TORT REFORM & GARA: IS REPOSE INCOMPATIBLE WITH SAFETY?

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> "When once you have tasted flight, you will forever walk the earth with your eyes turned skyward, for there you have been and there you will always long to return."[1]

I. INTRODUCTION

Tort reform was a hot topic during the 2004 Presidential campaign, and continues to be a focus of debate today.[2] Unfortunately, the debate often revolves around predictions of impending doom, with each side attempting to demonize its opponents.[3] Passage of the General Aviation Revitalization Act of 1994 (GARA or the Act) marked an exception to the general mode of debate. Large majorities from both political parties agreed industry-specific issues existed that could be addressed through modest measures.[4] GARA created a statute of repose for one segment of the aviation industry and limited perceived negative impacts by providing exceptions to ensure its fairness. The history of GARA's passage and the results to date provide a model for evaluating where reform is appropriate, and for providing reasonable limits to the extent of reform.

The General Aviation Revitalization Act of 1994 established an eighteen-year statute of repose for lawsuits against general aviation aircraft and parts manufacturers.[5] General aviation aircraft are civilian aircraft carrying fewer than twenty passengers and not used in scheduled passenger-carrying service.[6] Approximately seventy percent of general aviation aircraft are small, single-

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1. LEONARDO DA VINCI, CODEX ATLANTICUS (circa 1490).
2. *Get Tort Reform Right*, WASH. POST, Jan. 16, 2005, at A16.
3. *See id.*
4. 140 CONG. REC. S3006, S3009 (1994); *id.* at H5005 (1994).
5. General Aviation Revitalization Act of 1994 (GARA), Pub. L. No. 103-298, § 3(3), 108 Stat. 1552, 1553.
6. *Id.* § 2(c); *see* 14 C.F.R. § 119.1 (2004).

engine, piston-powered aircraft.[7] GARA was passed primarily in response to concern that a long tail of liability was driving the industry out of existence.[8] It was introduced in the U.S. House of Representatives with 219 cosponsors.[9] On March 16, 1994, GARA passed the Senate in a roll call vote by a ninety-one to eight majority.[10]

This Note examines the history of the general aviation industry leading up to passage of GARA. It analyzes GARA's operation and exceptions, the rationale supporting its passage, the case against passage, and how a large majority of Congress came to support the bill. Next this Note provides a general overview of tort negligence, products liability, and design defect theories. Lastly, it evaluates the record of the general aviation industry since passage of GARA. The evaluation focuses on how the predictions of supporters and detractors have been borne out, especially in terms of revitalizing the industry and the industry's safety record, and how these results contribute to the tort reform debate.

II. THE DECLINE OF THE GENERAL AVIATION INDUSTRY

In the decade and a half leading up to GARA, the general aviation industry saw a marked decline. From 1978 to 1994, annual sales of all general aviation aircraft fell from approximately 18,000 to 928.[11] The piston-engine segment of the industry was hardest hit, experiencing a decline in sales from approximately 14,000 to 555.[12] During the 1980s, as sales fell, the number of suits against aircraft manufacturers greatly increased.[13] The tens of thousands of aircraft produced since the 1940s represented a "long tail of liability" for the industry.[14] In airplane accidents, the airplane manufacturer was the frequent target of suit, even for planes in service for over twenty years.[15] While sales plummeted, product liability costs increased from twenty-four million dollars in 1978 to more than

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7. Victor E. Schwartz & Leah Lorber, *The General Aviation Revitalization Act: How Rational Civil Justice Reform Revitalized an Industry*, 67 J. AIR L. & COM. 1269, 1272 n.6 (2002).

8. H.R. REP. NO. 103-525, pt. 2, at 5–6 (1994), *reprinted in* 1994 U.S.C.C.A.N. 1644 [hereinafter HOUSE REPORT (II)]; S. REP. NO. 103-202, at 1–2 (1993) [hereinafter SENATE REPORT].

9. H.R. 3087, 103d Cong. (1993).

10. 140 CONG. REC. S3006, S3009 (1994).

11. U.S. GEN. ACCOUNTING OFFICE, GAO-01-916, STATUS OF INDUSTRY, RELATED INFRASTRUCTURE, AND SAFETY ISSUES 18 (2001) [hereinafter GAO REPORT].

12. H.R. REP. NO. 103-525, pt. 1, at 2 (1994), *reprinted in* 1994 U.S.C.C.A.N. 1638 [hereinafter HOUSE REPORT (I)].

13. *Limiting Liability for Small Aircrafts: Hearing on H.R. 3087 Before the Subcomm. on Econ. and Commercial Law of the House Comm. on the Judiciary*, 103rd Cong. (1994) [hereinafter *Liability Hearing*] (statement of Russell W. Meyer Jr., Chairman and CEO, Cessna Aircraft Company).

14. Schwartz & Lorber, *supra* note 7, at 1275.

15. *See Liability Hearing*, *supra* note 13 (statement of Phil Boyer, President, Aircraft Owners and Pilots Association).

$200 million in 1992.[16] This factor contributed greatly to the overall decline in the industry during that time frame.[17]

From the 1960s to the mid-1980s, Cessna Aircraft Company was the world's largest piston-powered aircraft manufacturer.[18] Cessna spent twenty to twenty-five million dollars per year on research and development.[19] In 1986, however, Cessna stopped producing general aviation aircraft.[20] For the next eight years, while not producing any piston-engine airplanes, Cessna spent almost twenty-five million dollars per year defending lawsuits, at least one of which involved a forty-seven-year-old airplane.[21]

Piper Aircraft was another leading manufacturer of general aviation aircraft from the 1940s through the 1970s, but it too experienced a huge drop in sales during the 1980s.[22] By 1990, Piper sales were less than two percent of sales in the 1970s.[23] Piper Aircraft filed for Chapter 11 bankruptcy in 1991.[24]

Beech Aircraft was a third major general aviation manufacturer during this general time frame.[25] It conducted a study covering 203 crashes over a four-year period, all of which were investigated by the National Transportation Safety Board (NTSB) or Federal Aviation Administration (FAA).[26] Not a single crash was attributed to design or manufacturing defect.[27] However, many suits were still filed against Beech with an average claim of ten million dollars.[28] Beech won most of the cases; but during this time, Beech spent an average of $530,000 defending each claim.[29] In just four years, Beech spent over one hundred million dollars in legal fees.[30]

The surge in litigation and the long tail of liability, stretching back to airplanes built prior to the 1940s, made it increasingly difficult for general aviation manufacturers to secure liability insurance for design or product defects. One Lloyds of London underwriter famously said, "We are quite prepared to insure the risks of aviation, but not the risks of the American legal system."[31] Thus, the major

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16. HOUSE REPORT (I), *supra* note 12, at 3.
17. *Id.* (noting that, in addition to other factors, product liability was a significant factor in the decline of the general aviation industry).
18. Schwartz & Lorber, *supra* note 7, at 1275.
19. *Liability Hearing*, *supra* note 13 (statement of Russell W. Meyer, Jr., Chairman and CEO, Cessna Aircraft Company).
20. *Id.*
21. *Id.*
22. Schwartz & Lorber, *supra* note 7, 1275 n.20.
23. SENATE REPORT, *supra* note 8, at 3.
24. *Id.*
25. Schwartz & Lorber, *supra* note 7, at 1275.
26. *Id.*
27. *Id.*
28. *Id.*
29. *Id.* at 1275–76.
30. *Id.* at 1276.
31. Robert Martin, *General Aviation Manufacturing: An Industry Under Siege*, *in* THE LIABILITY MAZE: THE IMPACT OF LIABILITY LAW ON SAFETY AND INNOVATION 478, 483–84 (Peter W. Huber & Robert E. Litan eds. 1991).

manufacturers had no alternative but to self-insure. Piper Aircraft was completely self-insured by 1987.[32] Cessna was self-insured for the first fifty million dollars annually and Beech for the first hundred million dollars.[33] The litigation costs of defending suits involving airplanes manufactured back to the 1940s drove up the price of new airplanes. It is estimated these costs added $70,000 to $100,000 to the cost of a new airplane.[34] In 1994, the Chairman and CEO of Cessna stated "this unlimited exposure to litigation is the sole reason . . . that Cessna closed its single engine production lines in 1986, and it's the sole reason those lines are still closed."[35]

The decline of the aviation industry impacted many areas of the economy. Congressional testimony indicated a total of 100,000 jobs were lost in aviation manufacturing, services, and sales.[36] The balance of trade in the industry also dropped significantly. In 1978, the trade surplus was 340 million dollars; in 1981 there was a 200 million dollar deficit; by 1992 the deficit had reached 800 million dollars.[37]

Congress recognized the importance of the general aviation industry,[38] and determined the industry's decay was at least in part due to tort liability.[39] The degeneration of an industry whose safety record was steadily improving through the years,[40] led many in Congress to conclude that a narrowly-constructed reform of tort law with respect to the general aviation industry was justified.[41] Kansas Senator Nancy Kassebaum and Representative Dan Glickman spearheaded GARA's passage due to the significant size of the Kansas general aviation market.[42]

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32. *Id.* at 484.

33. *Id.*

34. *Id.*

35. John H. Boswell & George Andrew Coats, *Saving the General Aviation Industry: Putting Tort Reform to the Test*, 60 J. AIR L. & COM. 533, 547 n.82 (citing Russell W. Meyer, *Statute of Repose—Key to Industry Future, General Aviation*, MFG. ASS'N INDUS. REV.: 1994 OUTLOOK AND AGENDA 1, 1 (1994)).

36. *Aviation Competition and Safety Issues: Hearing on S. 1458 Before the Subcomm. on Aviation of the Senate Comm. on Commerce, Sci. & Transp.*, 103rd Cong. (1993) [hereinafter *Competition & Safety Hearing*] (statement of Russell W. Meyer, Jr., Chairman and CEO, Cessna Aircraft Company).

37. SENATE REPORT, *supra* note 8, at 2.

38. *Id.* at 3. Small towns, numbering almost 5000, often use general aviation as the means of connecting to the major airlines and their scheduled air carrier services. Christopher C. McNatt, Jr. & Steven L. England, *The Push for Statutes of Repose in General Aviation*, 23 TRANSP. L.J. 323, 326 (1995).

39. *See* HOUSE REPORT (II), *supra* note 8; SENATE REPORT, *supra* note 8.

40. Schwartz & Lorber, *supra* note 7, at 1273 (noting the general aviation accident rate itself dropped by thirty percent between 1981 and 1994).

