reading] Death by airlock failure.

HERMES: MmmHmm.

LEELA: [reading] Death by brain parasite.

HERMES: Yah.

LEELA: [reading] Death by sonic diarrhea.

HERMES: Oh ho, you don't want that.

LEELA: Look, I don't know about any of your previous captains, but I intend to do as little dying as possible. [She puts the form on the desk and Hermes chuckles. He slides it back to her.]

HERMES: Sign the paper.

Futurama: The Series Has Landed (FOX television broadcast Apr. 4, 1999). The waiver that Leela must sign also illustrates one of the issues with the current, state-level immunity statutes that only cover the “inherent risks” of space flight. See *infra* note 115 and accompanying text. Although Hermes and Planet Express, Inc. are very familiar with the risks of intergalactic space flight due to their high level of experience, in 2013, as compared to the year 3000, the manned space flight industry is in its infancy and the risks may still be largely unknown.

75. See generally *supra* notes 8–11 and accompanying text.

76. Private flights to the ISS that are offered by Space Adventures on a Soyuz capsule currently cost \$50 million a seat. Jesse McKinley, *Out of This World!*, N.Y. TIMES, Sept. 9, 2012, at TR1, available at <http://www.nytimes.com/2012/09/09/travel/space-tourism-is-here-wealthy-adventurers-wanted.html?pagewanted=all>. NASA also recently signed a contract with the Russian space agency to transport twelve astronauts to the ISS for a total of \$753 million or \$62.75 million an astronaut. David Weaver & Josh Buck, *NASA Extends Crew Flight Contract with Russian Space Agency — Administrator Bolden Repeats Call for American-Made Commercial Alternative* (Mar. 14, 2011), http://www.nasa.gov/home/hqnews/2011/mar/HQ_C11-013_Soyuz_Contract.html.

77. See David Kravets, *Wannabe Tourist Wants \$21 Million Back over Scuttled Mission*, WIRED (Sept. 24, 2008), http://www.wired.com/science/space/news/2008/09/enomoto_lawsuit; see also *Enomoto v. Space Adventures, Ltd.*, 624 F. Supp. 2d 443 (E.D. Va. 2009).

78. See, e.g., *Smith v. O'Donnell*, 12 P.2d 933, 934 (Cal. 1932) (“The Supreme Court of that state determined that [the carrier] was not operating his craft as a common carrier, but as

predict what behavior a court will deem negligent. Other issues, such as a possible lack of available insurance, could also pose a threat to orbital carriers.

II. THE CURRENT LIABILITY REGIME

The tort liability regime in the United States for commercial space flight companies is currently divided across federal,⁷⁹ state,⁸⁰ and international⁸¹ jurisdictions. The legal regime is only forty-five years old, with the first treaty governing space law passed in 1967⁸² and the most recent state law passed in 2012.⁸³ Sections II.A and II.B examine the current space flight tort liability regimes at the federal and state levels, respectively.⁸⁴ Section II.C examines how these regimes would fail to shield space flight entities from common carrier liability.

A. Current Federal Space Flight Tort Liability Regime

The federal government has enacted a semi-comprehensive regime regulating private manned space launches in the United States through the Commercial Space Launch Amendments Act of 2004 (“CSLAA”). The CSLAA is the latest major, substantive addition to the line of statutes governing private space flight, which began with the Commercial Space Launch Act of 1984 (“CSLA”).⁸⁵ The CSLAA delineates the extent of the FAA’s authority to

a private carrier of passengers, basing its decision largely upon the grounds that the trips in the air were made by special arrangement, and that he did not and would not take all who applied.”); *Jackson v. Stancil*, 116 S.E.2d 817, 822–24 (N.C. 1960).

79. 51 U.S.C.A. §§ 50901–23 (West 2013); 14 C.F.R. §§ 400.1–460.53 (2013).

80. *E.g.*, CAL. CIV. CODE §§ 2210–12 (West Supp. 2013); COLO. REV. STAT. § 41-6-101 (2013); FLA. STAT. § 331.501 (2013); N.M. STAT. ANN. §§ 41-14-2 to -4 (West, Westlaw through Ch. 228 (end) of the 1st Reg. Sess. of the 51st Leg. (2013)); TEX. CIV. PRAC. & REM. CODE ANN. §§ 100A.001–.003 (West, Westlaw through end of the 2013 3d Called Sess. of the 83d Leg.); VA. CODE ANN. §§ 8.01-227.8 to .10 (2007 & Supp. 2013).

81. Convention on Registration of Objects Launched into Outer Space, art. VI, Jan. 14, 1975, 28 U.S.T. 695, 1023 U.N.T.S. 15; Convention on International Liability for Damage Caused by Space Objects, Mar. 29, 1972, 24 U.S.T. 2389, 961 U.N.T.S. 187; Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, art. V, Apr. 22, 1968, 19 U.S.T. 7570, 672 U.N.T.S. 119; Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, art. VII, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 [hereinafter *Outer Space Treaty*].

