Toxic Cabin Air Litigation Continues to Recirculate Through the Courts

By David J. Harrington and Justin M. Schmidt

The April 1, 2010, decision by an Australian appeals court in *East West Airlines Ltd. v. Turner* has gained attention within the airline industry and the aviation legal community because it is the first court worldwide to uphold a damages award for health problems resulting from exposure to contaminated cabin air.[1] The amount of damages awarded to the flight attendant in *Turner* (approximately US$129,000) was relatively small in comparison to damages that have been awarded in other toxic exposure cases, such as asbestos exposure. The significance of the *Turner* decision lies not in the amount of damages awarded, but in the court's factual determination that toxic particles in the cabin air from vaporized engine oil caused long-term adverse health effects. Prior to *Turner*, plaintiffs in toxic cabin air cases had been unable to establish a connection between toxic cabin air exposure and long-term health effects sufficient to satisfy a court or jury.

The possibility of fumes entering an aircraft's passenger cabin through "bleed" air from the engines is not a new phenomenon—such incidences are commonly called "fume events." What is new is the possibility that, in light of *Turner*, more courts could begin awarding monetary damages for health problems that a number of neurologists, researchers, crew members, and now passengers claim are caused by exposure to toxins in the cabin air. Airline crew members and passengers have filed a handful of recent lawsuits in U.S. courts against airlines, aircraft manufacturers, and aircraft component manufacturers, claiming they have suffered detrimental health effects from exposure to toxic cabin air.

This article will address common factual and legal issues in recent toxic cabin air cases, including the *Turner* decision, the application of the Montreal Convention and U.S. federal and state law to toxic cabin air litigation, possible solutions for reducing fume events, and recent legislation concerning cabin air contaminants.

Aircraft air-conditioning systems

Nearly all commercial aircraft are equipped with air-conditioning and pressurization systems designed to control cabin pressure, ventilation, and temperature. These systems use bleed air from the aircraft's engines or auxiliary power unit (APU). The APU is a relatively small turbine engine normally located in the aircraft tail that provides electrical and pneumatic power to run the heating, cooling, and ventilation systems prior to starting the engines. "Bleed" air is compressed (and therefore hot) air that is bled off the engines, cooled, and continuously distributed throughout the cabin to maintain cabin pressurization. Bleed air is mixed with recirculated cabin air generally at a 50/50 ratio in order to decrease the amount of air bled off the engines. By limiting the amount of bleed air taken in, engine and fuel efficiency are increased. However, because the recirculated cabin air was originally bleed air, all cabin air was at one point "bleed" air.

Bleed air should pose no risk of toxic contamination because the air is drawn from the engines' compression section before fuel is added and burned in the combustion chamber. However, faulty engine seals or overfilled fluid reservoirs can cause engine fluids (e.g., engine oil, hydraulic fluid, or fuel) to leak into the compression section where the hot compressed air vaporizes the fluid, causing fumes to mix with the bleed air. Standard aircraft air-conditioning systems are equipped with high-efficiency particulate air (HEPA) filters capable of removing dust, bacteria, and viruses but are incapable of removing engine fluid fumes. Fume events are often described as having a gray, white, or blue haze with a foul odor similar to dirty socks.

Toxicity and health effects

Among the chemical compounds that researchers have focused on in examining potential links between contaminated cabin air and adverse health effects is tricresyl phosphate (TCP), which is added to jet engine lubricants as an anti-wear agent. TCP is an organophosphate, and, like a number of these esters of phosphoric acid, is a neurotoxin. According to one research report, all U.S. engine oil manufacturers confirmed that their products contained between 1 and 5 percent TCP.