41. HOUSE REPORT (I), *supra* note 12, at 1 (GARA passed the Senate by a ninety-one to eight majority).

42. H.R. REP. NO. 103-883, at 73 (1995).

In 1993, the National Commission to Ensure a Strong Competitive Airline Industry recommended passage of a statute of repose.[43] With strong congressional support to revive the general aviation industry, particularly its piston-engine segment,[44] President Clinton signed the General Aviation Revitalization Act of 1994.[45] Recognizing the tort system bore some culpability in the general aviation decline, President Clinton stated his belief that GARA would revitalize the industry and create jobs.[46]

III. CONGRESSIONAL RESPONSE: A STATUTE OF REPOSE

A. Theory of Repose

In 1916 Judge Cardozo said:

> "If the nature of a thing is such that it is reasonably certain to place life and limb in peril when negligently made, it is then a thing of danger. Its nature gives warning of the consequences to be expected. If to the element of danger there is added knowledge that the thing will be used by persons other than the purchaser, and used without new tests, then, irrespective of contract, the manufacturer of this thing of danger is *under a duty to make it carefully*."[47]

Cardozo's position firmly created a duty for manufacturers to make potentially dangerous products carefully; this position has been followed by the courts ever since.[48]

The underlying theory of a statute of repose posits that after a reasonable period of operating without injury or accident, the law deems a product *carefully designed and manufactured*.[49] In Cardozo's parlance, a product's performance during the repose period is evidence the manufacturer has met its "duty to make [the product] carefully."[50] Therefore, public policy dictates a manufacturer should not be subject to litigation burdens for design or manufacturing defects after the requisite period has passed.[51] The manufacturer is, however, subject to tort liability until the repose period begins.[52]

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43. President's Statement upon Signing S.1458, 30 WEEKLY COMP. PRES. DOC. 1678 (Aug. 22, 1994) [hereinafter President's Statement].

44. SENATE REPORT, *supra* note 8, at 2.

45. President's Statement, *supra* note 43.

46. *Id.*

47. MacPherson v. Buick Motor Co., 111 N.E. 1050, 1051 (N.Y. 1916) (emphasis added).

48. KEYCITE reveals 1075 positive citing cases versus eleven negative cases through 2003, Westlaw ALLCASES database (Jan. 22, 2004) (KEYCITE of *MacPherson*, 111 N.E. 1050).

49. S. REP. NO. 105-032, at 40 (1997).

50. *MacPherson*, 111 N.E. at 1051.

51. *See* Schwartz & Lorber, *supra* note 7, at 1298.

52. *See* General Aviation Revitalization Act of 1994 (GARA), Pub. L. No. 103-298, § 2(a), 108 Stat. 1552, 1552.

Numerous states have enacted statutes of repose, either in general or for specific industries.[53] All but two states have statutes of repose for the construction industry.[54] While some commentators have criticized statutes of repose and some states have held they violate state constitutional provisions,[55] many states have upheld the statutes as constitutional.[56] A 2003 Texas appeals court explained the Texas statute of repose is "reasonably related to . . . [a] legitimate state purpose,"[57] in preventing the burden of stale design defect claims on equipment that operates continuously for many years. [58] The court summarized the legislature's reasoning that design defects on such equipment ought to become apparent prior to the repose period expiring. [59]

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53. S. REP. NO. 105-032, at 40–41 n.120 ("[As of 1997] [s]tatutes of repose exist in the following states: Ark. Code Ann. § 16-116-1059(c) (Michie 1987) (use of a product beyond its 'anticipated life' may be considered as evidence of fault by the consumer); Colo. Rev. Stat. § 13-21-403 (1987) (rebuttable presumption that the product is not defective after 10 years); Colo. Rev. Stat. § 13-80-107 (1987) (7 years for new manufacturing equipment); Conn. Gen. Stat. § 52-577a (1991 & Supp. 1995) (10 years); Ga. Code Ann. § 51-1-11(b)(2) (1982 & Supp. 1995) (10 years); Idaho Code § 6-1403(2) (1990) ('useful safe life' of product, rebuttable presumption of 10 years); Ill. Ann. Stat. § 735, 5/13-213(b) (Smith-Hurd 1992) (12 years from date of first sale, or 10 years from date of sale to first user, whichever is shorter); Ind. Code Ann. § 33-1-1.5-5(b) Burns 1992) (10 years); Iowa Code Ann. § 614.1.11 (West 2004) (15 years); Kan. Stat. Ann. § 60-3303 (1994) ('useful safe life' of product, rebuttable presumption of 10 years); Ky. Rev. Stat. Ann. § 411.310(1) (Michie/Bobbs-Merrill 1992) (rebuttable presumption that product is not defective if harm occurred five years after sale to first consumer or eight years after manufacture); Mich. Stat. Ann. § 27A.5805 (Callaghan 1986 & Supp. 1995) (if product in use for 10 years, plaintiff must prove prima facie case without benefit of any presumption); Minn. Stat. Ann. § 604.03 (West 1988) ('useful life' of product); Neb. Rev. Stat. § 25-224 (1995) (10 years); N.D. Cent. Code § 28-01.3-08(1) (Supp. 1995) (10 years); Or. Rev. Stat. § 30.905(1) (1995) (8 years); Tenn. Code Ann. § 29-28-103(a) (1988 & Supp. 1995) (10 years); Tex. Civ. Prac. & Rem. Code Ann. § 16.012 (West Supp. 1995) (15 years for non-agricultural manufacturing equipment); Wash. Rev. Code § 7.72.060(1) (West 1992) ('useful safe life' of product, rebuttable presumption of 12 years); Ohio Rev. Code Ann. §§ 2125.02(D)(2) and 2305.10(c)(Banks-Baldwin 1997) (15 years).").

54. Allen Holt Gwyn & Paul E. Davis, *Statutes of Repose*, 21 CONSTRUCTION L. 33, 33 (2001).

55. Hazine v. Montgomery, 861 P.2d 625, 630 (Ariz. 1993); Jay M. Zitter, Annotation, *Validity and Construction of State Terminating Right of Action for Product-Caused Injury at Fixed Period After Manufacture, Sale, or Delivery of Product*, 30 A.L.R.5th 1, §§ 3–7 (2004).

56. Zaragosa v. Chemetron Invs., Inc., 122 S.W.3d 341, 346–47 (Tex. App. 2003); Zitter, *supra* note 55, §§ 3–7.

57. *Zaragosa*, 122 S.W.3d at 346 (citing Eaton v. Jarvis Prods. Corp., 965 F.2d 922, 930 (10th Cir. 1992)).

58. *Id.*

59. *Id.*

B. The Statute

GARA provides an eighteen-year statute of repose for bringing suit against an aircraft or component manufacturer.[60] Prior to expiration of the statutory period, the manufacturer is subject to suit, typically for negligence, product liability, or design defect claims.[61] Beyond the time of repose, any accident is deemed to be the result of some other factor, such as improper operation or maintenance of the product, and the manufacturer is not liable.[62]

The relevant repose language of the Act states:

> Except as provided in subsection (b), no civil action for damages for death or injury to persons or damage to property arising out of an accident involving a general aviation aircraft may be brought against the manufacturer of the aircraft or the manufacturer of any new component, system, subassembly, or other part of the aircraft, in its capacity as a manufacturer if the accident occurred . . . after the applicable limitation period . . . .[63]

This raises several questions. What is the applicable limitation period? What is a general aviation aircraft? What are the exceptions to the Act?

1. A "Rolling" Statute of Repose

The limitation period is defined as "18 years with respect to general aviation aircraft and the components, systems, subassemblies, and other parts of such aircraft."[64] This period starts running at different times for different purposes.[65] For a newly manufactured aircraft, the repose period runs from the date the aircraft is delivered to its first purchaser if purchased directly from the manufacturer, or the date the manufacturer delivers the aircraft to an aircraft sales business.[66] For a component, system, subassembly, replacement part, or a part added to the aircraft after manufacture, the repose period runs from the date the replacement or addition is completed.[67]

In effect, the period of repose bars suit against the manufacturer for original design or manufacturing defects eighteen years after the plane is manufactured.[68] However, this does not absolutely bar claims more than eighteen years after a plane is manufactured.[69] Anytime a part is replaced or added, or maintenance is performed, the subject component or components receive a new

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60. General Aviation Revitalization Act of 1994 (GARA), Pub. L. No. 103-298, § 3(3), 108 Stat. 1552, 1553.

61. *See* Scott E. Tarry & Lawrence J. Truitt, *Rhetoric and Reality: Tort Reform and the Uncertain Future of General Aviation*, 61 J. AIR L. & COM. 163, 169 (1995).

62. 140 CONG. REC. H4998, H5000 (1994) (statement of Rep. Fish).

63. GARA § 2(a).

64. *Id.* § 3(3).

65. *See id.* § 2(a)(1)–(2).

66. *Id.* § 2(a)(1)(A)–(B).

67. *Id.* § 2(a)(2).

68. *See id.* § 2(a)(1)–(2).

69. *See id.* § 2(a)(2).

eighteen-year clock.[70] FAA regulation requires annual inspection and maintenance of aircraft.[71] When operated for commercial gain, aircraft must additionally undergo inspection and maintenance every one hundred hours of operation.[72] So at any given time, except possibly within the first year or two of service, an aircraft will have parts with recently started eighteen-year timelines.

2. General Aviation Defined

While over seventy percent of general aviation aircraft are small, piston-powered, single-engine airplanes,[73] the term aircraft also includes helicopters, gyroplanes, gliders, airships, balloons, and any other craft designed to fly.[74] GARA defines "general aviation" as aircraft certified by the FAA, with a "maximum seating capacity of fewer than 20 passengers," and not "engaged in scheduled passenger-carrying operations."[75] The Act cross-references 49 U.S.C. § 40102(a)(6) for the definition of aircraft: "any contrivance invented, used, or designed to navigate, or fly in, the air."[76]

A "type certificate" represents the FAA's approval of a manufacturer's design and manufacturing process.[77] The FAA issues a type certificate to an aircraft manufacturer after determining an aircraft "[is] properly designed and manufactured, performs properly, and meets the regulations and minimum standards. . . ."[78] An "airworthiness certificate" is issued by the FAA to the registered aircraft owner to certify the aircraft "conforms to its type certificate," has been inspected, and is safe for operation.[79]

GARA only applies to small aircraft (relative to commercial passenger jets) capable of carrying fewer than twenty passengers that are not engaged in "scheduled passenger carrying operations" at the time of an accident.[80] The term "scheduled passenger carrying operations" distinguishes general aviation from regular commercial flights, and other air carriers or commercial operators.[81] The FAA regulates the maintenance and operation of these other classifications of aviation activity apart from general aviation to ensure the safety of the flying public.[82] Thus, GARA is not applicable to the airline industry or manufacturers of

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70. *Id.*
71. *See* 14 C.F.R. § 21.183 (2004); *id.* § 43.15.
72. *Id.* § 121.
73. Schwartz & Lorber, *supra* note 7, at 1272 n.6.
74. *See* 49 U.S.C.A. § 40102(a)(6) (West 2004).
75. GARA § 2(c).
76. 49 U.S.C.A. § 40102(a)(6).
77. *See id.* § 44704(a).
78. *Id.*
79. *Id.* § 44704(d).
80. GARA § 2(c).
81. *See* 14 C.F.R. § 135.261(b)(1) (2004).
82. *See id.* § 91 (outlining operating Requirements for general aviation); *id.* § 119 (outlining certification of air carriers and commercial operators).