82. *Outer Space Treaty*, *supra* note 81.

83. Leonard David, *Private Space Travel Gets a Big Boost in California*, SPACE.COM (Sept. 21, 2012, 5:45 PM), <http://www.space.com/17720-private-spaceflight-liability-california-law.html>.

84. Because this Note focuses on the domestic issue of common carrier liability, it will omit a discussion of liability at an international level.

85. *See* 51 U.S.C.A. §§ 50901–23 (West 2013) (formerly codified at 49 U.S.C. §§ 70101–21 (2006)); Commercial Space Launch Amendments Act of 2004, Pub. L. No. 108-492, 118 Stat. 3974; Commercial Space Launch Act, Pub. L. No. 98-575, 98 Stat. 3055 (1984) (amended 2004); *see also, e.g.*, 51 U.S.C. § 50901 note (Supp. V 2011) (Historical and Revision

regulate manned space flight.⁸⁶ The CSLAA also gives the FAA authority to promote the safety of launch vehicles by requiring FAA-issued licenses and permits for launches and reentries.⁸⁷ While the licensing process applies to all launches, manned and unmanned, the FAA is prohibited from issuing regulations “governing the design or operation of a launch vehicle to protect the health and safety of crew and spaceflight participants” before October 1, 2015, unless an event occurs on a manned flight that “result[s] in a serious or fatal injury” or “pose[s] a high risk of causing a serious or fatal injury.”⁸⁸

The statute currently requires a licensee to obtain liability insurance or show financial responsibility for the “maximum probable loss from claims,” as determined by the FAA, for injuries to third parties and the U.S. government.⁸⁹ The term “third party” specifically excludes crew members and space flight participants, meaning that operators are not required to insure these individuals.⁹⁰ The third-party launch insurance must protect the licensee, the government, executive agencies, and all contractors, subcontractors, and customers from damage inflicted on third parties, such as individuals on the ground.⁹¹ Licensees are also required to sign reciprocal waivers of claims with the government, contractors, subcontractors, and customers stating that each party agrees to be personally responsible for any death, injury, or damage to its respective employees or property.⁹² The federal government also provides indemnification for all damages to third parties up to

Notes) (identifying the modern law’s origins in the CSLA). The Department of Transportation has delegated regulatory authority to the FAA. Commercial Space Transportation; Licensing Regulations, 68 Fed. Reg. 35,289 (June 13, 2003). There is some controversy over whether the federal government’s regulation establishes sole federal jurisdiction over tort claims relating to private space flight, but this question is beyond the scope of this Note. For an overview, see generally R. BENDER, *SPACE TRANSPORT LIABILITY* 97–125 (1995). Although the CSLAA and corresponding regulations govern many aspects of private space flight, this Section only examines the statutes and regulations that pertain to tort liability of flights, both manned and unmanned, and any other regulations that pertain to manned space flight in particular.

86. 150 CONG. REC. 24334 (2004) (statement of Rep. Dana Rohrabacher).

87. 51 U.S.C.A. §§ 50904–06 (West 2013).

88. *Id.* § 50905(c). The FAA has released a draft document outlining “established practices” concerning safety for human space flight, but this document does not delineate detailed safety requirements for space flight entities and does not provide draft regulations. FED. AVIATION ADMIN., *DRAFT ESTABLISHED PRACTICES FOR HUMAN SPACE FLIGHT OCCUPANT SAFETY WITH RATIONALE* (2013), available at http://www.faa.gov/about/office_org/headquarters_offices/ast/media/Draft_Established_Practices_for_HSF_Occupant_Safety_with_Rationale.pdf.

89. *Id.* § 50914(a)–(c). The insurance required cannot exceed \$500 million for third-party claims and \$100 million for government claims or, alternatively, “the maximum liability insurance available on the world market at reasonable cost” if it is less than the calculated “maximum probable loss.” *Id.* § 50914(a)(3).

90. *Id.* § 50902(21)(E). The failure to require insurance for these parties could leave the entities directly liable for any injuries, particularly if they are otherwise unable to find insurance.

91. 51 U.S.C.A. § 50914(a)(4).

92. *Id.* § 50914(b)(1)–(2).

\$1.5 billion above the maximum probable loss (as adjusted for inflation), as long as the loss was not due to “willful misconduct by the licensee.”⁹³

The finalized regulations for manned space flight, completed in 2006, also include specific disclosure and waiver requirements.⁹⁴ The FAA regulations require that, before entering into an agreement for a launch or receiving compensation, licensees must inform space flight participants, in an easily understood, written format, of all known hazards, the possible existence of unknown hazards, and the possibility that space flight could result in injury or death.⁹⁵ The operator must inform participants that the government has not certified the launch vehicle, and it must provide information on the safety record of *all* launch vehicles ever used in manned flights as well as the record of the operator’s specific launch vehicle.⁹⁶ Space flight participants must also be able to inquire orally about the dangers of space flight and must provide written, signed, and dated consent.⁹⁷ They are also required to sign a reciprocal waiver of claims with the United States.⁹⁸ Space flight operators must train space flight participants “on how to respond to emergency situations,”⁹⁹ but the regulations have not yet defined the scope of this required training.¹⁰⁰