Researchers are trying to determine whether TCP is responsible for causing what some scientists

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have described as Aerotoxic Syndrome. Aerotoxic Syndrome is not an officially recognized medical diagnosis, but symptoms claimed to be associated with the syndrome include blurred vision; headaches; nausea; coughing; dizziness; vomiting; eye, nose, and throat irritation; and loss of memory, balance, and consciousness. These symptoms resemble those associated with exposure to certain organophosphates. Dr. Mackenzie Ross, a clinical neuropsychologist at the University College London who has led studies on toxic cabin air, estimates that Aerotoxic Syndrome may affect as many as 200,000 passengers per year.[2]

A 2007 study conducted by the U.K. Committee on Toxicology (COT)[3] analyzed data from several hundred fume events submitted by the British Airline Pilots Association (BALPA) and the Civil Aviation Authority (CAA). The results of the study were inconclusive. The COT report stated that "[i]t was not possible on the basis of the available evidence . . . to conclude that there is a causal association between cabin air exposures (either general or following incidents) and ill-health in commercial aircraft crews."[4] However, the COT report acknowledged that "an association was plausible" in a number of incidents based on the timing of the fume event and the onset of the health symptoms.[5] Association or not, the report advised that "it would be prudent to take appropriate action to prevent" air contamination incidents.[6]

Several researchers and academics published a joint critique of the COT report, arguing that the COT has close financial ties to the aviation industry, that it ignored and misrepresented data, and that the report was designed to minimize the possibility of identifying any problems.[7] The critique emphasized the COT report's estimate that fume events were reported by pilots in one in every 100 flights and confirmed by maintenance in one in every 2,000 flights (these figures would convert to 289 reported and 14 confirmed fume events on U.S. flights daily). The critique suggested that the actual number of fume events is much higher due to pilot underreporting. The FAA recorded over 900 fume events between 1999 and 2008, but airline unions have stated that the figures may be low due to underreporting.[8]

Numerous cabin air studies, resulting in a wide range of conclusions, have examined whether fume events expose flight crew and passengers to dangerous levels of TCP or other toxins, such as carbon monoxide.[9] One reason for the lack of consensus is the inability to easily monitor toxin exposure in aircraft cabins. Commercial aircraft are not equipped with sensors to detect the presence of toxins in cabin air. Researchers have tried to determine the type and amount of toxins in aircraft cabin air by using filters and handheld devices, both of which must be later analyzed in a laboratory. Other studies have relied on swab samples taken from aircraft cabin material and passengers' clothing.

Another reason for the lack of consensus concerning the presence of toxins in cabin air is the "complexity of the variables" involved in the monitoring process, including engine type, type of engine fluid used, engine maintenance, bleed air system design, air-conditioning system design, type and amount of any contaminants, and ambient levels of the same.[10] When this myriad of variables is combined with human variables such as potential underreporting of fume events, underreporting of symptoms by passengers, misdiagnosis of symptoms from toxic exposure, and individual reactions to different types and combinations of toxins, it is not surprising that studies have produced conflicting results regarding the presence of toxins and associated health problems.

Toxic cabin air litigation

Toxic cabin air claims represent a very small percentage of the aviation tort cases currently filed, but the number of toxic cabin air claims filed represents only a fraction of reported fume events. The number of claims could rise in the near future as the public becomes more aware of this issue, as more research and testing are conducted, and especially if more courts or juries begin awarding damages for health problems resulting from exposure to contaminated cabin air.

As previously mentioned, the New South Wales Court of Appeal's decision in *Turner*[11] is the first time a court anywhere in the world has upheld damages for adverse health effects resulting from exposure to contaminated cabin air (the lower court in *Turner* was the first court anywhere to award such damages). Prior to this decision, plaintiffs in toxic cabin air cases worldwide had been unable to prove that their exposure to a fume event caused long-term health effects. Plaintiffs most likely will examine the *Turner* decision for guidance on proving causation.

