I. INTRODUCTION

This article details advanced methods for the handling of airline passenger injury claims. It is based on the rather prosaic idea that the aerial environment is quite different from the earthbound milieu in certain key respects, alongside the less prosaic—and claim-related—notion that these differences give rise to opportunities for evaluating injury claims under a set of standards that respond directly to the posited differences. This means, among other things, that where the special circumstances of the flight environment have the capability to reshape the air carrier liability regime, the claims operative and her counsel are advised to take notice. It will be argued, in fact, that the viability of certain airline injury claims is so sensitive to either the location of the happening of the injury (in flight) or the instrumentality alleged to have caused it (an airplane) that opportunities abound for the avoidance of liability whereas in other regimes it might be accepted. The factors that will be advanced undergirding this claim include: (1) certain specific aspects of the physics of flight, to be discussed; (2) selected design characteristics of passenger aircraft and their multifarious systems; and (3) a variety of federal statutes and regulations designed to govern air carrier safety and commerce.

As an initial concession, the argument could be entertained that the aerial environment acts to create a heightened risk of injury to cabin occupants because airliner cabins and boarding means are often cramped and unfamiliar (leading to accidents
of inattentiveness or inability to navigate them), and because airliner cabins mainly operate in a regime of low atmospheric pressure and occasional rough air. Countervailing this argument is the notion that as the risk of injury increases, passengers’ ability to impose liability on the carrier decreases in roughly equal measure—the reasons for which will be explicated.

II. AVIATION FACTS—NOT SO FAST

A rightful question at this juncture would be: How does it come about that an airline injury with a factual setting that, for all appearances, shows palpable airline negligence can nevertheless fail to rise to the level of an actionable breach of a legal duty? The key to unwinding this conundrum lies in the fact that many air carrier injury claims are based on misperceiving aviation “facts,” which, when properly unwound and dissected, can show a path to either effective denials or, in the event of litigation, availing defenses. One explanation for this misperception is the operation of the logical fallacy of faulty analogizing, where it might be believed, for example, that the way physical processes work aloft are the same as on earth, which is not always true. To illustrate, it could be believed that a change in cabin pressure causing ear pain should not occur while airborne because pressures do not change in cars—a misapprehension which could spur claims against the airline. While claims of this nature are capable of being dispatched with an explanation that pressure changes are normal in airliners and that flying with a cold or upper respiratory infection is the likely cause of difficulties or pain, how does one respond to a case of actual proven, pressure-related injury? The response is the same—the airline cannot, in the normal course, be held liable for even documented pressure-related injury.

Before delving into the dense milieu of aviation verities that occasionally trip up our claimants, we dispose of a couple of legal intricacies that, however tangential to the topic at hand, nevertheless would be of more than passing interest to the air carrier claims operative. The first is the occasionally encountered, but eminently erroneous, notion that getting hurt on an airliner willy-nilly entitles one to compensation, as though airline activities were subject to a rule of strict liability—liability without fault—which is not the case. An exception to this strict liability dictum is injury occurring in international flight under the Montreal Convention, where strict liability for injury is imposed
claim sounding in "insurer liability"—liability with neither fault nor causation—which is also not the case. And, despite the oft-heard maxim that air carrier liability is founded on the common law legal duty to passengers of "utmost care," this stricture does not obviate the usual and ordinary negligence analysis consisting of exposition of a legal duty owed, heightened or not; evidence of breach; the carrier's act or omission fairly charged as causative of the harm sustained; and damages.

Another interesting set of airline claims are those for injuries occurring in airport terminals. Although these claims are not airline claims in the sense of one's being on or near an airplane, their ability to fascinate is unending. First, their number and variety cast the impression that the terminal environment causes many to lose all sense of their relation to their surroundings and to each other. This hypothesized diminished perceptual acuity does not start on the airplane but upon first entrance to the terminal, where customers begin slipping on floors, tripping on rugs, knocking each other over, toppling on moving walkways, falling on escalators, tumbling in jetways, and occasionally trying to walk without a wheelchair (when they know they cannot) and falling in the process—and then looking around to see who can pay. Crowded terminal buildings with daunting reception halls and confusing signage could combine to adversely affect both attentiveness and sure-footedness. Add to this the anxieties attendant to arriving at one's gate at the allotted hour in combination with the prospect of partially disrobing and walking through machines, and it can be seen how one's distraction quotient could rise. Fortunately, the quotidian terminal slip-and-fall case is subject to ready disposal by reference to classic negli-
gence principles, with no particularized aviation knowledge required.  

Not so in the case of the highly-specialized environment of an airline cabin—a tube of aluminum or carbon$^6$ hurtling through the sky at breakneck speed (if you will allow it) controlled by unseen people using mysterious means. It would not be too much exaggeration to say that the lay mental model (how the unversed think about a topic rightly or wrongly) of air travel is that it is a mysterious process powered by unexplained forces done in an uncongenial environment. Some of us add the proviso that as long as we can see the ground, the plane is being held up, and if we cannot, there is no telling. A major variable accounting for much passenger apprehension—airplane height—also happens to be a chief factor responsible for the postulated enhanced risk of commercial air travel, as well as for the specialized associated defenses that will be discussed.