Some members of Congress protested the limited authority given to the FAA, arguing that it created too large a risk of death or injury for space flight participants.¹⁰¹ Others felt, however, that the bill “[struck] a delicate balance between the need to give a new industry a chance to develop brand-new technology and the desire to provide enough regulation to protect the industry’s customers.”¹⁰² The bill gained wide support because it gave clear authority to the FAA to regulate manned space flight for the first time, protected third parties from harm, and set a clear timetable for when the FAA would be able to regulate safety aspects of manned launch vehicles.¹⁰³

93. *Id.* § 50915. In the event of an accident, the indemnification regime would not interact with state-level immunity for space flight participants, as the indemnification only applies to third parties and not to space flight participants. *Id.*

94. Human Space Flight Requirements, 14 C.F.R. pt. 460 (2013).

95. 14 C.F.R. § 460.45(a).

96. *Id.* § 460.45(b)–(d).

97. *Id.* § 460.45(f).

98. *Id.* § 460.49.

99. *Id.* § 460.51.

100. *See id.*; *see also* Human Space Flight Requirements for Crew and Space Flight Participants, 70 Fed. Reg. 77,262, 77,271 (Dec. 29, 1995) [hereinafter Human Space Flight NPRM] (containing similarly vague language in proposing rulemaking ahead of promulgation of current regulation). Only one case, *Martin Marietta Corp. v. International Telecommunications Satellite Organization*, has interpreted any provision of the CSLAA. 991 F.2d 94 (4th Cir. 1992) (amended 1993). The court held that Congress did not intend for the reciprocal waivers of claim to apply retroactively or to protect parties from liability for grossly negligent behavior. *Id.* at 100.

101. *E.g.*, 150 CONG. REC. 24,334 (2004) (statement of Rep. James Oberstar).

102. *E.g.*, *id.* at 24,335 (statement of Rep. Sherwood Boehlert).

103. *See id.*

B. Current State-Level Space Flight Tort Liability Regimes

The development of space flight liability statutes at the state level is a relatively recent phenomenon, with the first immunity statute passed by Virginia in 2007¹⁰⁴ and the latest passed by California in 2012.¹⁰⁵ The states that have passed or are considering space flight immunity statutes seek to attract, encourage the development of, and retain commercial space launch companies within their borders.¹⁰⁶ Six states have passed space flight immunity statutes.¹⁰⁷ All of these states require the space flight entity operating the launch to provide a warning statement to space flight participants in addition to the one required by federal law.¹⁰⁸ All of these states also strip liability protection from any space flight entity that fails to comply with the statutory warning requirements.¹⁰⁹

While the six state immunity statutes are similar in many ways, it is worth reviewing some key differences in the legal protections each statute provides to the commercial space transportation industry. A majority of the six states that have passed space flight immunity statutes—Florida, Colorado, Texas, Virginia, and New Mexico—define a space flight entity that is entitled to liability protection as any entity that holds a license or authorization from the FAA to conduct or participate in manned space flight or any supplier of parts or services used by an entity subject to FAA licensing.¹¹⁰ Texas additionally specifies that the protection applies to officers, owners,

104. VA. CODE ANN. §§ 8.01-227.8 to .10 (2007 & Supp. 2013); Paul Alp, *Limitations on Liability as to Space Tourists*, ABA TORT TRIAL & INS. PRAC. COMMITTEE NEWS, Summer 2011, at 1, 10, available at <http://www.crowell.com/files/2011-Limitations-On-Liability-As-To-Space-Tourists.pdf>.

105. CAL. CIV. CODE §§ 2210–12 (West Supp. 2013); David, *supra* note 83.

106. THE PROF'L STAFF OF THE FLA. JUDICIARY COMM., FLORIDA SENATE BILL ANALYSIS AND FISCAL IMPACT STATEMENT, Comm. Substitute for S.B. 2438, 2008 Reg. Sess., at 1–3 (2008), available at <http://www.myfloridahouse.gov/sections/Documents/loaddoc.aspx?FileName=2008s2438.ju.doc&DocumentType=Analysis&BillNumber=2438&Session=2008>; Alp, *supra* note 104, at 10; P.J. Blount, *If You Legislate It, They Will Come: Using Incentive-Based Legislation to Attract the Commercial Space Industry*, 22 AIR & SPACE LAW., no. 3, 2009, at 19, 21; David, *supra* note 83.