large jet airplanes in the event of a crash or other injury-causing event, and thus would not bar suit in such cases.[83]

3. Statutory Exceptions

There are four exceptions to the repose period which identify instances in which the statute of repose will not bar suit.[84] First, a misrepresentation exception applies if manufacturers knowingly misrepresent, conceal or withhold relevant information from the FAA.[85] Second, a medical treatment exception allows suit by persons on-board the aircraft due to medical necessity.[86] Third, persons killed or injured due to an accident, but who were not on-board the aircraft, are not barred by the repose period.[87] Lastly, a warranty exception enforces written warranties for terms longer than eighteen years should a manufacturer offer them.[88]

a. The Misrepresentation Exception

The misrepresentation exception is designed to ensure that during the repose period, GARA does not incentivize manufacturers to hide known defects or other information required to be submitted to the FAA.[89] While the statute requires the plaintiff to "plead[] with specificity the facts necessary to prove" misrepresentation or concealment,[90] this exception has been liberally applied to allow suit in instances where specific pleading indicates the possibility of such activity.[91]

For example, a recent case survived summary judgment because the manufacturer withheld information from military helicopter crashes concerning parts also used in civilian helicopters.[92] Bell Helicopter manufactured the helicopter in question in 1976.[93] In 1998, the helicopter crashed due to failure of its tail rotor yoke, killing four and injuring two survivors.[94] Bell Helicopter had altered a tail rotor yoke maintenance requirement from every 4,000 hours to every 5,000 hours in 1989.[95] In seeking FAA approval for the change, Bell withheld information about at least five military helicopter crashes all attributed to the same

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83. *See* GARA § 2(c); 14 C.F.R. § 135.261(b)(1). GARA does not apply to "scheduled passenger carrying operations," which encompass the activity generally associated with the airline industry, offering the general public scheduled air carrier service. GARA § 2(c). Therefore, one is not barred by GARA from bringing suit against the manufacturers of large commercial jets following an accident.

84. GARA § 2(b).

85. *Id.* § 2(b)(1).

86. *Id.* § 2(b)(2).

87. *Id.* § 2(b)(3).

88. *Id.* § 2(b)(4).

89. *See* Schwartz & Lorber, *supra* note 7, at 1302–05.

90. GARA § 2(b)(1).

91. *See* Butler v. Bell Helicopter Textron, Inc., 135 Cal. Rptr. 2d 762, 774 (Ct. App. 2004) (holding Bell Helicopter was not entitled to summary judgment because the FAA may have required additional testing or evaluation had Bell not withheld information).

92. *Id.* at 770.

93. *Id.* at 765.

94. *Id.* at 763.

95. *Id.* at 765.

part.[96] The court held that Bell's withholding of information about the military crashes from the FAA constituted a knowing misrepresentation, concealment, or withholding of required information under GARA, and thus the eighteen-year statutory bar was lifted.[97]

b. The Medical Treatment and Not On-Board Exceptions

The overwhelming support of general aviation pilots was a key factor in passage of GARA.[98] The Aircraft Owners and Pilot's Association (AOPA) represents sixty percent of general aviation pilots and sixty-two percent of general aviation aircraft owners.[99] Pilot support for GARA, as presented by AOPA, overcame consumer protection concerns because, in small airplanes, pilots represent a large percentage of the consumers.[100] The medical treatment exception and the exception for injury to persons not on-board the airplane were concessions based on the principle that these groups were not voluntarily giving up tort rights, as the pilots were agreeing to do.[101]

A passenger involved in an accident while being transported by general aviation aircraft due to a medical emergency may sue the manufacturer, even if the aircraft is over eighteen years old. This is true for the passenger in spite of the fact that others on-board the aircraft might be barred from suit.[102] Likewise, if a person is killed or injured on the ground due to a general aviation crash, that person is not barred by the repose period, although the pilot is barred.[103] While these conditions may seem anomalous, they are the result of congressional compromise and not a principled statement about manufacturer liability.[104]

c. The Extended Warranty Exception

The extended warranty exception holds manufacturers to warranties longer than the eighteen-year statutory period.[105] It permits manufacturers, if they desire, to market their products based on warranty length, knowing such warranties will be enforceable beyond the eighteen-year bar. This exception also enforces warranties negotiated between buyers and sellers, though courts have been reluctant to apply the warranty exception without solid evidence.[106] Several cases

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96. *Id.* at 766–67.

97. *Id.* at 770–71.

98. HOUSE REPORT (I), *supra* note 12, at 3 (noting the "enthusiastic support[ ]" of pilot organizations as "the best evidence for fairness" of the Act).

99. *Liability Hearing*, *supra* note 13 (statement of Phil Boyer, President, Aircraft Owners and Pilots Association).

100. HOUSE REPORT (I), *supra* note 12, at 3.

101. Schwartz & Lorber, *supra* note 7, at 1300.

102. General Aviation Revitalization Act of 1994 (GARA), Pub. L. No. 103-298, § 2(b)(2), 108 Stat. 1552, 1552.

103. GARA § 2(b)(3).

104. Schwartz & Lorber, *supra* note 7, at 1300.

105. GARA § 2(b)(4).

106. *See* Schwartz & Lorber, *supra* note 7, at 1301 & n.177 (citing cases where "plaintiff[s] failed to establish existence of a written warranty").

have been dismissed on GARA grounds due to inability to prove a warranty existed.[107]

GARA was crafted to provide repose, with exceptions to mitigate perceived unfairness under specific circumstances. This approach was essential to building support for the Act and provides a model that could be applicable in other contexts.

IV. CONVINCING CONGRESS: THE PASSAGE OF GARA

In spite of vigorous criticism by the American Trial Lawyers Association (ATLA) and consumer advocates, GARA received broad congressional support.[108] In addition to the industry's economic decline, the most convincing arguments to Congress were the vast FAA regulatory scheme governing aviation[109] and GARA's support among the pilot community.[110]

A. Federal Regulation of the Aviation Industry Is Pervasive

One persuasive factor in GARA's passage was the thoroughness with which the aviation industry is regulated by the FAA.[111] The complete occupation of the field by the FAA bolstered the perception that any design or manufacturing defect was extremely unlikely to go undetected for eighteen years of aircraft operation.[112]

The federal government regulates the life of each manufactured aircraft in a manner unlike almost any other industry.[113] Virtually every aspect of the aviation industry is subject to FAA regulation, with enforcement through fines, decertification, asset seizure, and criminal prosecution.[114] These regulations cover the aircraft design and manufacturing;[115] the inspection and maintenance of the

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107. *Id.*

108. HOUSE REPORT (I), *supra* note 12, at 1 ("In the 103rd Congress, the legislation has been limited to one issue, a statute of repose. Support has been the strongest ever.").

109. HOUSE REPORT (II), *supra* note 8, at 5 ("The Committee paid close attention to the distinguishing characteristics of the general aviation industry. Significant in this regard is the 'cradle to grave' Federal regulatory oversight of the industry.").

110. HOUSE REPORT (I), *supra* note 12, at 3 ("The best evidence for the fairness of the 18 year statute of repose is that the reported bill is enthusiastically supported by the Aircraft Owners and Pilots Association, the Experimental Aircraft Association, the National Business Aircraft Association and the National Air Transport Association. The members of these groups are the persons most likely to be injured in a general aviation accident.").

111. HOUSE REPORT (II), *supra* note 8, at 5.

112. *Id.* at 6 ("[T]he bill acknowledges that, for those general aviation aircraft and component parts in service beyond the statute of repose, any design or manufacturing defect not prevented or identified by the Federal regulatory process by then should, in most instances, have manifested itself.").

113. *Liability Hearing*, *supra* note 13 (statement of John Goglia, testifying on behalf of John Peterpaul, General Vice-President, International Association of Machinists and Aerospace Workers).

114. *See* 14 C.F.R. §§ 13.11 to 13.29 (2004).

115. *Id.* § 21 Subparts B, G (covering type certificates and production certificates).

aircraft while in operation;[116] the training, certification, and currency requirements for pilots and aircraft mechanics;[117] and the safe operation of aircraft in United States airspace.[118] This strict regulation of the industry was a key factor in congressional support for GARA.[119]

1. Regulating Aircraft Design and Manufacturing

The aviation industry is federally regulated to a greater degree than any other industry in the nation.[120] General aviation manufacturers must secure FAA approval for each aircraft design.[121] The manufacturing and testing processes used in building the aircraft also require FAA approval.[122] The manufacturer must submit a quality control plan to the FAA, and any change to that plan requires further FAA notification.[123] Manufacturers are then required to submit any information that could result in a risk to flight safety throughout the lifetime of an aircraft.[124] In addition to FAA regulatory sanctions, failure of a manufacturer to notify the FAA could constitute misrepresentation or concealment and thus subject the manufacturer to suit under a GARA exception.[125]

2. Regulating Aircraft Throughout Their Operational Life

The strict regulation of general aviation continues long after an airplane leaves the manufacturer's plant. Manufacturers are required to notify the FAA of unsafe flying conditions,[126] and every aircraft accident is investigated by the NTSB, the FAA, or both.[127] Aircraft are subject to detailed annual inspections of the airframe, engine, and other components.[128] If used in a commercial setting, such as training aircraft or sightseeing operations, aircraft must be inspected every one hundred hours of flight.[129] These inspections cover everything from propeller to rudder, and are detailed by FAA regulation.[130]

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116. *Id.* § 43.
117. *Id.* § 61.
118. *Id.* § 91.
119. *See* HOUSE REPORT (I), *supra* note 12, at 3.
120. HOUSE REPORT (II), *supra* note 8, at 5, 11 n.10 (noting federal regulation of aviation exceeds that of food and pharmaceutical regulation).
121. 14 C.F.R. § 21 Subpart B.
122. *Id.*
123. *Id.* §§ 21.139 to 21.147.
124. *Id.* § 21.3(a).
125. *See* Butler v. Bell Helicopter Textron, Inc., 135 Cal. Rptr. 2d 762, 773 (Ct. App. 2004).
126. 14 C.F.R. § 21.3(a).
127. 49 U.S.C.A. § 1132 (West 2004) ("[T]he National Transportation Safety Board shall investigate—(A) each accident involving civil aircraft . . . ."). *See* 49 C.F.R. § 830 (outlining "Notification and Reporting of Aircraft Accidents or Incidents and Overdue Aircraft, and Preservation of Aircraft Wreckage, Mail Cargo, and Records"); *id.* § 831 (outlining "Accident/Incident Investigation Procedures").
128. *See* 14 C.F.R. § 43 app. D.
129. *Id.* § 121.
130. *See id.* § 43 app. D.