One salient feature of the "height variable" is the thinning of the air with increasing altitude. Although this rarifying effect is compensated for by airplane pressurization systems, this pressure component accounts for a substantial portion of claims. Another important feature of increasing altitude is the greater odds for encountering injurious turbulence, which in itself constitutes fertile ground for the aforesaid faulty analogizing. An example would be a proclivity to compare a turbulence encounter with riding in a carelessly driven car crashing through potholes; injured airline passengers might conclude that the pilots are as liable as the errant car driver. This conclusion would be mistaken in the usual case, however, because of material differences in the ability of respective operators to perceive, and thus to avoid, the hazard. This rough and ready comparison constitutes a first illustration of how the accustomed mental models of daily life do not translate dependably to the aerial environment. It is possible, even likely, that the pilots were not negligent—due not only to postulated perceptual limitations but also to other factors that can act to relieve the pilots and the airline of liability for turbulence injury.

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5 See MacDonald v. Air Can., 439 F.2d 1402, 1404–05 (1st Cir. 1971).
6 If the new B-787 Dreamliner is a harbinger, carbon filament is poised to be the dominant hull-construction material of the future. See Justin Hale, Boeing 787 From the Ground Up, AERO 4.06, 18, available at http://www.boeing.com/commercial/aeromagazine/articles/qtr_4_06/article_043.html.
7 See generally Am. Airlines, Inc. v. Marchant, 249 F.2d 612 (1st Cir. 1957).
8 See generally Barber v. United Airlines, 17 F. App'x 433 (7th Cir. 2001).
III. UPS AND DOWNS OF MID-AIR TURBULENCE

The first thing to know about mid-air turbulence is that it is not foreordained to cause injury as long as one’s body is securely affixed to the airplane by the seatbelt worn—in the usual airline parlance—“low and tight” across the lap.\(^9\) The customary public address announcements directed to the cabin are designed to reinforce this idea. Nevertheless, passengers ignore the seatbelt sign when it is illuminated and the various announcements when it is not, and they become injured.\(^10\) A first line of inquiry may thus suggest itself, i.e., whether the sign was indeed illuminated and whether, in addition, crewmembers had issued the usual verbal admonitions.\(^11\) While an illuminated seatbelt sign qualifies as a complete defense, evidence of delivery of the usual safety announcements adds a convincing patina to a claim denial.\(^12\)

Even where the seatbelt sign had been released and passengers were away from their seats, claims of injury are still capable of being denied, particularly in the case of a clear air turbulence (CAT) encounter.\(^13\) As suggested in the name, CAT cannot be detected by eye, nor can CAT be made to appear on the cockpit weather radar screen.\(^14\) Other than “strategic notice” provided by the pilots’ preflight weather forecast indicating the possibility of CAT along the intended route of flight—which can be unreliable due to the passage of time and shifting weather patterns—the principal source of good CAT warnings consist of the “tactical warning” provided by the reports of other aircraft operating in the vicinity, along with the secondary reports of air traffic control (ATC).\(^15\) In the absence of either kind of notice, especially the latter kind, airline policy is typically to allow relatively unfettered movement in the cabin (i.e., with the seatbelt sign

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\(^10\) See Abdullah, 181 F.3d at 371–72.

\(^11\) Id. at 365.

\(^12\) See 14 C.F.R § 121.317(b) (2015) (requiring the “Fasten Seat Belt” sign be turned on when “considered necessary by the pilot in command.”). See also 14 C.F.R. § 121.317(f) (requiring each passenger to “fasten his or her safety belt” and “keep it fastened while the ‘Fasten Seat Belt’ sign is lighted.”); Allen v. Am. Airlines, Inc., 301 F. Supp. 2d 370, 375 (E.D. Pa. 2003); FAA Order 8900.1, vol. 3, ch. 33, § 6, 3-3561(B) (Jan. 30, 2014) (stating, “When the seatbelt sign is turned on, crewmembers should make an announcement.”).

\(^13\) See Barber, 17 F. App’x at 435.

\(^14\) Id. at 436.

\(^15\) Id.
released), and as long as the usual seatbelt-safety announcement protocols are followed, there can be no liability for turbulence injury. Legal cases confirming the rightness of this “no-pay” stance for airborne turbulence injury include the defense verdicts rendered in Barber v. United Airlines, Karuba v. Delta Air Lines, and Point-Du-Jour v. American Airlines.

The “no-tactical-warning” defense in a CAT encounter—especially in combination with other exculpating factors—will be dispositive. However, a good “belt and suspenders” approach would be to learn of any mitigating crew actions, such as whether pilots requested from ATC a different altitude in search of smoother air and/or adjusted speed to best turbulence penetration speed in order to smooth out the ride. Whether or not the altitude-change request was granted is of less moment than whether the request was made—which increases odds that an injurious CAT encounter would receive a characterization of force majeure, or Act of God (as opposed to actionable airline negligence).

The following actual denial delivered to a claimant’s attorney reflects this approach (the claim having been abandoned):

Turbulence is expected and normal. To experience turbulence—even to sustain injury—is not necessarily probative of negligence absent evidence of crew misconduct, of which none appears in this case. The crew was unwarned, and they slowed to turbulence penetration airspeed the moment they encountered turbulence. They discussed diverting, but they were already in the turbulence and in their judgment, the flight could be completed safely to the destination.

Turbulence injury claims are also deniable on the ground that the turbulence was of insufficient intensity to cause injury.

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16 Id. at 438. The customer ease object becomes more compelling in light of the risks of long-period seating, in particular, the deep vein thrombosis (DVT) risk. See Deep Vein Thrombosis and Pulmonary Embolism, CDC, Mar. 2, 2015, available at wwwnc.cdc.gov/travel/page/dvt. This peril is minimized to the extent the airline creates opportunities for passengers to leave their seats, and passengers avail themselves of the opportunities. Id.