107. CAL. CIV. CODE §§ 2210–12; COLO. REV. STAT. § 41-6-101 (2013); FLA. STAT. § 331.501 (2013); N.M. STAT. ANN. §§ 41-14-2 to -4 (West, Westlaw through Ch. 228 (end) of the 1st Reg. Sess. of the 51st Leg. (2013)); TEX. CIV. PRAC. & REM. CODE ANN. §§ 100A.001–.003 (West, Westlaw through end of the 2013 3d Called Sess. of the 83d Leg.); VA. CODE ANN. §§ 8.01-227.8 to .10.

108. CAL. CIV. CODE § 2211(a); COLO. REV. STAT. § 41-6-101(3)(a) to (b); FLA. STAT. § 331.501(3)(a)–(b); N.M. STAT. ANN. § 41-14-4(A); TEX. CIV. PRAC. & REM. CODE ANN. § 100A.003; VA. CODE ANN. § 8.01-227.10(A) to (B).

109. CAL. CIV. CODE § 2211(b); COLO. REV. STAT. § 41-6-101(3)(c); FLA. STAT. § 331.501(3)(c); N.M. STAT. ANN. § 41-14-4(B); TEX. CIV. PRAC. & REM. CODE ANN. § 100A.002; VA. CODE ANN. § 8.01-227.10(C).

110. COLO. REV. STAT. §§ 41-6-101(1) to (2)(a); FLA. STAT. § 331.501(1)(c); N.M. STAT. ANN. §§ 41-14-2(J), 41-14-3(A); TEX. CIV. PRAC. & REM. CODE ANN. § 100A.001(4); VA. CODE ANN. § 8.01-227.8.

and employees of a space flight entity, as well as to spacecraft and part manufacturers. Texas also denies plaintiffs the ability to seek injunctive relief.¹¹¹ California does not extend immunity to spacecraft or parts manufacturers and specifically denies immunity for product defects.¹¹² New Mexico has also recently passed legislation to extend protection to spacecraft and parts manufacturers.¹¹³ The New Mexico statute denies immunity to any space flight entity that does not acquire at least \$1 million in insurance covering all space flight activities.¹¹⁴

States also vary in the level of immunity they provide to the designated space flight entity. Five of the six states that provide immunity—California, Florida, Colorado, New Mexico, and Virginia—provide immunity for death or injuries that result from “inherent risks” or simply “risks” associated with space flight activities.¹¹⁵ Virginia and California define injury to specifically include emotional injury and property damage as well, as long as these harms still result from an “inherent risk.”¹¹⁶ Texas, on the other hand, provides blanket immunity for the death of or any injury to a space flight participant, including emotional injury, damage to property, or any other loss, regardless of whether it is an “inherent risk” or not.¹¹⁷ Texas also specifically notes that an agreement limiting liability between a participant and an entity “is effective and enforceable and is not unconscionable or against public policy.”¹¹⁸

All states, however, deny immunity for injuries caused by grossly negligent behavior, willful or wanton disregard, or intentional misconduct.¹¹⁹ Florida, Colorado, and California also remove liability protection if the space flight entity knew or reasonably should have known of a dangerous condition that caused injury.¹²⁰ Finally, multiple states have enacted expiration dates for their immunity statutes. Florida and Virginia originally

111. TEX. CIV. PRAC. & REM. CODE ANN. §§ 100A.001(4), 100A.002(c).

112. CAL. CIV. CODE §§ 2210(d), 2212(e).

113. N.M. STAT. ANN. §§ 41-14-2(J), 41-14-3(A).

114. *Id.* § 41-14-3(C).

115. CAL. CIV. CODE § 2212(b); COLO. REV. STAT. § 41-6-101(1) to (2)(a) (2013); FLA. STAT. § 331.501(2)(a); N.M. STAT. ANN. § 41-14-3; VA. CODE ANN. § 8.01-227.9(A).

116. CAL. CIV. CODE § 2210(b); VA. CODE ANN. § 8.01-227.8.

117. TEX. CIV. PRAC. & REM. CODE ANN. § 100A.001(6) (definition); *id.* § 100A.002 (limitation on liability).

118. *Id.* § 100A.004.

119. CAL. CIV. CODE § 2212; COLO. REV. STAT. § 41-6-101(2)(b); FLA. STAT. § 331.501(2)(b); N.M. STAT. ANN. § 41-14-3; TEX. CIV. PRAC. & REM. CODE ANN. § 100A.002(b); VA. CODE ANN. § 8.01-227.9(B).

120. CAL. CIV. CODE § 2212; COLO. REV. STAT. § 41-6-101; FLA. STAT. § 331.501(2)(b).

included sunset provisions¹²¹ but removed them before they took effect.¹²² In New Mexico, the statutory immunity will be automatically repealed on July 1, 2018.¹²³

Altogether, the split between federal- and state-level regulation of the commercial space flight industry presents a fractured and confusing landscape.