General aviation piston-powered engines have a recommended time between overhaul, which usually occurs about every 2,000 hours of operation.[131] This is in addition to the FAA mandated annual and hundred-hour aircraft inspection requirements.[132] General aviation aircraft typically fly between 150 and 300 hours a year.[133] These overlapping requirements mean an average general aviation aircraft will have eighteen annual inspections, eighteen to fifty-four one hundred-hour inspections (when not accomplished concurrently with an annual inspection), and one to three engine overhauls prior to the GARA repose period taking effect.[134]

These maintenance procedures are almost always performed by aircraft mechanics working at local airports, and not by the airplane manufacturers.[135] With so much required inspection and maintenance, it is unlikely a design defect would go undetected prior to expiration of the repose period. [136] The fact that all this activity is performed by persons other than the manufacturer further supports the argument that it is unfair to hold the manufacturer responsible after the repose period. [137] A crash occurring after eighteen years of operation, if attributable to a mechanical failure instead of pilot error or weather, was likely the result of negligence by one of these intervening actors. [138]

3. Regulating Aircraft Mechanics and Maintenance Facilities

The training and certification of aircraft mechanics is also governed by strict federal regulation. Aviation Maintenance Technician (AMT) students must complete between 1,150 and 1,900 hours of training.[139] AMT schools must meet FAA curricula requirements,[140] each school's facilities must meet FAA standards,[141] and any substantial change to curricula or facilities must be approved by the FAA in advance.[142] The student to instructor ratio must be less than twenty-five to one.[143] Furthermore, AMT schools must maintain records of student attendance, instruction, progress, grades, and transcripts, subject to FAA review upon request.[144] The FAA enforces these requirements through random inspection (schools are normally inspected at least once every six months),[145] and requires

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131. *See* Lycoming Service Instruction, Recommended Time Between Overhauls, No. 1009 AR (June 22, 2004) (listing TBOs for all Lycoming engines) (on file with Arizona Law Review).
132. *See* 14 C.F.R. §§ 43 app. D, 121.
133. *Liability Hearing*, *supra* note 13 (statement of Robert B. Creamer, Citizen Action).
134. *See* 14 C.F.R. §§ 43 app. D, 121.
135. *See* HOUSE REPORT (I), *supra* note 12, at 3.
136. *See id.*
137. *See id.*
138. *See id.*
139. 14 C.F.R. § 147.21.
140. *Id.* § 147.38; *see id.* § 147 app. B–D.
141. *Id.* § 147.37.
142. *Id.* §§ 147.37 to 147.38.
143. *Id.* § 147.36.
144. *Id.* §§ 147.34 to 147.35.
145. *Id.* § 147.43.

each school's student body to maintain a minimum passage rate on written certification tests.[146]

After a mechanic is certified, the federal regulatory oversight continues. The specific maintenance activities performed on aircraft are rigorously controlled, and the record-keeping requirements are prescribed by federal law.[147] The mechanic must record each instance of maintenance or repair to an aircraft, and the logs are subject to FAA review in the event of an accident or dispute.[148] Failure to adhere to FAA procedure can result in fines and the suspension or revocation of one's maintenance certificate.[149] For a certified aircraft mechanic, such a regulatory infraction on one's record is a real black eye, seriously limiting one's future employability.[150]

4. Airworthiness Directives

Airworthiness directives (ADs) are legally enforceable rules the FAA issues when it determines a potentially unsafe condition exists in an aircraft, its engines, propellers, or appliances.[151] Once an AD is issued, one may not fly an affected aircraft without following the directed restrictions.[152] ADs can require immediate replacement of parts, more frequent inspection of specific components, new maintenance procedures, or operating limitations such as reduced speed or reduced maximum flight duration.[153]

Airworthiness directives can be derived from any source that leads the FAA to believe an unsafe condition exists or is likely to develop.[154] For instance, the initial information leading to an AD could come from an NTSB crash investigation, a report from a manufacturer, an aircraft mechanic performing an inspection, or a pilot's report of an in-flight problem.[155] ADs can also result from notification by international aviation authorities.[156] The initial source can be fairly benign, but once the FAA determines an unsafe condition exists, it has broad

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146. *Id.* § 147.38(a).

147. *See id.* §§ 21.183, 35.59, 43.15, 43.2, 43 app. D.

148. *See id.* §§ 91.417, 91.419, 91.1113, 91.1439, 91.1441 (covering maintenance record keeping and record transfer).

149. 49 U.S.C.A. § 44709 (West 2004).

150. *See* AIRCRAFT MECHANICS FRATERNAL ASS'N, FAA ENFORCEMENT PROCEEDINGS HANDBOOK, http://www.the-mechanic.com/faaguide.html (last visited Mar. 20, 2005) (on file with Arizona Law Review).

151. 14 C.F.R. § 39.3.

152. *Id.* §§ 39.7 to 39.9.

153. *See, e.g.*, Lycoming Aerobatic Reciprocating Engines; Airworthiness Directives, 49 Fed. Reg. 28,692 (July 16, 1984) (adopting amendment 39-4886 to the Federal Aviation Regulations, 14 C.F.R. § 39.13) [hereinafter Lycoming 540 AD].

154. 14 C.F.R. § 39.5.

155. *See id.*

156. *See* Airworthiness Directives; Pilatus Aircraft Ltd. Models PC-7, PC-12, and PC-12/45 Airplanes, 69 Fed. Reg. 7,560, 7,560 (Feb. 18, 2004) (adopting amendment 39-13481 to the Federal Aviation Regulations, 14 C.F.R. § 39.13) (referencing information issued by the airworthiness authority for Switzerland).

authority to direct corrective action, including the grounding of an entire fleet of aircraft if necessary.[157]

The AD system is focused on aviation safety, but also incentivizes aircraft and parts manufacturers to design and manufacture parts safely. Since aircraft maintenance must be performed by certified technicians, compliance with ADs almost always increases an aircraft's maintenance expense.[158] While replacement of parts is expensive, more frequent maintenance or inspections can also quickly drive up operating costs.[159] These increased costs, and the increased downtime for maintenance, make aircraft with extensive AD histories less attractive to customers. The scope of the FAA's AD authority, costs associated with compliance, and concern for business reputation give general aviation manufacturers a strong incentive to carefully design and manufacture aircraft, and to develop permanent fixes for costly airworthiness directives.[160]

B. Consumer Support Carries the Day: The Pilot's Perspective

At least one pilot is involved in every aircraft accident. As consumers in the general aviation market, one might expect pilots to have opposed GARA. However, just the opposite is true; another key to GARA's passage was the overwhelming support of pilots.[161] Consumer advocates testified before Congress that GARA would be detrimental to consumers.[162] These arguments were undercut by the ninety-two percent of pilots who supported the Act.[163]

The perception among pilots was that tort liability was driving up the cost of aircraft, and retarding technical advances.[164] The impact of liability is not

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157. *See* 14 C.F.R. §§ 39.7, 39.11, 39.23; Airworthiness Directives; Lycoming Engines (Formerly Textron Lycoming) AEIO-540, IO-540, LTIO-540, O-540, and TIO-540 Series Reciprocating Engines, 69 Fed. Reg. 12,057, 12,057 (Mar. 15, 2004) (adopting amendment 39-13519 to the Federal Aviation Regulations, 14 C.F.R. § 39.13) (requiring replacement of crankshaft retaining bolts before further flight, or in some instances within ten hours time-in-service and affecting aircraft manufactured by Cessna, Piper, Aero Commander, Commander 114, Lake Renegade, Mooney, Maule, and Robinson Helicopter). *See also* Aircraft Owners & Pilots Ass'n, AOPA Regulatory Brief: Lycoming Crankshaft Retaining Bolt AD Expands, *at* http://www.aopa.org/whatsnew/regulatory/reglycoming_bolt.html) (on file with Arizona Law Review).

158. *See, e.g.*, Airworthiness Directives; Raytheon Aircraft Company Beech Models C35, D35, E35, F35, G35, H35, J35, K35, M35, N35, P35, S35, V35, V35A, and V35B Airplanes, 68 Fed. Reg. 25,811, 25,812 (May 14, 2003) (adopting amendment 39-13147 to the Federal Aviation Regulations, 14 C.F.R. § 39.13) (noting estimated cost impact of $2,400 per aircraft) [hereinafter Raytheon Ruddervator AD].

159. *See id.* (estimating sixty dollars per hour for labor cost).

160. *See* Tarry & Truitt, *supra* note 61, at 171 (Aircraft manufacturers demonstrate "unwavering commitment to their products . . . since consumer confidence is especially important").

161. *Liability Hearing*, *supra* note 13 (statement of Phil Boyer, President, Aircraft Owners and Pilots Association).

162. *Id.* (statement of Robert B. Creamer, Citizen Action).

163. *Id.* (statement of Phil Boyer, President, Aircraft Owners and Pilots Association).

164. *Id.*

constrained to the original aircraft manufacturer. Several manufacturers of after-market products also indicated they had chosen to stay out of the aviation market due to tort liability concerns.[165] Thus, pilots feared the liability associated with the market was delaying or preventing safety improvements to the general aviation fleet.[166]

1. Reduced Costs Leads to Better Pilots and Better Maintained Aircraft

One major factor in pilot proficiency is recent flight time.[167] Flying is expensive, with per hour rental costs typically seventy-five dollars and up.[168] The increased costs of new airplanes drove up the costs of ownership and aircraft rental costs.[169] Similarly, aircraft maintenance is expensive.[170] FAA regulation dictates many maintenance requirements and periodic inspections.[171] Maintenance costs are averaged into an aircraft's hourly operating costs, which affects aircraft rental prices.[172] If new technology reduces the frequency of replacing parts or makes maintenance easier to perform, it reduces the hours devoted to, and hence, the cost of maintenance.[173] For pilots constrained by cost, cost increases lead to fewer recent flying hours. Fewer hours results in lower proficiency levels, and thus less safe pilots.[174]

2. General Aviation Safety Is Better Served by a Viable Industry

GARA advocates, especially pilots, were concerned that product liability was delaying or preventing improved technology from entering the marketplace.[175] Whether the liability concern was justified in terms of actual litigation, the concern

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165. *E.g.*, *Review of Revisions in Small Aircraft Liability Laws: Hearing Before the Subcomm. on Consumer Affairs, Foreign Affairs, and Tourism of the Senate Comm. on Commerce, Sci., & Transp.*, 105th Cong. (1997) (statement of Bradley D. Mottier, Senior Vice President, Unison Industries) [hereinafter *Review of Revisions Hearing*].

166. *Liability Hearing*, *supra* note 13 (statement of Phil Boyer, President, Aircraft Owners and Pilots Association).