17 Barber, F. App’x at 435.


20 Barber, 17 F. App’x at 436, 441.


22 See id.

23 Magan v. Lufthansa German Airlines, 339 F.3d 158, 162–63 (2d Cir. 2003).
The following is an actual denial based on the fact that "very light" turbulence—a classification that is recognized by the FAA and by some courts—could not have caused claimant’s fall and injury (this claim also being abandoned): “Our reports indicate that the particular flight from [“X” to “Y”] experienced no greater than "very light" turbulence, a condition insufficient to unbalance a person with normal vestibular and proprioceptive faculties; thus, your client’s fall was due to his own negligence and/or preexisting condition(s).”

This denial highlights a passenger’s own duty to avoid harm. In fact, a passenger’s lack of care by ignoring rough conditions should, depending on the facts, intervene and supersede any fault that might be attributable to the airline, a guideline broadly hinted at by the following jury charge in Eastern Airlines v. Silber: “A passenger on a common carrier is required to exercise reasonable care for his or her own safety and is chargeable with knowledge of conditions which his or her senses record.”

This maxim, reflective of both common sense and the common law of most, if not all, jurisdictions should inform any turbulence-injury analysis.

When and if litigation ensues, resort can always be had to certain legal defenses—prominent among them specialized federal statutes addressing airline safety and air commerce. Burnishing their prominence is the fact that these statutes have the distinction of being preemptive of state tort law and state rules, thus curtailing much airline injury litigation at its inception. A progenitor Third Circuit case, Abdullah v. American Airlines, declared that the Federal Aviation Act (FAA) of 1958 occupied the field for regulating airline safety, thus precluding private enforcement of, or resort to, standards of care contained in state safety rules or laws. Therefore, having been preempted by operation of federal rules, state tort law is incapable of being brought to bear, and state suits are stopped unless a violation of an FAA safety rule can be successfully pleaded. The main FAA safety

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24 E. Airlines v. Silber, 324 F.2d 38, 39 (5th Cir. 1963). The jury charge was quoted by the Court of Appeals in its decision affirming a verdict and judgment against the airline for negligence in not using the weather radar for storm avoidance. Id.


27 Abdullah, 181 F.3d at 367. But see Vinnick, 93 Cal. App. 4th at 864.
provision for which a violation must be shown is the FAA’s regulatory proscription against “careless or reckless operation” of aircraft (unless a more specific safety rule could be found to be on point).\textsuperscript{28}

\textit{Abdullah} substantially raised the bar in the Third Circuit and other jurisdictions following it—which is probably most, if not all, of them to one degree or another—for turbulence-injury plaintiffs to establish airline negligence.\textsuperscript{29} The closest factual set suggestive of a violation would be where conspicuously bad crew error created abnormal and unexpected risks to the aircraft, its passengers, or to persons on the ground—conduct which is so difficult to prove in the normal course as to all but preclude a viable “careless and reckless” claim.\textsuperscript{30}

For example, the court in \textit{Allen v. American Airlines} (a failure to warn case) concluded, after surveying a number of prior cases alleging a careless or reckless violation, that the conduct complained of was “far more extreme and carried far graver consequences than Defendant’s challenged conduct here,” adding that careless and reckless therefore had to be “reserved only for egregious crew misconduct where the potential for harm is incontestably high,” as where “a pilot flew into known or forecast severe icing conditions.”\textsuperscript{31} As convincing as \textit{Allen} might seem concerning the low odds for a successful end-run around a preemption defense, the law could be more nuanced elsewhere, necessitating testing one’s facts against the current law of the controlling circuit.\textsuperscript{32} The following sections will explore some common aviation litigation factual situations where a so-called “expert-informed” analysis can point to a path for liability avoidance.

IV. CABIN ENVIRONMENTALS—NO PRESSURE

“Cabin environmental”—a term of art denoting the artificial conditions of temperature, pressure, and humidity extant in an airplane cabin designed to make airliner flight not only endura-

\textsuperscript{28} 14 C.F.R. 91.13 (2015). The “careless and reckless” rule is codified at 14 C.F.R. 91.13 in the set of rules known as the Federal Aviation Regulations (FARS). The \textit{Abdullah} court did say that in the event that the jury found an actual violation of the rule, a jury could impose state damage remedies. \textit{See Abdullah}, 181 F.3d at 376.

\textsuperscript{29} \textit{Abdullah}, 181 F.3d at 376.


\textsuperscript{31} \textit{Id}.

\textsuperscript{32} \textit{Id}. at 376–77.
ble but comfortable—is frequently advanced as a cause of action for alleged airborne injury. This claim type occurs at the intersection of physics and physiology—the physics of high altitude flight in tandem with the physiology of the human middle ear and sinuses. These cranial regions consist of air-filled voids whose normally open passageways to the outside world could be narrowed, or even closed off in extreme cases, due either to inflammation from a cold or by a congenital malformation, thus interfering with, and even preventing, normal pressure equalization during changes in cabin pressure. Pain can result, and in the extreme case, actual injury in the form of distension of tissues and infusion of blood into the voids. "Barotrauma" is the name given to this malady and is used here as shorthand for having sustained either pain or injury, because either symptomatology could theoretically support a claim. As a practical matter, it will be the rare claim that can establish airline responsibility for barotrauma due to the necessary confluence of two factors—an unusual congenital malformation predisposing a sufferer to either of two types of pressure change and a proved aircraft malfunction.