C. *Despite These Regulations, Space Flight Entities Would Be Subject to Common Carrier Liability*

Due to these regulations, most commentators on space flight tort liability have ignored or rejected the idea of deeming a space flight operator a common carrier. Michael Mineiro, for example, dismisses the issue as one that will not matter for some time and argues that a court will consider the transportation incidental to the activity of visiting space.¹²⁴ Since incidental transportation providers are not common carriers, they are therefore subject to a lower duty of care and can generally enter into exculpatory agreements.¹²⁵ Some scholars argue that a court would be unlikely to consider an orbital space flight entity a common carrier in light of the FAA's official interpretation of the CSLAA. The FAA notes that Congress used "space flight participant" rather than "space flight passenger" in the CSLAA, thereby "signif[y]ing] that someone on board a launch vehicle or reentry vehicle is not a typical passenger with typical expectations of transport, but someone going on an adventure ride."¹²⁶ One could make a similar argument against common carrier status under state laws as well because all the states that have implemented tort immunity statutes also use the term "space flight participant" or simply "participant."¹²⁷

121. Comm. Substitute for S.B. 2438, 2008 Leg., Reg. Sess., 2008 Fla. Laws ch. 180, available at http://laws.flrules.org/files/Ch_2008-180.pdf; VA. CODE ANN. §§ 8.01-227.8 to .10 (2007); H.B. 3184, 2007 Gen. Assemb., Reg. Sess. (Va. 2007).

122. S.B. 652, 2011 Leg., Reg. Sess., 2011 Fla. Laws ch. 153, available at <http://laws.flrules.org/2011/153>; VA. CODE ANN. §§ 8.01-227.8 to .10 (Supp. 2013); H.B. 21, 2010 Gen. Assemb., Reg. Sess. (Va. 2010); S.B. 189, 2010 Gen. Assemb., Reg. Sess. (Va. 2010).

123. S.B. 9, 49th Leg., 2d Reg. Sess. (N.M. 2010).

124. Mineiro, *supra* note 38, at 377–78.

125. See, e.g., *supra* note 56 and accompanying text.

126. Human Space Flight NPRM, *supra* note 100, at 77, 269–70; see also Tracey Knutson, *What Is "Informed Consent" for Space-Flight Participants in the Soon-to-Launch Space Tourism Industry?*, 33 J. SPACE L. 105, 109–10 (2007) [hereinafter Knutson, *Informed Consent*]; Letter from Tracey Knutson, Knutson & Assocs., to Fed. Aviation Admin., Comments Regarding Docket Number FAA-2005-23449 (Feb. 27, 2006) (on file with the FAA), available at <http://www.regulations.gov/contentStreamer?objectId=0900006480d9ce0d&disposition=attachment&contentType=pdf>.

127. E.g., CAL. CIV. CODE § 2210(a) (West Supp. 2013); COLO. REV. STAT. § 41-6-101(1)(c) (2013); FLA. STAT. § 331.501(1)(a) (2013); N.M. STAT. ANN. § 41-14-2(D) (West, Westlaw through Ch. 228 (end) of the 1st Reg. Sess. of the 51st Leg. (2013)); TEX. CIV. PRAC. & REM. CODE ANN. § 100A.001(5) (West, Westlaw end of the 2013 3d Called Sess. of the 83d Leg.); VA. CODE ANN. § 8.01-227.8 (2007 & Supp. 2013); see also 51 U.S.C.A. § 50905(17) (West 2013).

But this argument is not determinative. The CSLAA allows the FAA to regulate safety for human space flight on a case-by-case basis until either October 1, 2015, or until there is an accident that poses a high risk of or causes injury or death, but this is not the end of the story.¹²⁸ The federal statutory regime also specifically allows states to implement more stringent regulations as long as they remain consistent with the federal regime.¹²⁹ Because states are allowed to impose stricter regulations, a state court would likely be within its power to define a space flight entity as a common carrier. Furthermore, Congress has also proposed replacing the phrase “space flight participant” with “passenger,”¹³⁰ which would weaken the argument against common carrier classification.

The states’ statutory language can also affect common carrier classification. At the state level, five of the six states that have implemented space flight immunity statutes only provide liability protection for “inherent risks” or “risks” of space flight activities.¹³¹ The term “inherent risk,” as defined in cases concerning treatments in the medical field and sports law, would not cover simple negligence or gross negligence on the part of the space flight entity.¹³² Inherent risks do not include the risk of negligence, as there is an assumption that an inherent risk is something that occurs regardless of whether the actor is negligent.¹³³ Given that the space flight industry is brand new, it is hard to predict what a court would consider an inherent risk of space travel as opposed to negligent behavior on the part of the entity. This is true especially because the FAA currently enjoys little latitude to promulgate regulations. If a court determines that an accident was not an inherent risk and then has to consider whether the space flight entity was negligent, the court could hold the entity to an incredibly high duty of care if it also determines that the entity is a common carrier.

It is also unclear how a court will interpret the FAA’s requirement that entities disclose all known hazards or how that regulation will interact with state-level immunity statutes.¹³⁴ The risk of a court holding that a manned space flight operator is a common carrier drives up the liability risk for the industry tremendously and could cause the industry to crumble prematurely, particularly because the specific hazards that passengers face are often unknown.