In 1992, flight attendant Joanne Turner was aboard a BAe 146 regional jet that departed from Sydney when a fume event occurred during descent into Brisbane, Australia. The BAe 146 was operated by her employer and defendant, the defunct East West Airlines. The fume event lasted approximately 20 minutes, during which time "a thick cloud of smoke" entered the cabin. Turner immediately experienced coughing, a burning throat, sore eyes, headache, and, later, a persistent cough. Her symptoms did not cause her to miss any time from work and her cessation of employment in 2002 was not related to her symptoms. Turner commenced proceedings against her employer claiming that she was negligently exposed to fumes, chemicals, and dust, which resulted in a persistent cough. She sought economic and noneconomic damages under the applicable workers' compensation statute.

The appellate court upheld the Dust Diseases Tribunal's (lower court) finding that the fume event

led to Turner's symptoms, which she had been experiencing for the past 17 years and would continue to experience for the rest of her life.[12] Her symptoms, according to the Tribunal, put her at a disadvantage in the labor market and caused her to suffer a loss of earning capacity. The US$129,000 damages award included damages for noneconomic loss, past and future loss of earnings, medical expenses, and out-of-pocket expenses. Expert witnesses, qualified on behalf of both parties, established that the smoke contained "ultra-small particles of carbon," which entered the cabin after 1.75 liters of Mobil Jet Oil II leaked through a cracked compressor seal in the APU, causing the oil to vaporize through a process called pyrolysis (the thermal decomposition of organic material in oil without combustion).

The Tribunal held that the fume event was foreseeable and that the defendant airline did not take reasonable steps to mitigate the risk of the APU contaminating the cabin air, despite knowing the following: faulty compressor seals could emit vaporized oil into the bleed air system, the APU at issue had been recently leaking oil, cabin smells had been recently reported, and the source of the smells had not been located. The Tribunal further held that the fume event caused Turner's health problems because Turner was exposed to such pyrolyzed oil, which is harmful to the lungs. The Tribunal found that she experienced an immediate and persistent coughing reaction.

It may be, as a former BAe 146 pilot and cabin air contamination researcher maintains, that Turner was successful because she cited a single recorded fume event, rather than regular exposure, and focused on one health problem (lung damage), rather than a host of medical problems.[13] Although the *Turner* decision is not binding on courts outside New South Wales, it could be persuasive to courts in other jurisdictions.

Litigation in U.S. courts

Flight attendants and passengers alike have filed toxic cabin air cases in U.S. courts in recent years. Defendants include a number of different air carriers and aircraft manufacturers as well as aircraft engine manufacturers, manufacturers of air-conditioning and pressurization systems, and aircraft owners and lessors. Plaintiffs have alleged a wide array of symptoms resulting from exposure to cabin air contaminants, including respiratory problems, severe headaches, vomiting, reactive airways dysfunction syndrome (RADS), PTSD, neurological impairment, difficulty speaking, vision impairment, and uncontrollable tremors, among others.

Venue and jurisdiction

One of the first issues commonly litigated is whether the case will be heard in federal or state court. Defendants generally consider federal court to be a more favorable forum than state court and will often attempt to remove to federal court a case filed in state court. Plaintiffs often file in state court, and if the case is removed to federal court, attempt to remand the case back to state court. The applicability of the Montreal Convention[14] can influence whether a case will be heard in federal or state court. If the Convention applies to at least one claim, defendants generally can remove the entire case (including the state law claims) to federal court.

A recent toxic cabin air case filed in Illinois state court, *Sabatino v. Boeing Corp.*,[15] aptly demonstrates the procedural maneuvering that plaintiffs and defendants engage in to have the case heard in their desired court. On January 29, 2009, 20 plaintiffs filed suit in the Circuit Court of Cook County, Illinois, against Boeing (aircraft manufacturer), AAR (aircraft owner/lessor), United Technologies Corp. (engine manufacturer), Honeywell International (air cycle machine manufacturer), Hamilton Sundstrand Corp. (manufacturer of components on the bleed air system), and XL Airlines (charter airline). Plaintiffs are all residents of the United Kingdom. On February 1, 2007, they flew on a Boeing 767 charter flight operated by XL Airlines from London to Orlando, Florida. Plaintiffs allege that a fume event occurred during flight and that they sustained aerotoxic poisoning, which caused respiratory problems, severe headaches, vomiting, bowel problems, and extreme fatigue.