To preface discussion of specific barotrauma claims and defenses, we briefly allude, because of its importance to the topic, to the seminal U.S. barotrauma legal case, Air France v. Saks, which was decided by the U.S. Supreme Court in 1985. Saks was a Warsaw Convention case for international flights that imposed on the Court the necessity of deciding whether a Warsaw "accident" had occurred in order to find liability. In finding no

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35 Id.

36 See generally Eric Hexdall, Barotrauma: The Ins and Outs of the Pops and Cracks, DiveAssure, https://www.diveassure.com/new/documents/Barotrauma_The_Ins_and_Outs_of_the_Pops_and_Cracks_Eric_Hexdall_RN_CHRN_Duke_Dive_Medicine.pdf (last visited March 2, 2015). Complications could possibly include bleeding, ruptured or perforated eardrum(s), hearing loss, and infection. See also Cabin Environmental, supra note 33, at fig. 1.


38 See supra note 1 and accompanying text (discussing the Warsaw Convention of 1929 and its replacement, the Montreal Convention of 1999); see also Saks, 470 U.S. at 394.
accident within the meaning of the treaty and no evidence of an airplane malfunction, the Court concluded that claimant’s own “internal reaction” to the normal and expected cabin pressure changes caused her symptoms, and the airline was not liable.\textsuperscript{39} The 	extit{Saks} takeaway is, of course, that a claimant’s own personal reaction to an airplane’s normal operation does not qualify for compensation, and this rule, indeed, reflects the law for domestic as well as international air travel.\textsuperscript{40}

It may be justly asked: How may a claimant attempt to establish “abnormal operation” of an aircraft’s pressurization system so as to advance her barotrauma claim? Such a claim might be credibly made were it not for an inconvenient pack of truths: first, that barotrauma can only result—except in a very rare instance, which will be covered—from an increase in cabin pressure, as occurs while the cabin is descending for landing; and second, that a truly malfunctioning cabin pressurization system will only produce a decrease in cabin pressure, which mimics a condition of ascending to higher altitude and consequently, lower pressure.\textsuperscript{41} Since barotrauma symptoms are normally coincident with descent and an airplane pressurization failure mimics ascent, it follows that barotrauma cannot be associated with an alleged—or even proved—airplane pressurization fault.\textsuperscript{42} Accordingly, barotrauma claims are deniable in the normal course.\textsuperscript{43}

The exact mechanism of barotrauma is as follows: as the aircraft ascends into thinner air, the internal voids release air pressure to the lower pressure cabin environment, and then as air attempts to push its way in on descent, the restricted, or closed off, passageways of a cold or malformation sufferer prevent timely equalization of internal pressures, producing middle ear

\textsuperscript{39} 	extit{Saks}, 470 U.S. at 406.
\textsuperscript{40} Id.
\textsuperscript{41} Watson, \textit{supra} note 34.
\textsuperscript{42} Id.
\textsuperscript{43} The rarity of barotrauma occurring on ascent is confirmed in the author’s March 13, 2013 personal interview with a senior U.S. Air Force flight surgeon who was speaking at an aeromedical conference at the Ramstein Air Base in Germany. The interviewee emphasized that the barotrauma-on-ascent condition, known in the field as “reverse block” or “reverse squeeze,” was rarely seen and is a result of an unusual formation of the Eustachian Tubes or sinuses, in other words—of idiosyncratic origin. A video précis of the conference may be seen at the U.S. European Command website. Sgt. Abigail Waldrop, \textit{Ramstein Air Base Hosts Flight Surgeon Conference}, U.S. EUR. COMMAND (Mar. 22, 2013), http://www.eucom.mil/media-library/video/24754/ramstein-air-base-hosts-flight-surgeon-conference.
or frontal sinus pain, and sometimes injury. Please think of a balloon with a lightly pinched neck that permits some air to escape, but air re-enters only with force. Given this physiological fact, it is clear why human barotrauma can only be normally associated with descent into higher-pressure air; this fact also happens to constitute one-half the explanation why the airline normally has no liability for barotrauma injury. The other half of the explanation is the previously mentioned fact that an airplane pressurization malfunction only produces a decrease in air pressure, which is inconsistent with descent where cabin pressure is increasing.

The reason that an airplane pressurization fault always results in decreased pressure is that the fault always takes the form of a breakage or breach wherein the pressurizing agent (air) escapes through a cabin breach or through a valve leak or an air duct, or possibly fails to be produced due to a fault in the airplane air pressurizing systems or by an electronic fault. What is important to remember upon receiving a claim sounding in barotrauma is to attempt to learn when symptoms were first experienced; if an admission is forthcoming or can be elicited that the complained-of symptoms were encountered on descent or "just before landing," this is claimant's testimony that a normal aircraft repressurization was taking place. Accordingly, the claim is deniable as evidencing no aircraft fault.

The foregoing should cause one to think that the odds are stacked against a plaintiff succeeding in a claim against an airline for barotrauma during descent—and that would be a mistaken conclusion. A cautionary tale is told by the case of a Louisiana woman with a congenital ear defect predisposing her to pressurization injury who successfully sued Northwest Airlines

44 Watson, supra note 34.
45 If the circuit breakers protecting pressurization system electronics trip and will not restore, pressurization will be lost. This fault could be recognized as a failure to pressurize during initial climbout—a condition readily detected by sensing a lack of conditioned air during the early stages of the climb—and could be compensated for by an immediate descent for either troubleshooting or landing, which the author has done. Alternatively, if a circuit trips at altitude—an extreme rarity—this is readily handled by a fast descent to a lower altitude, which the author has also done (with no barotrauma complaints). Ryanair Emergency: How Losing Cabin Pressure Can Prove Fatal, TELEGRAPH (Aug. 26, 2008, 11:02 AM), available at http://www.telegraph.co.uk/travel/2624658/Ryanair_emergency_-How_losing_cabin-pressure_can_prove_fatal.html.
46 Watson, supra note 34.
47 This assumes that investigation reveals no crew-reported pressurization problems.
in a Minnesota court for alleged barotrauma on a DC-9 flight. Evidence of an airplane pressurization problem on the particular flight was suspect and not corroborated by any other evidence from the flight, including pilot or cabin crew reports. Nevertheless, plaintiff succeeded (mainly, if not exclusively, through adroit lawyering!) in engendering sufficient jury sympathy for an award.