128. 51 U.S.C.A. § 50905(c) (West 2013).

129. *Id.* § 50919(c).

130. FAA Reauthorization and Reform Act of 2011, H.R. 658, 112th Cong. § 1001 (as introduced in the House of Representatives, Feb. 11, 2011), available at <http://www.gpo.gov/fdsys/pkg/BILLS-112hr658ih/pdf/BILLS-112hr658ih.pdf>.

131. See *supra* notes 115–118 and accompanying text.

132. See Knutson, *Informed Consent*, *supra* note 126, at 109–10; see also 1 DAN B. DOBBS ET AL., *THE LAW OF TORTS* § 240 (2d ed. 2011).

133. 1 DOBBS ET AL., *supra* note 132, at § 240.

134. See 14 C.F.R. § 460.45(a) (2013).

III. LIABILITY REFORM

This final Part explores how designation as a common carrier may affect manned space flight entities and proposes possible solutions to prevent tort liability issues from irreversibly harming the industry. Section III.A argues that the federal government has an interest in preventing the collapse of the manned space flight industry. Section III.B examines how the federal government instituted tort liability reform for the general aviation industry and argues that those methods would not be as effective in the space flight context. Section III.C proposes that the most effective and efficient solution is to implement a time-limited tort liability immunity statute at the federal level.

A. Federal Governmental Interest in Preventing Industry Collapse

The federal and various state governments have a vested interest in ensuring the survival of commercial space flight operators—as do the operators themselves; they also have a lot of money on the line. Several states have spent large sums of money to build infrastructure, such as spaceports, to support the industry and attract business.¹³⁵ They have also provided incentives, such as tax rebates, to launch operators.¹³⁶ Even more importantly, NASA's continuing existence depends to some extent on the success of commercial space flight operators. NASA is pouring tons of money into the coffers of commercial space flight operators to “develop space transportation systems that can safely launch astronauts to the International Space Station (ISS) and other low-Earth orbit destinations.”¹³⁷ NASA has spent over \$1.4 billion to date developing these capabilities and, without them, would rely almost entirely on foreign powers to access low-earth orbit.¹³⁸ While the federal government is interested in orbital space flight, it is also unlikely that private orbital proposals such as Bigelow Aerospace's private space stations will become a reality in the near future because it will be impossible to reach the stations without governmental help and protection.¹³⁹

The federal government is also interested in suborbital space flight in part because it wants to decrease the price of access to space. Suborbital space transportation can provide a new and much cheaper way of accessing outer space, even if it is for a much shorter period of time than orbital space

135. E.g., Ann Schrader, *Stars Were Aligned for New Mexico's Spaceport*, DENVER POST (June 27, 2010, 1:00 AM), http://www.denverpost.com/business/ci_15382596.

136. FED. AVIATION ADMIN., STATE SUPPORT FOR COMMERCIAL SPACE ACTIVITIES 4 (n.d.), available at http://www.faa.gov/about/office_org/headquarters_offices/ast/media/State%20Support%20for%20Commercial%20Space%20Activities.pdf.

137. See NASAFACTS, *supra* note 21, at 1–2.

138. *Id.* at 2; Dan Leone, *Commercial Crew Budget Shortfall Likely to Lengthen NASA's Reliance on Russian Soyuz*, SPACENEWS (Nov. 28, 2011), <http://www.spacenews.com/article/commercial-crew-budget-shortfall-likely-lengthen-nasas-reliance-russian-soyuz>.

139. See Irene Klotz, *Space Taxi Delays Spur Bigelow Aerospace Layoffs*, REUTERS, Oct. 20, 2011, available at <http://www.reuters.com/article/2011/10/20/uk-space-business-bigelow-idUSLNE79J01T20111020>.

transportation. A study by the FAA and the Tauri Group forecasts that sub-orbital revenue will total around \$600 million over the next ten years but could optimistically reach as high as \$1.6 billion.¹⁴⁰ While the report forecasts that individuals will account for the majority of the demand for seats on suborbital flights, it expects that governmental sources looking for new and cheaper ways to access space will constitute around 10 percent of the demand.¹⁴¹ Additionally, early participants in suborbital space flight could “significantly—and rapidly—increase demand,” which might drive down the price of flights even further.¹⁴² To lower costs and increase demand, the government must support this sector of the industry.

Additionally, current suborbital vehicles could hasten the development of suborbital point-to-point transportation. Suborbital point-to-point transportation is generally viewed as a way to transport wealthy passengers and high-value cargo long distances in extremely short periods of time.¹⁴³ NASA and the Department of Defense, however, also see it as a way of moving troops and other cargo around the globe.¹⁴⁴ Although these services are not expected to begin until 2020 at the earliest,¹⁴⁵ corporations and the United States will not be able to take advantage of the possible future benefits of point-to-point transportation if they do not develop suborbital vehicles now.