Boeing and AAR are both corporate citizens of Chicago, Illinois. The Circuit Court of Cook County, Illinois, is widely regarded as one of the most favorable venues for aviation tort plaintiffs and one of the most problematic for aviation defendants. Defendants often attempt to transfer or remove cases filed in Cook County to other venues or jurisdictions.

Defendants removed the entire *Sabatino* case to the U.S. District Court for the Northern District of Illinois under federal question jurisdiction because the Montreal Convention governed the claims asserted against XL Airlines, a U.K. corporation. The defendants removed the remaining state law claims under the district court's supplemental jurisdiction. Two days after removal, plaintiffs voluntarily dismissed XL Airlines, thereby eliminating the source of federal question jurisdiction. Plaintiffs then moved to have the case remanded back to Cook County. The federal district court granted plaintiffs' motion for remand, and declined to address defendants' *forum non conveniens* motion, in which defendants had requested dismissal of the case (and agreed to consent to U.K. jurisdiction) on grounds that all the plaintiffs are U.K. residents and that none of the alleged conduct giving rise to the claims occurred in Illinois.[16] As a result, the *Sabatino* case was reinstated in the Circuit Court of Cook County. Defendants then filed a *forum non conveniens* motion in that court, seeking to have

the case transferred to the U.K. or Florida. The court denied defendants' motion, finding that no forum enjoys a predominant connection to the litigation, and, therefore, the court honored the plaintiffs' choice of forum. Accordingly, this case will remain in Cook County. The court has not yet resolved any of the substantive toxic cabin air issues in this case. If the court or jury finds for plaintiffs in *Sabatino*, the aviation industry may almost certainly expect other plaintiffs, if exposed to fume events aboard Boeing aircraft, to file toxic cabin air cases in Cook County—where Boeing is headquartered.

Preemption/federal standard of care

A key issue in domestic toxic cabin air litigation will be whether state law negligence standards apply or whether plaintiffs' claims are preempted by federal law under the theory of implied field preemption. If state law claims are held to be preempted, then state law remedies would only be available to a plaintiff upon a showing of a breach of a federal regulation that caused plaintiff's injury.[17]

The Federal Aviation Administration (FAA) has issued a number of federal aviation regulations (FAR), airworthiness directives (AD), and advisory circulars (AC) regarding cabin air ventilation requirements and contaminant concentration limits.[18] The FAA requires that cabin and cockpit air "must be free of harmful or hazardous concentrations of gases and vapors in normal operations" and during "reasonably probable failures" of aircraft systems and equipment. The FAA provides specific concentration limits on carbon monoxide and ozone. Therefore, the FAA arguably has preempted the entire field of cabin air quality standards and a federal standard of care, rather than a state negligence standard of care, should apply to toxic cabin air claims.

Plaintiffs' claims relating to toxic cabin air also may be expressly preempted under the Airline Deregulation Act (ADA),[19] which generally preempts any state law that attempts to regulate airlines' prices, routes, and services. It is arguable that providing clean cabin air is a "service" under the ADA and that the FAA cabin air quality regulations would completely preempt any state law causes of action.

International travel—Montreal Convention

The Montreal Convention[20] would govern claims against air carriers (not manufacturers or other defendants) for fume events occurring during international flights. An air carrier would be held liable[21] under the Convention for a fume event that caused bodily injury only if a court/jury were to find that the fume event constituted an "accident." In *Air France v. Saks*,[22] the U.S. Supreme Court defined an "accident" under Article 17 of the Warsaw Convention[23] as an "unexpected or unusual event or happening that is external to the passenger," not "the passenger's own internal reaction to the usual, normal, and expected operation of the aircraft."