V. TWO EXCEPTIONS—AND A PSEUDO-EXCEPTION

Forming a minor exception to the general rule of no barotrauma symptoms on ascent would be a case of tooth pain known as barodontalgia (or aerodontalgia). This malady results from either a pathology of the tooth or possibly a recent tooth surgery where an internal lesion or inflammation prevents equalization of internal pressure with the decreasing ambient pressure of climb. Therefore, if the cabin were to fail to properly pressurize on ascent, it would follow that such a malfunction could factor in producing a barodontalgia episode, and such a claim would be compensable—but only with a proved aircraft pressurization malfunction.

The second possible exception would be actual cabin decompression, the seriousness of which depends primarily on these factors: (1) the rate of onset of the decompression—gradual, explosive, or something in between; (2) the duration of the low pressure event, which is a function of both aircraft height at the time of the occurrence and the rapidity of the descent initi-

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49 Hearing-Damage Lawsuit Sounds Like Bad News for Northwest, USA TODAY (June 30, 2004, 1:35 PM), http://www.usatoday.com/travel/news/2004-06-30-nwa-lawsuit_x.htm?csp=28. No other complaints were received from this flight. The author was in attendance at the trial.
50 Id.
52 See generally id. Assuming a proved airplane defect, the value of such a claim would be minimal because the tooth pain is not especially severe and abates completely upon descent for landing as the cabin repressurizes, in the author’s experience on two separate occasions.
ated by the pilots;\textsuperscript{54} and finally (3) the extent to which cabin occupants avail themselves of the provided supplemental oxygen.\textsuperscript{55} Fortunately, due to the fitting of redundant electronic pressure controllers to commercial aircraft in recent decades, the incidence of cabin decompressions has been in steady decline so as to constitute a very rare occurrence.\textsuperscript{56} Rarer still would be the so-called "explosive decompression," i.e., that caused by a metal fatigue or structural failure producing a pressure vessel breach.\textsuperscript{57} Liability would be presumed for any type of high altitude sickness contracted as a result of a true decompression—especially when supported by evidence of treatment and an appropriate diagnosis.\textsuperscript{58}

The "pseudo-exception" to the rule of no airline liability for pressurization anomalies would be a claim that the steep gradient of rapid airplane descent was replicated in the cabin so that cabin occupants were exposed to an abnormally high rate of repressurization in the cabin.\textsuperscript{59} While it is true that a severe cabin repressurizing gradient could stress the middle ear's ability to "keep up"—with barotrauma a possible consequence—the fallacy contained in this claim is in assuming that the cabin descended at the same rate as the aircraft, which is almost never the case.\textsuperscript{60} The cabin electronic pressurization controller modulates the cabin descent rate to a comfortable 300 to 400 feet-per-minute from cruise altitude to landing regardless of the actual

\textsuperscript{54} See Cabin Decompression Awareness, supra note 53.

\textsuperscript{55} Id. A true cabin decompression, depending on severity and duration, could cause various high altitude maladies including hypoxia, loss of consciousness, decompression sickness (aka "the bends"), injurious gas expansion, brain damage, and death. Id. The latter has occurred where no descent was accomplished, or oxygen was not available or was not used. Professional golfer Payne Stewart’s Learjet crashed in 1999 for these reasons, killing all aboard. See 1999 South Dakota Learjet Crash, WIKIPEDIA, http://en.wikipedia.org/wiki/1999_South_Dakota_Learjet_Crash (last modified Jan. 29, 2015); see also Helios Airways Flight 522, WIKIPEDIA, http://en.wikipedia.org/wiki/Helios_Airways_Flight_522 (last modified Jan. 28, 2015).

\textsuperscript{56} Cabin Environmental, supra note 33, at 16–29.

\textsuperscript{57} Id.

\textsuperscript{58} A claim for fright or loss of consciousness may also be considered for compensation depending on whether the covering policy could be fairly interpreted not to exclude these two ascriptive categories and depending also on the genuineness of the claim, to the extent determinable.


\textsuperscript{60} Id.
rate achieved by the airplane, as detailed in the following denial (the claim having been abandoned):

You may have misconstrued the crew’s declaration of an airborne emergency, and the plane’s steep descent, as affecting the rate of cabin pressure change. This is a misapprehension. At 31,000 feet (your cruise altitude), the altitude inside the cabin was automatically set to 5000 feet, meaning that in the minimum achievable descent time of 11 to 12 minutes to the Birmingham airport elevation, the cabin descended at a rate of about 400 feet per minute—which is comfortable and normal.

VI. THE ENGINE NOISES ARE IN MY HEAD

What to know about jet engines is that they need to make noise to make power. Even where it can be shown that an engine was making “unusually loud” noises, this showing does not support a claim for compensation where (1) no other person complained; (2) crewmembers’ statements affirmed that the sounds were not overly loud; and (3) the complainant refused offers to change seats to move away from the offending noise—as reflected in this actual denial (the claim being abandoned):

We understand that the engine sounds where your client was seated constituted an annoyance, but we are constrained to note that jet engines have to make noise, that there were no other complaints, that crewmember statements support the conclusion that the engine sounds were not excessively loud, and that your client refused to move when offered the opportunity. Only 54 of the 109 seats on the aircraft were occupied—many if not most of which were a considerable distance from the aft cabin where your client was seated.