167. *See* NAT'L TRANSP. SAFETY BD., NTSB/ARG-03-02, ANNUAL REVIEW OF AIRCRAFT ACCIDENT DATA: U.S. GENERAL AVIATION, CALENDAR YEAR 1999, at 25 (2003) (showing decreased accident rate with increased pilot flight hours).

168. *See, e.g.*, Tyconic Inc., Aircraft Rental Prices, *at* http://www.tyconic.com/aircraft%20rental.htm (last visited Apr. 11, 2005) (noting the rental price for a Cessna 172 is $89 per hour, with other aircraft ranging from $63 to $133 per hour).

169. *See Liability Hearing*, *supra* note 13 (statement of Phil Boyer, President, Aircraft Owners and Pilots Association).

170. *See supra* notes 157–59.

171. *See* 14 C.F.R. § 43 app. D (2004).

172. *See* OFFICE OF MGMT. & BUDGET, CIRCULAR NO. A-126, ATTACHMENT B: STANDARD AIRCRAFT PROGRAM COSTS ELEMENT DEFINITIONS (1992), *available at* http://www.whitehouse.gov/omb/circulars/a126/a126b.html (last visited Mar. 28, 2005) (on file with Arizona Law Review). Flight-hour costs are determined by computing variable costs and dividing by hours flown. *Id.* Several kinds of maintenance costs are included in variable costs. *Id.*

173. *See supra* notes 157–59.

174. *See Liability Hearing*, *supra* note 13 (statement of Phil Boyer, President, Aircraft Owners and Pilots Association).

175. *Id.*

was real to those companies contemplating entry or expansion in the market. One example was improvements in engine ignition systems by Unison Industries.

Unison Industries manufactured many of the magneto systems commonly used in pre-GARA piston-powered aircraft.[176] Magnetos are admittedly an old ignition technology, but one that works. They were commonplace in aircraft from the days of the Wright Brothers through the early 1990s.[177] The continued use of magnetos did not represent defective design practice.[178] Prior to 1985, Unison was working on a new electronic ignition system which would have improved engine performance and reduced maintenance costs of general aviation aircraft.[179] Unison decided not to market the technology because they "were afraid of becoming a technological pioneer and potentially subjecting [them]selves to some plaintiffs attorney second guessing [their] decisions. . . . [T]he new improved ignition system would draw into question the soundness of [their] existing products." [180] With magnetos operating on aircraft dating to the beginning of flight, Unison did not want to subject itself to claims, even if frivolous, that these devices caused crashes.[181]

Unison could stay out of the general aviation market because they also have a thriving business supporting commercial jets and military programs. [182] It did not need the general aviation market to remain profitable.[183] After passage of GARA in 1994, Unison reentered the general aviation market with electronic ignition systems that improve engine performance.[184] Unison invested three million dollars in development and 400,000 dollars in new capital equipment to bring this new technology to market, investments which they emphatically said would not have been made had GARA not passed.[185]

Anecdotal evidence of business decisions like those of Unison Industries were a serious concern to pilots.[186] This evidence supported the belief that the whole industry was being harmed by the pre-GARA business environment, as opposed to just aircraft manufacturers. The paucity of new research and

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176. *Review of Revisions Hearing*, *supra* note 165 (statement of Bradley D. Mottier, Senior Vice President, Unison Industries).

177. *Liability Hearing*, *supra* note 13 (statement of Phil Boyer, President, Aircraft Owners and Pilots Association).

178. *General Aviation Revitalization Act Panel Discussion*, 63 J. AIR L. & COM. 169, 183–84 (1997) [hereinafter *Panel Discussion*] (comments of Tom Wakefield, VP, General Counsel and Secretary, Cessna Aircraft Company) ("[W]e are using some twenty-five-year-old technology, maybe some of the technology that made the 172 one of the safest single-engine products ever, that gives it docile handling characteristics that make it easy to fly for pilots.").

179. *Review of Revisions Hearing*, *supra* note 165 (statement of Bradley D. Mottier, Senior Vice President, Unison Industries).

180. *Id.*

181. *Id.*

182. *See id.*

183. *Id.*

184. *Id.*

185. *Id.*

186. *Liability Hearing*, *supra* note 13 (statement of Phil Boyer, President, Aircraft Owners and Pilots Association).

development hurt parts manufacturers and reduced the availability of spare parts for current aircraft owners.[187] When parts are unavailable or are more expensive, routine maintenance activity tends to get deferred.[188] New technology often improves reliability, which makes maintenance cheaper.[189] Pilots cannot defer maintenance indefinitely and continue to meet FAA airworthiness standards.[190] So, at the margin, safety is enhanced through cheaper, more accessible parts.[191]

V. CRITICS' CLAIMS AND DIRE PREDICTIONS

A. Tort and Products Liability Theory

In the general aviation context, most products liability claims are for design defects.[192] The theory of products liability is uncomplicated.[193] Liability imposes costs on product manufacturers for design defects, manufacturing defects, and accidents.[194] If companies do not make products safer, they suffer a competitive disadvantage.[195] Therefore, in the aggregate, public safety will be enhanced because producers of safer products will be more likely to survive in the competitive marketplace.[196]

Product liability may be applied to manufacturers via either a negligence or a strict liability theory.[197] A negligence theory holds one liable for actual harm to another when one caused the harm, one owed a duty of care to the other person, and one failed to exercise reasonable care in performing the duty.[198] The product manufacturer owes a duty to design and manufacture products safely such that they do not cause injury to the consuming public.[199] Under a negligence theory, the injured party must show the manufacturer was at fault for the harm caused.[200]

Under a strict liability theory, the manufacturer is held liable even without a showing of fault.[201] Strict liability holds the manufacturer of an unreasonably dangerous defective product liable upon showing the manufacturer was engaged in selling the product and the product was expected to or did reach the consumer without substantial change in its condition.[202] After the California Supreme Court

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187. *Id.*
188. *See id.*
189. *See Review of Revisions Hearing*, *supra* note 165 (statement of Bradley D. Mottier, Senior Vice President, Unison Industries).
190. *See* 14 C.F.R. § 43 app. D.
191. *See Liability Hearing*, *supra* note 13 (statement of Phil Boyer, President, Aircraft Owners and Pilots Association).
192. Tarry & Truitt, *supra* note 61, at 169.
193. Peter W. Huber & Robert E. Litan, *Overview to* THE LIABILITY MAZE, *supra* note 31, at 1.
194. *Id.*
195. *Id.*
196. *Id.*
197. *See* Tarry & Truitt, *supra* note 61, at 169.
198. DAN B. DOBBS, THE LAW OF TORTS § 114 (2000).
199. Tarry & Truitt, *supra* note 61, at 169.
200. *Id.*
201. *Id.*
202. RESTATEMENT (SECOND) OF TORTS § 402A (1965).

adopted strict products liability in 1963,[203] there was a significant increase in claims against general aviation manufacturers.[204] Despite California's stance, the trend has been for courts to apply a negligence standard to aviation cases.[205]

Tort theory generally holds that compliance with statutes or regulations is evidence of reasonable care, but such compliance does not conclusively determine the exercise of due care.[206] The statute sets a floor, not a ceiling for reasonable care.[207] In some areas, GARA being an example, federal regulation so occupies the field as to preempt state tort law.[208] In these instances, compliance with the federal regulation effectively becomes a defense.[209]

B. The Critics' Contentions

Critics of GARA are quick to highlight the hypothetical tragic victim who is barred from bringing suit against the hypothetical negligent aircraft or parts manufacturer.[210] This belies the fundamental theory of GARA's repose period, that after eighteen years of continuous operation and maintenance under the strict scrutiny of FAA regulation, the aircraft is reasonably deemed to have been designed and manufactured non-negligently.[211] The critics' argument seems designed for its sympathetic appeal, and was balanced by pilots' acknowledgements that although they are the most likely victims, they still prefer affordable access to a healthy general aviation industry.[212] One cannot discount the suffering of those who have lost family members in tragic general aviation accidents, but that does not imply a reasonable likelihood any accidents were caused by a manufacturing or design defect more than eighteen years prior. A criticism based on hypothetical victims of hypothetical accidents is difficult, if not impossible, to analyze. There are, however, several criticisms worth examining for

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203. *See* Greenman v. Yuba Power Prods., Inc., 377 P.2d 897 (Cal. 1963).

204. GAO REPORT, *supra* note 11, at 18.

205. RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL HARM § 20, *A Special Note on Aviation Ground Damage* (Tentative Draft No. 1, 2001).

206. DAN B. DOBBS & PAUL T. HAYDEN, TORTS AND COMPENSATION: PERSONAL ACCOUNTABILITY AND SOCIAL RESPONSIBILITY FOR INJURY 304 (4th ed. 2001).

207. *Id.*

208. *Id.* at 692.

209. *Id.*

210. Kristen Loiacono, *Statutes of Repose: Laws that Come Back to Haunt*, TRIAL, February 2000, at 11.

211. HOUSE REPORT (II), *supra* note 8, at 6 ("In essence, the bill acknowledges that, for those general aviation aircraft and component parts in service beyond the statute of repose, any design or manufacturing defect not prevented or identified by the Federal regulatory process by then should, in most instances, have manifested itself.").

212. *Panel Discussion*, *supra* note 178 (comments of John Yodice, General Counsel to the Aircraft Owners and Pilots Association) ("The victims in a general aviation accident are the pilot, perhaps the pilot's family, perhaps the pilot's friend, perhaps the pilot's guest. There are no strangers, no fare-paying passengers. *We are the victims* . . . . We want a fair compensation system, yet we want the availability of products and we would like to have them at a reasonable price."(emphasis added)); SENATE REPORT, *supra* note 8, at 4 ("The rationale for this time limitation is that general aviation manufacturers should not be exposed to liability for harm caused by their products for an unlimited period of time.").

their influence in the legislative debate, and worth analyzing in hindsight for their predictive value.

In Congress, the arguments against passage of GARA came primarily from trial lawyers and consumer advocates.[213] Criticism of the Act followed several general lines: the decline in the general aviation industry was being overstated by the manufacturers; any decline was not really related to product liability; the Act would not revitalize the industry because factors besides tort law were the real cause of any decline that did occur; and a statute of repose for general aviation would reduce safety and unfairly shift the burden to victims.