The determination of whether a fume event constitutes an accident under Article 17 would likely turn on the severity of the fume event at issue and how many passengers suffered bodily injuries. A "typical" fume event, i.e., noticeable smoke, fumes, or odors in the cabin, may well be considered an accident because a passenger would not expect such an event to occur during a flight. If a passenger were to suffer bodily injury as a result of a noticeable fume event, the air carrier would most likely be liable because the injury would have been caused by an "accident," i.e., an event outside of the "usual, normal, and expected operation of the aircraft."

The result would be less certain if a passenger were to claim bodily injury from smaller amounts of contaminants in the cabin air without noticeable smoke, fumes, or odors and with no indication of mechanical failure. In this situation, a court/jury would have to determine what level of contaminants in the cabin air is considered acceptable during normal aircraft operation. Contaminant amounts above the acceptable level could constitute an accident while those below may not. There also would need to be a determination of whether the claimant's injury was simply caused by his or her own internal reaction to a normal level of contaminants. If on a flight with 250 passengers only one passenger gets ill, then it could be argued that any illness or injury is due to that person's own sensitivity to the usual level of contaminants. Further, without a noticeable fume event, the passenger would face inherent difficulty in proving the level of contaminants to which he or she was allegedly exposed because of the lack of contaminant detection or collection devices onboard aircraft today. This evidentiary obstacle also would present problems for the frequent flyer claiming bodily injury from long-term exposure to cabin air contaminants. The occurrence of bodily injury from "long term exposure to contaminants" would be difficult to prove and stretches the definition of an accident, which is generally held to a single occurrence or series of closely related events in a short time frame. The frequent flyer would have to prove that his or her alleged bodily injury was caused by exposure to levels of contaminants that constituted an Article 17 accident on at least one flight.

Failure to warn

Regardless of whether courts were to find that certain levels of contaminants are acceptable under normal aircraft operation, passengers may claim that the air carrier failed to warn them about the possible presence of cabin air contaminants. A similar situation occurred in a US$6 billion class action lawsuit against United Airlines in 2004. The named plaintiffs

in *In re UAL Corp.*,[24] Richard and Sharon Dorazio, flew from Sydney to Los Angeles on a United Airlines flight that was "disinsected" (i.e., insecticides were sprayed in the cabin before and during flight) as legally required for all aircraft entering Australia and New Zealand. Sharon Dorazio allegedly became ill as a result of exposure to the insecticides. The Dorazios acknowledged that the practice of disinsection was usual and legally required; however, they claimed it was nonetheless an Article 17 accident because it was unexpected. Specifically, they stated that they did not expect their seats to be "coated with toxic substances that they would absorb and inhale" and did not expect flight attendants to spray insecticides during the flight. They argued that had they been warned of the disinsection, no "accident" would have occurred because they would have expected the presence of chemicals. The court rejected the Dorazios' arguments, relying on the significant number of similar deep vein thrombosis (DVT) decisions that have "uniformly declined to find Article 17 accidents in the absence of an airline's deviation from ordinary operating standards."

No U.S. federal regulations require airlines to warn passengers about the possibility of fume events or about the possibility of contaminants in the cabin air under normal aircraft operations. Therefore, in the absence of such regulations, a court might follow the reasoning in the disinsection decision and the DVT decisions, and hold that airlines have no duty to warn passengers about the possibility of fume events or contaminants that may be present during normal aircraft operations.

Prevention of fume events

The majority of fume events occur when an engine seal fails or when a fluid reservoir is overfilled and leaks oil or hydraulic fluid, which vaporizes and contaminates the bleed air. Regular inspection and replacement of seals on the engines and APU should reduce fume events. However, even with proper maintenance, engine seals can fail during flight.