Claimant’s counsel persisted with a doctor’s note, receiving this reply:

While we agree that jet engine high frequency noises can pose a threat to hearing, the exposure must occur over long periods and that the exposure must be unattenuated—that is, outside the aircraft in the vicinity of the engine and without hearing protection. The interior of a civil transport is outfitted with sound attenuation materials specifically designed to protect against high frequency jet sounds; thus, the settled learning is that there is no danger of high frequency hearing injury while seated in the cabin. We do not dispute that, in this case, any louder-than-normal engine noises may have constituted an annoyance, but this is different from injury.
It should also be noted in this context that many, if not most, aviation policies do contain a noise exclusion; however, the exclusion is ordinarily written to apply outside the aircraft.\textsuperscript{61} Therefore, in a proper case, noises heard inside a cabin would be covered, assuming that the airline had done something wrong such as leaving either an overwing hatch or rear cabin door open in the vicinity of a running engine (both constituting serious protocol violations).

VII. TAKEOFFS ARE OPTIONAL—LANDINGS MANDATORY

What to know about landings is that, within certain limits—not unlike turbulence encounters—hard landings are a part of aviation. Gusty winds or wake vortices lingering close to the surface can throw off the most carefully planned approach to the runway, leading occasionally to a hard landing.\textsuperscript{62} The second thing to know is that airplanes are not as strong as people—meaning that if a hard landing did not hurt the airplane, it would not have been capable of harming occupants.\textsuperscript{63} It follows that if there are no logbook entries concerning a hard landing, no post-landing airworthiness inspection issues, or no other complaints, then injury claims from even a "horrible" landing can be safely denied,\textsuperscript{64} as in this communication to a claimant: "We do not take issue with the very real possibility that the plane experienced hard landing that day, but this sort of thing happens in aviation, and it can be said that this is a part of flying.


\textsuperscript{62} Wake vortices are high velocity swirls of air coming off the wings of landing aircraft. \textit{Pilot and Air Traffic Controller Guide to Wake Turbulence}, FAA, 2.20, https://www.faa.gov/training/testing/training/media/wake/04SEC2.pdf (last visited Feb. 16, 2015). Their effects are minimized by FAA-mandated minimum spacing between aircraft in the landing sequence, which delay is designed to allow the vortices to dissipate. \textit{Id.}

\textsuperscript{63} Aircraft landing gear and tires are designed to absorb landing loads to keep impact forces from reaching the cabin in an injurious fashion, minimizing the effect of "bad" landings. For a technical discussion, see \textit{Chapter 13—Aircraft Landing Gear Systems}, FAA, https://www.faa.gov/regulations_policies/handbooks_manuals/aircraft/amt_airframe_handbook/media/ama_Ch13.pdf (last visited Feb. 16, 2015).

\textsuperscript{64} A logbook "hard landing" entry is mandatory and will cause a thorough inspection of the airplane before it is returned to service. \textit{See}, e.g., \textit{Recommended Inspection Procedures for Former Military Aircraft}, FAA, Advisory Circular No. 43-209A (2013).
Pilots strive for smooth landings, but winds can be unpredictable."

Complaints are sometimes received alleging that a precipitous stop on landing threw the claimant into the coach seats in front of her causing injury. Hard stopping forces as a result of aggressive wheel braking and/or thrust reversing can unsettle the inexperienced air traveler, but this is different from injury. When pilots select stopping forces for a given landing, the electronic anti-skid system will determine the total deceleration forces supplied by the brakes and engine thrust reversers to ensure little, if any, disturbance to cabin occupants. Pilots may also exercise the option of employing automatic wheel braking, with the settings carefully designed to achieve safe, non-injurious stops, as detailed in this denial: "The captain has indicated to us that he selected Autobrakes II, which is an ‘average’ setting for landing on wet runways. This setting provides slightly more deceleration than what is normally experienced, but it is not expected to cause alarm or injury."

VIII. AND IF THEY DON’T BUY IT?

What if, through staunch adherence to basic negligence principles informed by the technical precepts discussed here, you have properly denied an airline injury claim, and then the claimant retains counsel in order to more vigorously press his claim? As previously noted, the statute books can step into the breach to make available defenses that will typically reach a result equivalent to a properly founded denial. A first arrow in the statutory quiver is the Airline Deregulation Act of 1978 (ADA)—whose aim was to lower prices by increasing airline competition. Lawmakers believed the competition goal could be best served by freeing airlines’ “price, route[s], [and] service” policies and behaviors from the erstwhile control of state laws and rules—the mechanism achieving this result consisting of federal preemption of the state-based claims.