1. Industry Woes Were Overstated

General aviation manufacturers were criticized for overstating the downturn in the industry.[214] Critics noted that Beech and Cessna, two of the largest manufacturers of general aviation aircraft, were receiving profits totaling one hundred million dollars a year while the debates on GARA were ongoing.[215] It was argued the manufacturers made a "calculated business decision" to focus on more profitable business jets to the detriment of piston-engine aircraft.[216] At Cessna, the business jet lines continued operating while the piston-engine lines were shut down.[217] ATLA argued that reducing liability would not guarantee resumption of light piston aircraft production because of the industry's focus on jets.[218]

One aspect of the argument that Cessna and Beech were profitable is true: the companies did make money building higher-end turbine-powered business jets in the early 1990s.[219] However, critics attempt to prove too much with this observation. Piston-powered general aviation may only be a small part of a company's activity.[220] Less than half of Beech's revenue was from any form of aircraft manufacturing.[221] The fact that Beech and Cessna were profitable in other business endeavors does not impugn their views concerning the viability of the general aviation market before GARA. It was precisely because of the lower profit margins on piston-engine aircraft that tort liability had a larger relative impact on

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213. *See Liability Hearing*, *supra* note 13 (statement of Charles Thomas Hvass, Jr., Partner, Hvass, Weisman, and King, and former Chairman of the Aviation Section of the Association of Trial Lawyers of America); *see also id.* (statement of Robert B. Creamer, Citizen Action).

214. *Id.* (statement of Charles Thomas Hvass, Jr., Partner, Hvass, Weisman, and King, and former Chairman of the Aviation Section of the Association of Trial Lawyers of America).

215. *Id.*

216. *See id.*

217. *Panel Discussion*, *supra* note 178, at 174 (comments of John Howie, Partner, Howie & Sweeney and former Chairman of the Aviation Section of the Association of Trial Lawyers of America).

218. Timothy S. McAllister, *"Tail" of Liability Reform: General Aviation Revitalization Act of 1994 & the General Aviation Industry in the United States*, 23 TRANSP. L.J. 301, 322 n.42 (1995).

219. Tarry & Truitt, *supra* note 61, at 197.

220. SENATE REPORT, *supra* note 8, at 6 n.8.

221. *Id.*

the piston-engine segment of the market.[222] Higher profit-margin jet aircraft are primarily sold to businesses and primarily flown by professional pilots with excellent pilot safety records.[223] These jets represent a market naturally more immune to tort liability.[224] Critics' focus on the two largest manufacturers in the industry also ignores the impact on other parts of the industry, such as parts manufacturers. Without relief from the product liability tail, it was the piston-powered market that was not profitable, and it was that market segment that was the primary focus of congressional support for GARA.[225]

2. Any Decline Was Not Due to Product Liability

Another frequent criticism of tort reform is that the need for it is overstated.[226] The "tort crisis" is said to be a creation of business interests and insurers seeking to protect their profits from lawsuit.[227] Furthermore, anti-reformers argue there is no proof that insurance rates are likely to go down as a result of implementing a repose statute.[228] These same criticisms, and other economic factors, were employed in the debate over GARA.[229] Other factors blamed for the decline of general aviation included periods of recession in the early 1980s and early 1990s, a decline of the number of pilots, imposition of a federal luxury tax which had since been repealed, and a glut of production in the late 1970s.[230]

Certainly factors besides liability contributed to the aviation industry's woes, but most acknowledge tort liability had a significant negative impact.[231] Two critics of GARA argued it is difficult to isolate the impacts of "products liability lawsuits on the general aviation industry."[232] But they also acknowledged ample evidence supporting "the industry's contention that it is the victim of far too many frivolous and enormously expensive lawsuits" and that trial lawyers and consumer advocates down-played the extent of these effects.[233] Just because product liability

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222. Tarry & Truitt, *supra* note 61, at 197.

223. *Id.*

224. *Id.*

225. *See* HOUSE REPORT (I), *supra* note 12 (noting the effects on "single engine piston aircraft"); SENATE REPORT, *supra* note 8, at 1 ("[T]he piston-engine segment has a particular problem with respect to liability lawsuits involving piston-powered aircraft since small business jets are flown by professional pilots.").

226. *E.g.*, *Liability Hearing*, *supra* note 13 (statement of Charles Thomas Hvass, Jr., Partner, Hvass, Weisman, and King, and former Chairman of the Aviation Section of the Association of Trial Lawyers of America).

227. *See* Josephine Herring Hicks, *The Constitutionality of Statutes of Repose: Federalism Reigns*, 38 VAND. L. REV. 627, 634–35 (1985).

228. *Id.*

229. *Liability Hearing*, *supra* note 13 (statement of Charles Thomas Hvass, Jr., Partner, Hvass, Weisman, and King, and former Chairman of the Aviation Section of the Association of Trial Lawyers of America).

230. HOUSE REPORT (II), *supra* note 8, at 4–5.

231. *E.g.*, HOUSE REPORT (II), *supra* note 8, at 4; SENATE REPORT, *supra* note 8, at 1–2.

232. Tarry & Truitt, *supra* note 61, at 192–93.

233. *Id.* at 181.

was not the *only* factor in general aviation's decline, does not mean it was not a significant factor, nor that the theory of repose is invalid.[234]

Analysis of critics' claims that insurance rates would not be affected reveals mixed results.[235] Following years of increases, insurance premiums for manufacturers did stabilize after the Act's passage.[236] But insurance rates for other segments of the general aviation industry went up.[237] Maintenance shops and fixed-base operators supplying aircraft training and rentals have seen insurance rates triple in some instances.[238] Plaintiffs' attorneys have sought redress from these actors, who are often not protected by GARA.[239] One can argue these are the actors on whom liability should fall. NTSB data indicates any aircraft accident is far more likely to be due to pilot error, weather, or a maintenance problem than a design defect.[240] This statistic is amplified when one considers the attenuated causal link between an aircraft manufacturer and an accident after eighteen or more years of flying, especially given all the maintenance activity required by federal regulation over that time.[241]

GARA was the end result of fifteen years of negotiation that narrowed its focus considerably.[242] A representative of the International Association of Machinists and Aerospace Workers testified that although the organization remained opposed to general tort reform, it supported GARA due to its narrow scope.[243] Congress acknowledged that other factors affected the aviation industry, but it did not find credible the assertions that tort liability was not a substantial negative impact.[244] The narrow scope of the Act was deemed a reasonable balance between the low likelihood of design defect going undetected for eighteen years and the high transaction costs of the tort system.[245]

3. The Act Will Not Revitalize the Industry

In addition to reflections on past industry activity, critics made adverse predictions for the industry's economic future should GARA pass. Critics claimed GARA would not in fact achieve the revitalization the industry was forecasting.[246]

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234. *See* SENATE REPORT, *supra* note 8, at 2 (noting GARA "focuses solely on how long a manufacturer should be held accountable for a product, once designed or manufactured").

235. J. SCOTT HAMILTON, PRACTICAL AVIATION LAW 113 (3rd ed. 2001).

236. *Id.*

237. *Id.*

238. *Id.*

239. *Id.*

240. HOUSE REPORT (I), *supra* note 12, at 3 (noting "NTSB data shows only 1% of general aviation accidents are caused by design or manufacturing defects").

241. *See supra* Section IV.A.2.

242. Tarry & Truitt, *supra* note 61, at 195.

243. HOUSE REPORT (II), *supra* note 8, at 5.

244. *Id.* at 6.

245. HOUSE REPORT (I), *supra* note 12, at 4; SENATE REPORT, *supra* note 8, at 2.

246. *Liability Hearing*, *supra* note 13 (statement of Charles Thomas Hvass, Jr., Partner, Hvass, Weisman, and King, and former Chairman of the Aviation Section of the Association of Trial Lawyers of America).

Therefore, consumers would give up valuable rights, while the country would not experience the job creation claimed by the industry.[247] It was argued that insurance costs, even if high, are only a small percentage of industry costs.[248] So a modest insurance reduction would not significantly affect aircraft price, and would not stimulate much demand.[249] Critics argued other factors would also conspire to depress aircraft demand for the foreseeable future.[250] They posited any increase in sales would require more pilots, more innovation in general aviation aircraft, or the rapid deterioration of old aircraft.[251] However, it was argued, these events were simply not in the cards.[252] The number of pilots was still historically low and contemporary FAA predictions indicated the number of pilots and hours flown would remain stable.[253] Critics also claimed general aviation manufacturers were not innovating in the piston engine market.[254] And furthermore, a significant number of old aircraft were still available.[255]

These adverse predictions were wrong, at least in result if not in reasoning. By almost all accounts, the general aviation market has achieved the Acts' designated goal: revitalization of the industry.[256] In December 1994, four months after President Clinton signed GARA, Cessna made good on its pledge by deciding to construct a new single-engine manufacturing plant.[257] In 1995, Cessna began construction in Independence, Kansas, and held the facility's grand opening on July 3, 1996.[258] Cessna added an additional 1,000 employees by 1999.[259] Piper Aircraft emerged from bankruptcy in 1995.[260] It has since increased employment from forty-three to almost 1,400 employees and increased production by thirty percent.[261] Moreover, industry-wide employment increased by 25,000 in the five years following passage of GARA.[262]

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247. *Id.*

248. *Liability Hearing*, *supra* note 13 (statement of Robert B. Creamer, Citizen Action).

249. *Id.*

250. *Id.*

251. *Id.*

252. *Id.*

253. *Id.*

254. *Id.*

255. *Id.*

256. GEN. AVIATION MFRS. ASS'N, FIVE YEAR RESULTS: A REPORT TO THE PRESIDENT AND CONGRESS ON THE GENERAL AVIATION REVITALIZATION ACT 2–4 (1999) [hereinafter GAMA FIVE YEAR REPORT], *available at* http://www.gama.aero/ (on file with Arizona Law Review); Darby Becker, *The General Aviation Revitalization Act: An Unqualified Success*, 16 AIR & SPACE L. 9 (2002); *see* GAO REPORT, *supra* note 11, at 27.

257. *Panel Discussion*, *supra* note 178, at 171 (comments of Tom Wakefield, Vice President, General Counsel and Secretary, Cessna Aircraft Company).

258. *Id.*

259. GAMA FIVE YEAR REPORT, *supra* note 256, at 3.

260. *Panel Discussion*, *supra* note 178, at 172 (comments of Tom Wakefield, Vice President, General Counsel and Secretary, Cessna Aircraft Company).

261. *Id.*

262. GAMA FIVE YEAR REPORT, *supra* note 256, at 3.

General aviation sales increased to an annual average of approximately 3,000 airplanes by 2001.[263] While far from the historical highs of the 1970s, this is a considerable improvement from the early-1990s lows of approximately 500 airplanes per year.[264] The inflation-adjusted price of a 1997 Cessna 172 was $3,000 cheaper than a 1986 Cessna 172.[265] While *average* aircraft price increased in real dollars from 1994 to 2001,[266] there are aircraft manufacturers offering certified aircraft at significantly lower prices than before GARA.[267]

Predictions about new pilots and aircraft innovation were partially correct. The number of pilots receiving licenses each year has remained relatively flat since GARA's passage.[268] This number fell from 1994 to 1998, then grew in 1999 and 2000, and has remained steady since.[269] Aviation innovation is somewhat in the eye of the beholder. Cessna aircraft now have fuel-injected instead of carbureted engines, better reliability, improved avionics, more comfortable and shock resistant seats, and better warning systems.[270] While these improvements do not greatly increase aircraft performance in terms of speed or range, the docile handling characteristics of the Cessna design have been maintained while improving pilot comfort and reducing workload.[271]

In 2001, the FAA predicted growth in the size of the general aviation fleet, the number of hours flown, and the size of the pilot population through 2014, which was the end of its forecast period.[272] Predictions indicate the number of general aviation aircraft will increase 0.9% per year, the number of hours flown will increase 2.1% annually, and the pilot population will grow at an annual rate of two percent.[273] Mr. Creamer of Citizen Action correctly predicted new pilot certifications would not greatly increase, but the pilot community is very

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263. GEN. AVIATION MFRS. ASS'N, GENERAL AVIATION AIRPLANE SHIPMENT REPORT: YEAR-END 2001, at 4 (2003) (on file with Arizona Law Review).