B. *Previously Instituted Methods of Tort Liability Protection Would Not Be as Effective in the Manned Space Flight Context*

Given the government’s interest in protecting the nascent space flight industry, it might seem obvious to apply a previously used liability shield in the space flight context. For example, product liability caused a massive drop in general aviation aircraft production and had a disproportionate effect on general aviation manufacturers. This was partly due to the fact that the aircraft were so well built that the service life surpassed expectations and resulted in continued liability long after it was expected to cease.¹⁴⁶ In response, the federal government enacted the General Aviation Revitalization Act of 1994 (“GARA”) “[t]o amend the Federal Aviation Act of 1958 to establish time limitations on certain civil actions against aircraft manufacturers.”¹⁴⁷ As President Clinton stated upon signing GARA, the Act was “intended to give manufacturers of general aviation aircraft and related

140. THE TAURI GRP., SUBORBITAL REUSABLE VEHICLES: A 10-YEAR FORECAST OF MARKET DEMAND 7 (2012), available at http://www.taurigroup.com/files/Suborbital_Reusable_Vehicles_A_10_Year_Forecast_of_Market_Demand.pdf.

141. See *id.* at 6, 40–41.

142. See *id.* at 88.

143. *Id.* at 82.

144. *Id.*

145. Davies, *supra* note 12.

146. S. REP. NO. 103-202 at *3 (1994), available at 1993 WL 484770.

147. Pub. L. No. 103-298, 108 Stat. 1552, 1552–54 (codified as amended at 49 U.S.C. § 40101 note (2006) (General Aviation Revitalization Act of 1994)).

component parts some protection from lawsuits alleging defective design or manufacture after an aircraft has established a lengthy record of operational safety.”¹⁴⁸ GARA provided tort liability protection to aircraft and parts manufacturers by establishing an eighteen-year statute of repose, prohibiting “civil action[s] for damages for death or injury to persons or damage to property” caused by an accident in an aircraft that holds fewer than twenty passengers and is not “engaged in scheduled passenger-carrying operations . . . at the time of the accident,”¹⁴⁹ with some exceptions.¹⁵⁰ The Act superseded any conflicting state laws permitting a civil action for damages.¹⁵¹

GARA, however, is better suited for mature industries like general aviation as opposed to an immature and developing industry like commercial manned space flight. A statute of repose is useful in the general aviation industry due to the longevity of the products, which pose a liability risk for an extended period. Implementing a statute of repose for general aviation aircraft helped the industry better anticipate how long it would have to face liability when developing a product that leaves the hands of the product developer and is operated by the consumer. For space flight entities, on the other hand, the window in which they face the risk of causing injury or death to each individual space flight participant is short, and the entity is in control of the product at all times. Commercial space flight operators do not have to worry about the possibility of liability hanging over their heads for years, but they instead face the possibility of a single devastating claim while they are still developing. A statute of repose solves an issue for industries that have a mature product that they expect to last a long time rather than an industry that is developing a new, dangerous, and risky product.

Another possible solution—extending the current CSLAA launch indemnification system to include a waiver of claims between space flight participants and a space flight entity¹⁵²—while tempting, would not be as efficient as a time-limited tort liability immunity statute. Extending the launch indemnification system to space flight participants would require participants to sign waivers with all parties to a manned launch to waive any personal claims for injury or death.¹⁵³ Although the cross-waiver system would achieve the same result as a federal tort immunity statute, the former method would be much more complex and time consuming.

148. Statement on Signing the General Aviation Revitalization Act of 1994, 30 WEEKLY COMP. PRES. DOC. 1678, 1678 (Aug. 17, 1994).

149. 49 U.S.C. § 40101 note (General Aviation Revitalization Act of 1994); *see also* Alter v. Bell Helicopter Textron, Inc., 944 F. Supp. 531, 542 (S.D. Tex. 1996) (granting summary judgment to the defendant based on the fact that the purpose of GARA was to establish a statute of repose that protected general aviation manufacturers from long-term liability); S. REP. NO. 103-202, at *3, *available at* 1993 WL 484770 (“The reported bill responds to this problem by enacting a statute of repose for aircraft and component manufacturers.”).

150. 49 U.S.C. § 40101 note (General Aviation Revitalization Act of 1994).

151. *Id.*

152. 51 U.S.C.A. § 50914(b)(1)–(2) (West 2013); 14 C.F.R. § 460.49 (2013).

153. 51 U.S.C.A. § 50914(b)(1)–(2); 14 C.F.R. § 460.49.

The current launch indemnification system, as applied to current third-party liability, makes sense, as it involves contracting between large, sophisticated entities that are accustomed to entering into contracts of this nature every time they launch a satellite. Additionally, satellite launches take a long time to plan and happen relatively infrequently, making the signing of waivers a relatively simple part of the process.¹⁵⁴ For space flight participants, on the other hand, the process would prove much more difficult to manage, as the expected number of launches is much higher and the parties would not be accustomed to signing complex waivers. An extended cross-waiver would be difficult to implement because space flight participants would need to sign waivers with all the component manufacturers as well as the space flight entity. Finally, waivers would be open to a greater number of case-by-case legal challenges about what had been waived. Regardless of the method chosen to protect the industry, liability generally poses a great threat to the growth and continued existence of manned space flight entities.