ADA preemption has achieved a formidable record of success in the so-called customer contact areas consisting of the ticketing, boarding, and seating phases. It is here that customer disap-

pointment over a slight or an injury, real or imagined, can morph into a claim and ultimately, a lawsuit. The types of lawsuits falling to ADA preemption have included allegations of tortious ejectment, denied or delayed boarding, faulty boarding policy and/or priorities, tortious enforcement of “bumping” policy, and injury emanating from dense seating or lack of legroom. Testimony to the robustness of this legal defense is found in these collected preemption cases: Roberts v. American Airlines, Inc.\textsuperscript{68} (boarding/bumping policy); Delta Airlines, Inc. v. Black\textsuperscript{69} (ticketing, seating); Letty v. Northwest Airlines, Inc.\textsuperscript{70} (injury from lack of legroom); Nali v. Northwest Airlines, Inc.\textsuperscript{71} (flight delay); and Witty v. Delta Air Lines, Inc.\textsuperscript{72} (cramped legroom—ADA preemption; lack of warning of the risk of deep vein thrombosis—FAA preemption). The doctrine of “state equitable abstention” has operated to achieve equivalent results, as in Tall Club of Silicon Valley v. Alaska Airlines\textsuperscript{73} (inadequate leg room). In summary, to the extent that the alleged injury can be fairly assessed as an artifact of airline enforcement of a not unreasonable policy relating to the provision of a service within the statute’s contemplation (the “price” and “routes” components not having figured prominently in the cases), ADA preemption has proven a stout and reliable defense.\textsuperscript{74} That being the case, there need be no hesitation in denying a ticketing, boarding, or seating claim where liability is unequivocally absent.

A cautionary note is injected by cases not exhibiting a close enough nexus between the airline conduct complained of and an airline policy relating to the provision of a service. For example, in Gill v. JetBlue Airways Corp., the airline dropped a disabled passenger out of his chair, an act which was adjudged simple

\begin{itemize}
\item \textsuperscript{69} 116 S.W.3d 745, 747 (Tex. 2003).
\item \textsuperscript{70} 864 So. 2d 413 (Table) ( Fla. Dist. Ct. App. Dec. 19, 2003) (unpublished).
\item \textsuperscript{72} 366 F.3d 380, 386 (5th Cir. 2004).
\item \textsuperscript{74} Preemption ultimately depends on the law of the federal circuit which will govern. While all circuits have upheld ADA preemption, they have interpreted the closeness of the required nexus differently, leading to differing results on similar facts. Where preemption fails, the matter will be determined on the merits. See generally Christopher R. Christensen et al., Courts Interpret the Meaning of “State Law” Under the Airline Deregulation Act, CONDON FORSYTH (Jan. 10, 2014), available at http://www.condonlaw.com/2014/01/erika-maurice/.
\end{itemize}
negligence with too tenuous a relation to enforcement of any service policy, and preemption failed. The point cannot be overstressed, therefore, that even though ADA preemption forms the ultimate legal bulwark against alleged torts occurring in the customer-contact arena, where the conduct complained of appears more negligence than policy, preemption will not rescue an improvident denial.

IX. OVERHEAD BINS—A HARD CASE

The overhead bin (OHB) fallen-object case, because of its most salient feature—the inexorable question of the degree of provable airline fault—comprises a claim category qualifying as sui generis. A first line of inquiry in an OHB case would be the extent of provable crewmember involvement in producing the claimed injury. Where crewmember participation in an OHB incident is in evidence (as in crew having touched the bin door or its contents) in combination with proved injury, efficiency may trump abstract justice by the expediency of a goodwill settlement offer admitting no fault. A reason for this is that if the claim goes to suit, the causation question devolves down to a jury fact question, which can be dangerous for the reason that juries tend to resolve difficult fact questions in favor of injured plaintiffs. This proffered tack should govern a fortiori where active crewmember involvement is shown—as in either supervising the stowage of articles, helping to stow other articles, or touching the door of a bin from which articles fell—situations where a jury could very easily mistake peripheral involvement for primary responsibility.

As to whether the hoary carrier duty of “utmost care” might act to regulate cabin activities, a split of authority exists, the better view being that this maxim applies to the operation of the instrumentality that actually creates the additional risk sought to be controlled—the aircraft—and not to routine passenger care activities such as seating passengers and preparing the cabin for departure. Winning OHB cases have examined the extent of the crewmember duty owed, as in Allen v. Delta Airlines, Inc. and the factual matter of breach of alleged crewmember duties, as in

76 No. CV-01-0069 (DGT), 2003 WL 21672746, at *6 (E.D.N.Y. July 3, 2003) (holding there is no flight attendant duty to secure bin door during boarding).
Lagleva v. Southwest Airlines,77 and Benton v. Southwest Airlines Co.78

The cases suggest that denial is appropriate where a good showing of flight attendant participation in helping to produce the alleged injury is lacking. This is especially true for a charge of flight attendant failure to assist in article stowage or the closing of bin doors during boarding, where injury is reported. These charges would in fact constitute a prime example of misapprehending air carrier duties, for while flight attendants are tasked with the safety-related duties of ensuring overhead bins are properly packed and closed prior to aircraft movement, flight attendants are not tasked to either touch or stow articles although this courtesy is routinely extended.

In point of fact, higher priority cabin preparation and cabin safety duties inevitably take precedence over any ascribed flight attendant duty concerning article stowage. A main reason for this is that each flight attendant can have as many as fifty passengers to supervise and seat, a responsibility made more complex by the short turnaround times extant in today’s multi-leg schedules.79 This prioritization principle should apply a fortiori to the charge that flight attendants neglected to prevent “other passenger” incidents, as explained in this actual denial (the claim having been abandoned): “While flight attendants do have duties with respect to cabin management, they cannot be everywhere at all times, and it is foreseeable that a passenger might accidentally injure another while flight attendants are otherwise occupied with higher priority duties.”