264. HOUSE REPORT (II), *supra* note 8, at 4–5.

265. *Panel Discussion*, *supra* note 178, at 173 (comments of Tom Wakefield, Vice President, General Counsel and Secretary, Cessna Aircraft Company).

266. GAO REPORT, *supra* note 11, at 4.

267. *See* Diamond Aircraft, DA20-C1 Evolution: Aircraft and Accessories Price List and Order Form, *available at* http://www.diamondair.com/PDFs/Evolution2005.pdf (on file with Arizona Law Review). The manufacturers suggested retail price for the DA-20 C1 is $135,345. *Id.* The GAO Reported 1994 average price was $162,000. GAO REPORT, *supra* note 8, at 4. In 2004 dollars, the GAO Reported average price would be $196,590. *See* Samuel H. Williamson, *Economic History Resources, What is the Relative Value?* (Apr. 15, 2004), *at* http://eh.net/hmit/compare (on file with Arizona Law Review).

268. AIRCRAFT OWNERS & PILOTS ASS'N, GENERAL AVIATION TRENDS, *at* http://www.aopa.org/whatsnew/trend.html [hereinafter AVIATION TRENDS] (on file with Arizona Law Review).

269. GAO REPORT, *supra* note 11, at 6; AVIATION TRENDS, *supra* note 268.

270. *Panel Discussion*, *supra* note 178, at 185 (comments of Tom Wakefield, Vice President, General Counsel and Secretary, Cessna Aircraft Company).

271. *See id.*

272. GAO REPORT, *supra* note 11, at 6.

273. *Id.*

optimistic about advances in avionics and aircraft improvements, and the FAA predicts continued modest growth in the number of pilots.[274]

In terms of liability exposure, aircraft manufacturers have seen great improvements. By 1997, Cessna's general counsel estimated the annual number of new lawsuits had dropped below fifty percent of the average number for the five-year period prior to GARA.[275] The General Accounting Office reported that one general aviation manufacturer saw the number of lawsuits defended fall from a high of approximately 900 in the early 1980s, to eighty in 2001.[276]

Almost everyone associated with the general aviation industry applauds its revitalization since GARA passed in 1994.[277] Aircraft manufacturers, both old and new, have increased hiring and sold more planes.[278] Innovative product and parts manufacturers have entered the market.[279] Pilot organizations are optimistic about the industry and airplane improvements.[280] Furthermore, the commercial airlines get a majority of their new pilots from general aviation and the industry has launched a pilot recruitment program.[281] Lastly, the National Aeronautics and Space Administration predicts continued improvements for general aviation technology.[282]

4. The Industry Is Unsafe and GARA Will Make It Worse

The argument concerning industry safety posits that the tort system provides a deterrent against unsafe practices by the industry.[283] The deterrence of potential lawsuits incentivizes businesses to ensure their products are manufactured carefully, and to ensure the products are safe once in the marketplace.[284] Frequent criticism was levied at the allegedly antiquated technology used in general aviation aircraft.[285] Critics argued that the general aviation industry had unsafe practices in the past, and that giving the industry repose would make the situation worse.[286] Others have characterized GARA as a

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274. GAMA FIVE YEAR REPORT, *supra* note 256, at 4.

275. *Panel Discussion*, *supra* note 178, at 171 (comments of Tom Wakefield, Vice President, General Counsel and Secretary, Cessna Aircraft Company).

276. GAO REPORT, *supra* note 11, at 28.

277. *See* GAMA FIVE YEAR REPORT, *supra* note 256, at 2–4.

278. *Id.* at 2.

279. *Id.* at 3.

280. *Id.* at 4.

281. *Id.*

282. *Id.*

283. *See* Huber & Litan, *supra* note 193, at 1.

284. *Id.*

285. *Panel Discussion*, *supra* note 178, at 187 (comments of Charles T. Hvass, Jr., former Chairman of the Aviation Section of the Association of Trial Lawyers of America and witness before the House Judiciary Subcommittee on Economic and Commercial Law, May 12, 1994, discussing H.R. 3087 (GARA)) ("[W]e could get 40-G cockpits in World War II fighters, but after the war nobody could figure out even how to put minimal crashworthiness into the aircraft.").

286. *Liability Hearing*, *supra* note 13 (statement of Charles T. Hvass, Jr., Partner, Hvass, Weisman, and King, and former Chairman of the Aviation Section of the Association of Trial Lawyers of America).

"subsidy of mediocrity."[287] In fact, it was predicted that granting "manufacturers immunity from suit would exacerbate matters and lead to more fatalities."[288]

The claim of past unsafe practices focused on a few instances of aircraft with worse than average safety records over part of their operating life. Aircraft specifically mentioned in hearings or critical reviews as having problems include the Beech V-tail Bonanza, the Cessna 411 series, and the Cessna 210 series.[289] The Piper Cherokee was also mentioned, but without specificity.[290]

The V-tail Bonanza is the most frequently noted example of an unsafe design, at least in its early incarnations.[291] It had a history of tail structure failures usually leading to fatal crashes.[292] The story is compelling because the history shows Beech Aircraft denying, delaying, and obfuscating for over twenty-five years before finally acknowledging the defect after two prominent cases,[293] and a failed attempt to prevent release of a negative FAA report.[294] Critics note this delay lasted well past the eighteen-year GARA repose period.[295]

While Beech's actions might accurately be described as shameful, it is not at all clear Beech's actions would have been protected by GARA. Assuming a new instance similar to the Beech history, the manufacturer would first be subject to suit for eighteen years after delivery of each aircraft.[296] Beech's actions as described by Professors Tarry and Stearman seem to clearly fall within GARA's

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287. *Panel Discussion*, *supra* note 178, at 174 (comments of John Howie, Chairman of the Aviation Section of the Association of Trial Lawyers of America).

288. *Liability Hearing*, *supra* note 13 (statement of Charles Thomas Hvass, Jr., Partner, Hvass, Weisman, and King, and former Chairman of the Aviation Section of the Association of Trial Lawyers of America).

289. *Liability Hearing*, *supra* note 13 (statement of Charles Thomas Hvass, Jr., Partner, Hvass, Weisman, and King, and former Chairman of the Aviation Section of the Association of Trial Lawyers of America, and statement of Ronald O. Stearman, Bettie Margaret Smith Professor in Engineering, University of Texas at Austin); *see also Review of Revisions Hearing*, *supra* note 165 (statement of Scott E. Tarry, Assistant Professor of Political Science, Southern Illinois University at Carbondale); Tarry & Truitt, *supra* note 61, at 174–79, 181.

290. *Liability Hearing*, *supra* note 13 (statement of Ronald O. Stearman, Bettie Margaret Smith Professor in Engineering, University of Texas at Austin); Tarry & Truitt, *supra* note 61, at 174–79.

291. *Liability Hearing*, *supra* note 13 (statement of Ronald O. Stearman, Bettie Margaret Smith Professor in Engineering, University of Texas at Austin); Tarry & Truitt, *supra* note 61, at 174–79.

292. Tarry & Truitt, *supra* note 61, at 174–79.

293. *Id.*

294. Beech Aircraft Corp. v. Harris, 631 F. Supp. 1449, 1450 (W.D. Mo. 1986).

295. *Liability Hearing*, *supra* note 13 (statement of Ronald O. Stearman, Bettie Margaret Smith Professor in Engineering, University of Texas at Austin); Tarry & Truitt, *supra* note 61, at 174–79.

296. General Aviation Revitalization Act of 1994 (GARA), Pub. L. No. 103-298, § 2(a)(1)(A), 108 Stat. 1552, 1552.

misrepresentation exception.[297] So even after the lapse of the eighteen-year period of repose, suit would not likely be barred.[298] At a minimum, a suit based on similar facts pleading the GARA misrepresentation exception would likely survive a motion for summary judgment.[299] In addition, all V-tail Bonanzas built prior to Beech's tail redesign now operate under an FAA airworthiness directive requiring a tail modification and more frequent inspection.[300]

No evidence was presented by critics showing similar misrepresentation by Cessna and Piper with respect to the Cessna 411, the Cessna 210, or the Piper Cherokee.[301] The Cessna 411 is a twin engine aircraft noted to have inadequate power to operate with a failed engine at maximum weight.[302] It now operates under an FAA airworthiness directive limiting its maximum loading and requiring changes to the pilot operating handbook.[303] Pilots are under a duty to know the flying limitations in the operating handbook and are required to have it on-board the aircraft while flying.[304] The Cessna 210 is a single-engine aircraft with noted fuel system problems which have contributed to pilots over-estimating the amount of fuel on-board and running out of gas.[305] It now operates under an FAA airworthiness directive requiring operational checks of fuel gauges, caps, and fuel quantity, or alternatively, replacement of certain parts.[306] Critics did not mention a specific problem with the Piper Cherokee design, but this model also operates under numerous FAA airworthiness directives.[307]

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297. *See id.* § 2(b)(1); *Liability Hearing*, *supra* note 13 (statement of Ronald O. Stearman, Bettie Margaret Smith Professor in Engineering, University of Texas at Austin); Tarry & Truitt, *supra* note 61, at 174–79.

298. GARA § 2(b)(1).

299. *See* Butler v. Bell Helicopter Textron, Inc., 135 Cal. Rptr. 2d 762, 773 (Ct. App. 2004); *see also* FED. R. CIV. P. 56(c) (noting summary judgment only appropriate where there is no genuine issue as to any material fact).

300. Raytheon Ruddervator AD, *supra* note 158, at 25,812 to 25,813.

301. *See Liability Hearing*, *supra* note 13 (statement of Charles Thomas Hvass, Jr., Partner, Hvass, Weisman, and King, and former Chairman of the Aviation Section of the Association of Trial Lawyers of America, and statement of Ronald O. Stearman, Bettie Margaret Smith Professor in Engineering, University of Texas at Austin); *Review of Revisions Hearing*, *supra* note 165 (statement of Scott E. Tarry, Assistant Professor of Political Science, Southern Illinois University at Carbondale); Tarry & Truitt, *supra* note 61, at 174–79, 181.