Fume events occasionally occur during deicing operations. Airline standard operating procedures require main engines to be turned off during deicing. Most airline standard operating procedures also require that bleed air from the APU be turned off during deicing (the APU itself will remain on to provide electricity for the aircraft) because the APU air inlets on the aircraft exterior can ingest deicing fluid if the APU bleed air system is running and could cause a fume event.

Researchers have suggested that cabin air filters capable of removing TCP, carbon monoxide, and other toxins might be developed. It is also possible that sensors capable of detecting these toxins might eventually be available. The current lack of such filters or sensors could serve as part of a defense in toxic cabin air cases because an airline cannot be expected to install a product that does not exist.

To eliminate TCP exposure entirely, researchers have suggested using lubricants with antiwear agents that do not contain TCP. A French oil manufacturer, NYCO, produces a lubricant called Turbonycoil 600 that does not contain TCP and supposedly does not deteriorate the lubricant's performance. Turbonycoil 600 does, however, contain an alternative phosphate that NYCO is testing to determine its toxicity status.

The U.S. Senate has passed a bill that would require the FAA to "initiate research and development work on effective air cleaning and sensor technology" capable of removing, detecting, and recording oil-based contaminants in the bleed air.[25] The version of the bill passed by the House of Representatives also would require the FAA to conduct a study of air quality in the cabins of U.S. commercial aircraft.[26] As part of the study, the FAA would be required to do the following: develop a "comprehensive sampling program" to identify the type, amount, and duration of air toxins present in aircraft cabins; develop a systematic reporting standard for fume events; identify the potential health risks from exposure to air toxins; and determine whether sensors and filters would provide a public health benefit.

Finally, future aircraft designs may follow the lead of Boeing's new 787 Dreamliner. The 787 is the only commercial aircraft that does not use bleed air, but instead uses electrically powered compressors that direct outside air into the cabin through dedicated air inlets. Boeing states that it made this change to the 787 for fuel-efficiency purposes. Bleed air systems reduce engine efficiency; therefore, Boeing estimates that replacing bleed air systems with electric compressors could reduce fuel consumption by 1–2 percent. However, aircraft with bleed air systems will be around for years to come—and so too may toxic cabin air litigation.

Endnotes

1. E. W. Airlines Ltd. v. Turner (N.S.W. Ct. App. Apr. 1, 2010) (Austl.), *available at* http://www.lawlink.nsw.gov.au/lawlink/caselaw/ll_caselaw.nsf/pages/cl_index.

2. Jimmy Lee Shreeve, *Cabin Fever: A Bad Case of Aerotoxic Syndrome?*, The Independent, Mar. 17, 2009; *see also* Charles Starmer-Smith, *Is Cabin Air Making Us Sick?*, Telegraph, Feb. 21, 2008.

3. Comm. on Toxicity of Chems. in Food Consumer Prods. & the Env't, Statement on the Review of the Cabin Air Environment, Ill-Health in Aircraft Crews and the Possible Relationship to Smoke/Fume Events in Aircraft (2007) [hereinafter "COT Report"], *available at* http://cot.food.gov.uk/pdfs/cotstatementbalpa200706.

4. *Id.* ¶ 86, at 25.

5. *Id.*

6. *Id.* ¶ 85, at 24.

7. *See* Captain Susan Michaelis et al., Critique of the U.K. Committee on Toxicity Report on Exposure to Oil Contaminated Air on Commercial Aircraft and Pilot Ill Health (2008), *available at* http://www.gcaqe.org/images/Critique%20of%20COT%20report%20May%202008.pdf.

8. Sarah Nassauer, *Up in the Air: New Worries About "Fume Events" on Planes*, Wall St. J., July 30, 2009.

9. *See, e.g.*, Louise Smith, Brief to the House of Commons, SN/SC/5114, Cabin Air Quality 1, 8–11 (June 25, 2009), *available at*

http://www.parliament.uk/briefingpapers/commons/lib/research/briefings/snsc-05114.pdf.