C. *Federal Legislation Is the Most Efficient Solution to Limit Tort Liability*

Given the real possibility that a court may classify a space flight entity as a common carrier, Congress should adopt legislation that states that space flight entities are not common carriers and that limits liability for all such entities, even private carriers, at the federal level. Unlike the alternatives discussed in Section III.B, this proposed legislation would provide the greatest possible protection for the nascent space flight industry. Designating a space flight entity as a common carrier could subject the entity to a duty of care that may be almost impossible to meet due to the dangerous nature of space travel. Authors such as Michael Mineiro propose “a unified tort liability regime, on both a national and international level,” instead of allowing tort liability to rest on a shaky foundation split between the states, federal government, and international community.¹⁵⁵ What Mineiro and others fail to do, however, is explain what this regime would look like in either the short or long term. The simplest and most effective reform would be a national tort liability immunity statute modeled after one of the immunity statutes adopted at the state level.¹⁵⁶ The liability immunity would not be permanent. Rather, the legislation would be time limited to allow the industry to explore

154. For example, less than fifty satellites were launched worldwide in 2012 and less than fifty were planned or completed for 2013 when this Note was in production. *Completed Satellite Launches in 2012*, SATLAUNCH.NET, <http://www.satlaunch.net/p/launches-in-2012.html> (last updated Dec. 12, 2012); *Completed Satellite Launches 2013*, SATLAUNCH.NET, <http://www.satlaunch.net/p/launches-in-2013.html> (last updated Sept. 30, 2013); *Planned Satellite Launches 2013*, SATLAUNCH.NET, <http://www.satlaunch.net/p/launch-schedule-2013.html> (last updated Oct. 8, 2013).

155. Mineiro, *supra* note 38, at 401.

156. CAL. CIV. CODE §§ 2210–12 (West Supp. 2013); COLO. REV. STAT. § 41-6-101 (2013); FLA. STAT. § 331.501 (2013); N.M. STAT. ANN. §§ 41-14-2 to -4 (West, Westlaw through Ch. 228 (end) of the 1st Reg. Sess. of the 51st Leg. (2013)); TEX. CIV. PRAC. & REM. CODE ANN. §§ 100A.001–.003 (West, Westlaw through end of the 2013 3d Called Sess. of the 83d Leg.); VA. CODE ANN. §§ 8.01-227.8 to .10 (2007 & Supp. 2013).

new technologies without the risk of potentially devastating liability that would limit development before space flight has developed into true mass transportation. Since the FAA already has national regulatory power over commercial human space flight activities within the United States,¹⁵⁷ it would simplify, consolidate, and extend the current regulatory scheme if all regulation of tort liability occurred at a federal rather than state level.

A federal tort liability immunity statute would ideally correct some of the problems with the state statutes as well. It should remove the reference to “inherent risks” of space flight¹⁵⁸ and instead provide immunity for injuries or death to space flight participants for anything up to and including negligent conduct by the space flight entity. The federal statute should also specifically state that the space flight entity is not to be considered a common carrier for tort liability purposes in order to supersede explicitly any contrary argument at the state level. The federal statute should allow recovery for grossly negligent or reckless behavior and intentional misconduct. The statute would thus provide a level of protection similar to that currently provided by the Texas statute.¹⁵⁹

The federal statute should also provide an expiration date for this immunity, as states have done,¹⁶⁰ to ensure that the immunity is lifted once the industry is on secure footing. Rather than setting a fixed sunset date, it may make more sense to base the expiration of immunity on the occurrence of a particular event, such as after a certain number of commercial space flights—either total or per year—or when ticket prices drop below a set level. This would avoid the difficulty of predicting *ex ante* how long it will take for the space flight industry to mature. The expiration could also hinge on the method of space flight rather than time. These measures may better indicate the maturity of the industry than a strict time limit would. Implementing these reforms at a federal level would reshape the currently fractured space flight tort liability regime into a more streamlined and coherent system.

CONCLUSION

The United States stands to reap great benefits from the development of a private manned space flight capability. These benefits, however, will not be realized unless the industry is allowed to take risks and grow. Given the likelihood of crippling liability from passengers injured or killed in the event of an accident, especially if a court deems the entity a common carrier, the industry needs support at the national level. It is imperative that the government erect a time-limited immunity shield to federal tort liability to effectively protect and support the industry until it is on a solid foundation.

157. See *supra* notes 86–88 and accompanying text.

158. See *supra* note 115 and accompanying text.

159. TEX. CIV. PRAC. & REM. CODE ANN. § 100A.002.

160. See *supra* notes 122–123 and accompanying text.