302. *See Liability Hearing*, *supra* note 13 (statement of Charles Thomas Hvass, Jr., Partner, Hvass, Weisman, and King, and former Chairman of the Aviation Section of the Association of Trial Lawyers of America).

303. Airworthiness Directives; Cessna Models 411 and 411A Airplanes, 56 Fed. Reg. 781, 781 (Jan. 9, 1991) (adopting amendment 39-6825 to the Federal Aviation Regulations, 14 C.F.R. § 39.13).

304. *See* 14 C.F.R. § 91 (2004).

305. *See* Airworthiness Directives: Cessna Aircraft Company 210, P210, and T210 Series Airplanes, 59 Fed. Reg. 29,540, 29,540 (June 8, 1994) (adopting amendment 39-8936 to the Federal Aviation Regulations, 14 C.F.R. § 39.13).

306. *See id.*

307. *See, e.g.*, Airworthiness Directives; All Airplane Models of The New Piper Aircraft, Inc., 63 Fed. Reg. 72,132 (Dec. 31, 1998) (adopting amendment 39-10972 to the Federal Aviation Regulations, 14 C.F.R. § 39.13); Airworthiness Directives; The New Piper

C. Safety Results

While the industry has been revitalized since GARA's passage, one commentator correctly notes we should not draw too many conclusions from the economic improvement.[308] It is difficult to isolate the impacts of changes to product liability from changes due to general economic conditions.[309] Though many factors could have contributed to the revitalization of the general aviation industry, one concern of GARA critics has clearly not been realized. The safety record of general aviation has continued to improve.[310]

The key statistics used to evaluate aircraft accident rates are accidents per 100,000 hours flown and fatalities per 100,000 hours flown.[311] From 1983 to 2002, both statistics dropped fairly steadily.[312] In 1983, there were 10.67 accidents and 1.92 fatalities per 100,000 hours flown in general aviation aircraft.[313] By 2002, those numbers had dropped to 6.56 accidents and 1.30 fatalities.[314]

There are two interesting phenomena in the NTSB data. There was a slight rise in the accident and fatality rates from 1990 to 1994, the four-year period leading up to passage of GARA.[315] Since passage, both the accident rate and fatality rate have decreased faster than the average rate since 1983.[316] This arguably indicates the growth of the industry since passage of GARA, and the influx of new aircraft and new technology, has had a positive impact on general aviation safety.

In 2001, the GAO examined general aviation safety data for the period from 1982 to 1998.[317] The GAO not only looked at the overall general aviation accident rates, but also broke out general aviation data by types of flying activity: personal, business, instruction, agriculture, and corporate.[318] All segments showed a decrease in accidents over the period (an increase in safety).[319] The accident rate for personal flying, while having the highest rate of the categories, also showed the most improvement.[320] Personal flying is overwhelmingly done in piston-powered

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Aircraft, Inc. PA-20, PA-22, PA-23, PA-24, PA-25, PA-30, PA-31P, PA-36, PA-39, and PA-44 Series Airplanes, 62 Fed. Reg. 59,280 (Nov. 3, 1997) (adopting amendment 39-10189 to the Federal Aviation Regulations, 14 C.F.R. § 39.13).

308. Tarry & Truitt, *supra* note 61, at 201.

309. *Id.* at 192–93.

310. *See generally* National Transportation Safety Board (NTSB), Aviation Accident Statistics, http://www.ntsb.gov/aviation/Stats.htm (last visited Jan. 17, 2004) [hereinafter Aviation Accident Statistics] (on file with Arizona Law Review).

311. *Id.*

312. NTSB, Table 10: Accidents, Fatalities, and Rates, 1983–2002, U.S. General Aviation, http://www.ntsb.gov/aviation/Table10.htm (last visited Jan. 17, 2004) (on file with Arizona Law Review).

313. *Id.*

314. *Id.*

315. *Id.*

316. *Id.*

317. GAO REPORT, *supra* note 11, at 49–52.

318. *Id* at 52.

319. *Id.*

320. *Id.*

aircraft, is the least structured of the categories, and consists of pilots with the fewest average number of flight hours.[321] Yet despite these comparative disadvantages, personal flying safety continued to improve, and showed no negative impact from the passage of GARA.[322]

Of course, correlation does not equal causation, so one cannot emphatically say passage of GARA improved safety. But one can confidently state the negative safety implications foretold by GARA opponents have not come to pass in the eight years covered by the safety data reported since GARA's signing.[323] Based on NTSB preliminary reports, 2004 was the safest year to date for general aviation.[324]

One note of caution is worth mentioning for future aviation safety analysis. In early 2004, the FAA approved a new class of aircraft, the light sport aircraft, with easier pilot certification requirements.[325] This development has the potential to substantially increase the number of general aviation pilots with fewer hours of experience.[326] Future analysis should carefully consider the impact on safety statistics, if any, of this previously non-existent segment of the general aviation market.

VI. CONCLUSION

As highlighted in this Note, GARA is a narrowly constructed tort reform measure imposing an eighteen-year statute of repose on the general aviation industry.[327] The need for GARA was spurred primarily by the perception the piston-engine segment of the general aviation industry was in serious decline.[328] This decline was at least partially attributable to products liability costs.[329] In spite of previous opposition to tort reform, GARA passed because of its narrow scope,

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321. *See id.* at 53.

322. *Id.* at 52.

323. *See generally* Aviation Accident Statistics, *supra* note 310.

324. *Id.*; Leslie Miller, *Civil Aviation Accidents Fell in 2004*, ASSOCIATED PRESS, Mar. 30, 2005 (on file with Arizona Law Review). "There is a single strong common thread among safety that's woven among every aspect of aviation, from the design of the aircraft through the systems on board to the training the pilots receive . . . . The payoff is the safest three years in aviation history." *Id.* (quoting FAA spokesman Greg Martin). *See also* Aircraft Owners & Pilots Ass'n, NTSB Confirms Air Safety Foundation Analysis—2004 Safest Year Yet for GA (Mar. 30, 2005), *at* http://www.aopa.org/whatsnew/newsitems/2005/050330ntsb.html (noting that in 2004, general aviation had its lowest accident rate and second lowest fatal accident rate ever) (on file with Arizona Law Review).

325. FAA Announcement, Sport Pilot/Light-Sport Aircraft Rule Leaves DOT for OMB (Dec. 24, 2003), *at* http://www.faa.gov/avr/afs/sportpilot (on file with Arizona Law Review).

326. *See* Certification of Aircraft and Airmen for the Operation of Light-Sport Aircraft, 69 Fed. Reg. 44,772 (July 27, 2004) (to be codified 14 C.F.R. pts. 1, 21, 43, 45, 61, 65, 91).

327. *See supra* notes 39, 237–38, 240 and accompanying text.

328. *See supra* notes 39, 217 and accompanying text.

329. *See supra* notes 6, 11, 12 and accompanying text.

the strict federal regulation of aviation, and the overwhelming support of pilots who are the main industry consumers.[330]

Critics of GARA, mainly trial lawyers and consumer advocates, highlighted past industry transgressions and claimed the industry was overstating the impact of product liability.[331] They pointed to other economic factors and business decisions as being responsible for the industry's decline.[332] Congress acknowledged these concerns but felt product liability was at least partially responsible for the general aviation decline.[333] A balance between tort liability and industry viability was deemed reasonable given the extensive federal oversight of aviation.[334]

Critics further predicted that GARA would not revitalize the industry and that reduced exposure to the deterrent effect of tort liability would negatively impact aviation safety.[335] These predictions have not been borne out.[336] By almost all accounts the industry has been revitalized since 1994.[337] It is hard to directly attribute the entire revitalization to GARA, but at least one manufacturer fulfilled its promise to open a new plant after GARA's passage.[338] In terms of sales, employment, new businesses entering the general aviation market, and pilot perception, revitalization is a reality.[339]

With respect to aviation safety, clearly the sky has not fallen, nor have increasingly more aircraft as critics forewarned. General aviation safety was not negatively affected by implementation of a statute of repose.[340] In fact, improvement in general aviation safety statistics continues unabated.[341] Given that the rate of safety increase has continued,[342] the high cost and inherent inefficiencies of the tort system[343] argue favorably for the current system of tort law followed by the GARA repose period.[344] Thus, in the general aviation context, tort liability for eighteen years followed by a GARA-induced repose is better than tort theory alone.

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330. *See supra* notes 36, 92, 94, 113, 203, 234–326, and accompanying text.
331. *See supra* Sections V.B.1, V.B.4.
332. *See supra* Section V.B.2.
333. *See supra* notes 6, 11, 12 and accompanying text.
334. *See supra* notes 209, 242 and accompanying text.
335. *See supra* Section V.B.3–4.
336. *See supra* Section V.B.3–4.
337. *See supra* Section V.B.3.
338. *See supra* Section V.B.3.
339. *See supra* Section V.B.3.
340. *See supra* Section V.C.
341. *See supra* Section V.C.
342. *See supra* Section V.C.
343. John G. Fleming, *Ruminations on Tort Law: A Symposium in Honor of Wex Malone, Is There a Future for Tort?*, 44 LA. L. REV. 1193, 1207 (1983) ("The most formidable criticism that can be levied against the tort system is its inordinate expense."); *Get Tort Reform Right*, *supra* note 2 ("The tort system is something of a casino, offering windfall judgments to a small number of claimants and nothing to others . . . ."); *see supra* Part II. In product liability cases, it costs one dollar and twenty-five cents in transaction costs to deliver one dollar to a victim. Fleming, *supra*, at 1207.
344. *See supra* Section V.B.3.

Contrary to critics' fears,[345] Congress has not extrapolated from GARA to adopt federal repose periods in other industries that lack the unique characteristics of the aviation industry.[346] Other industries have advocated for adoption of federal repose periods;[347] however, the combination of factors that contributed to GARA's passage has generally been absent.[348] Congress has maintained its traction on the slippery slope touted in critics' objections to the Act.[349] GARA and its history can serve as a model for evaluating and implementing future tort reform proposals. By ensuring adequate safeguards are included, and by securing the support of key constituencies, rationale reform measures can be crafted and passed.

345. *E.g.*, Loiacono, *supra* note 210, at 11.

346. A bill to establish a statute of repose for durable goods used in trade or business has languished in various congressional committees. The Workplace Goods Job Growth and Competitiveness Act of 1999, H.R. 2005, 106th Cong., was referred to the Senate Committee on Commerce, Science, and Transportation. 146 CONG. REC. S326 (daily ed. Feb. 3, 2000). Similar bills, H.R. 940, 107th Cong. (2001), and H.R. 1363, 106th Cong. (2005), were referred to the House Judiciary Committee. 147 CONG. REC. H825 (daily ed. Mar. 8, 2001); 151 CONG. REC. H1690 (daily ed. Mar. 17, 2005).

347. *Id.*

348. *Id.*

349. *Id.*

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