10. *See* COT Report, *supra* note 3, ¶ 43.

11. *See* E. W. Airlines Ltd. v. Turner (N.S.W. Ct. App. Apr. 1, 2010) (Austl.).

12. The Dust Diseases Tribunal's decision is available at http://www.austlii.edu.au/cgi-bin/sinodisp/au/cases/nsw/NSWDDT/2009/10.html?stem=0&synonyms=0&query=^Turner.

13. *See* David Learmount, *Australian Appeal Court Awards Big Compensation in Toxic Cabin Air Case*, FLIGHT INT'L, Apr. 8, 2010 (referring to the comments of Susan Michaelis).

14. The Montreal Convention is a treaty ratified by the United States that governs claims arising from international air travel. Its predecessor is the Warsaw Convention, which still applies to those countries that ratified the Warsaw Convention but have not ratified the Montreal Convention.

15. Docket No. 2009-L-001056 (Cir. Ct. Cook Cty., Ill.).

16. *See* Sabatino v. The Boeing Corp., No. 09 Civ. 1551, 2009 WL 1635670 (N.D. Ill. June 5, 2009).

17. *See, e.g.*, Montalvo v. Spirit Airlines, 508 F.3d 464, 468 (9th Cir. 2007); Greene v. Goodrich Avionics Sys., Inc., 409 F.3d 784 (6th Cir. 2005); Abdullah v. Am. Airlines, Inc., 181 F.3d 363, 375–76 (3d Cir. 1999); *but see* Cleveland v. Piper Aircraft Corp., 985 F.2d 1438, 1443–44 (10th Cir. 1993); Pub. Health Trust v. Lake Aircraft, Inc., 992 F.2d 291, 294–95 (11th Cir. 1993).

18. *See, e.g.*, 14 C.F.R. §§ 25.831 (ventilation requirements for transport category aircraft), 23.831 (ventilation requirements for commuter category aircraft), 23.1111 (turbine bleed air systems), 23.1109 (turbocharger bleed air systems), 25.832 (cabin ozone concentration limits), 121.219 (ventilation), & 121.578 (cabin ozone concentration limits); *see also* AD 2000-15-17 (requiring hydraulic repairs on certain McDonnell Douglas aircraft to "prevent hydraulic fluid leakage . . . which could result in smoke and odors in the passenger cabin or cockpit"); AC 120-38 (guidance for complying with cabin ozone concentration limits).

19. 49 U.S.C. § 41713(b)(1).

20. *See supra* note 14.

21. The Montreal Convention provides that air carriers are strictly liable to a maximum of 113,100 (previously 100,000) Special Drawing Rights (approximately US$170,000) for injury or death on an international flight. If a party claims damages beyond 113,100 SDRs, the air carrier is not liable if it proves that the death or injury was not caused by the wrongful conduct of the carrier, or that the injury or death was caused solely by a third party. In addition, the Convention prohibits punitive damages.

22. 470 U.S. 392, 405–06 (1985).

23. Article 17 of the Montreal Convention is substantively identical to Article 17 of the Warsaw Convention. Courts interpret the Montreal Convention with reference to cases interpreting similar provisions of the Warsaw Convention.

24. 310 B.R. 373 (Bankr. N.D. Ill. 2004). Plaintiffs sought to represent a class of passengers who flew on United's disinsected aircraft and a subclass of passengers who became ill as a result of exposure to the insecticides. *Id.* at 376. The $6 billion claim was based on an estimated three million class members, each with approximately $2,000 in damages. *Id.*

25. FAA Air Transportation Modernization and Safety Improvement Act, H.R. 1586, 111th Cong. § 613 (passed by Senate Mar. 22, 2010).

26. H.R. 1586, 111th Cong. § 564 (passed by House Mar. 19, 2009). The House and Senate have not yet reconciled differences in their respective versions of the bill in order to develop a final bill for enactment into law.