Injury sustained on an international flight is subject to different treatment in that Montreal (or Warsaw for pre-2004 cases) analysis first consists of determining if an Article 17 accident occurred so as to confer jurisdiction.80 To find a Montreal accident, we briefly revisit the Supreme Court “accident” rubric from Saks as to whether (1) the incident consisted of an “unexpected or unusual event or happening that [was] external to the passenger”; with (2) the happenstance not deriving from “the passenger’s own internal reaction to the usual, normal, and ex-

79 The 50 to 1 maximum ratio of passengers to flight attendants is contained in the federal aviation regulations (FARs), codified at 14 C.F.R. § 121.391 (2015).
pected operation of the aircraft." A leading case finding a Montreal accident was Olympic Airways v. Husain, where crew inaction to avert a medical emergency was held to be an accident. In its application to an OHB case, see Smith v. American Airlines, Inc., where a falling object was held to be an accident. The takeaway for international flight is that where the facts reflect that the injury resulted from a surprise event external to the claimant, it qualifies as an Article 17 accident, with the treaty imposing strict liability. All that remains is to settle on damages.

X. THE "SAFETY-NEXUS" CASES

Denying a claim on the basis of no airline negligence—think of the "other-passenger," Act of God, or "no crewmember involvement" type of denial—could spur a lawsuit charging a violation of the federal safety rule proscribing careless or reckless operation of an aircraft. If a complainant is able to present admissible evidence sufficient to survive summary judgment that the alleged negligence violates the federal standard, then she is in court with her case. As the cases have shown, however, the federal standard is a high bar, and preemption is the usual result. See, for example, Margolies-Mezvinsky v. US Air Corp. (no admissible evidence presented to show violation of the FAA standard in turbulence encounter or the other-passenger falling object charge); Allen v. American Airlines, Inc. (no evidence presented to show violation of the FAA standard in an OHB other-passenger incident); and Bomanski v. US Airways Group, Inc. (case facts do not meet federal standard in OHB "other-passenger" incident).

81 Id. at 405.
84 See Montreal Convention, supra note 1, and accompanying text concerning Montreal strict liability.
85 See 14 C.F.R. 91.15 (2015); see also supra note 28 and accompanying text for an introduction to the Federal Aviation Regulation's "careless and reckless" rule.
86 See Abdullah v. Am. Airlines, 181 F.3d 363, 365 (3d Cir. 1999); see also supra Part III for discussion of the Abdullah decision and federal preemption of state-based claims for injury aboard an airliner.
It would thus appear that the other-passenger OHB incident charging violation of the federal rule is bound for preemption. Therefore, if research confirms no palpable crew negligence in the other-passenger, Act of God, or no crewmember involvement case, claims are safely denied—with FAA preemption forming the ultimate legal bulwark in the event of a lawsuit.

XI. EJECTMENT AND FAILURE TO CARRY CLAIMS

Ejectment and failure to carry claims—a notorious class due to adverse publicity attaching to allegations of tortious profiling—divide themselves into two main types: (1) cases with provable actual airline employee animus or illegal conduct giving rise to probable liability; and (2) claims subject to the specific FAA safety provision where a passenger’s continued presence was deemed by crewmembers, in the words of the statute, “inimical to safety.”90 The right, indeed the obligation, of a carrier to exclude a passenger deemed a hazard to safety—long recognized in the common law—is codified in this statute.91 A progenitor case establishing the principle that ejectment of a schizophrenic exhibiting symptoms was not arbitrary or capricious is Williams v. Trans World Airlines.92 More recent cases include Rubin v. United Air Lines, Inc.93 (passenger made a fuss about not getting first class and could not be controlled); Christel v. AMR Corp.94 (captain was entitled to rely on flight attendant representations to eject plaintiff even though a case of flight attendant misconduct was proved); and Cerqueira v. American Airlines, Inc.95 (racial discrimination complaint trumped by safety).

Conversely, if investigation shows that employee conduct was facially illegal or with no reasonable connection to enforcement of an airline policy concerning a “price” or “service,” prudence dictates settling rather than engaging in court tests.96 These erstwhile preemption cases make up a cautionary tale for airlines: Delta Airlines v. Cook97 (airline’s failure to remove a suspicious

91 Id.
92 509 F.2d 942, 949 (2d Cir. 1975).
95 520 F.3d 1, 11 (1st Cir. 2008).
96 See Airline Deregulation Act, Pub. L. No. 95-504, 49 U.S.C. § 1371 et seq. (1978) and discussion supra Part VIII of the ADA’s insulation of an airline’s price and service policies from state tort suits. Where such policies are not implicated by the facts of a case, the ADA can be assumed not to apply.
passenger was preempted by neither ADA nor FAA); and Williams v. Midwest Airlines, Inc.\(^{98}\) (neither contract nor racial discrimination claims were preempted by the Airline Deregulation Act).

XII. CONCLUSION

Traditional negligence principles can handily determine many, if not most, airline injury claims, with little or no loss in efficiency. However, the application of specialized aviation and airline precepts, as discussed here, to the investigation and analysis can leaven results to make available savings previously forgone. The power of an expert-informed explanation of denial—whether couched in terms of simple physics, physiology, or aircraft design and operating limitations—to garner claimant assent cannot be overestimated. Where assent is not forthcoming, ensuing lawsuits have been shown to be subject, with few exceptions, to a stolid and robust preemption defense (which legally replicates the conclusive effect of a denial). Cases failing preemption will, on the other hand, rise or fall on the merits, which, except in close cases, should vindicate a properly founded denial. In contrast, where the risk of jury confusion or misplaced sympathy is real, a settlement mind-set will acquit itself as the better part of valor.

\(^{98}\) 321 F. Supp. 2d 993, 996 (E.D. Wis. 2004).