

FASTEN SEATBELT WHILE SEATED

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Seat Belt Signs

Serious injuries during turbulence influence the FAA's latest advice.

Turbulence is the leading cause of in-flight injuries involving American air carriers, based on a recent review of data by analysts within the U.S. Federal Aviation Administration (FAA) Flight Standards Service. Without detailing three cited incidents, the FAA has reminded the air carrier industry — via an *Information For Operators (InFO)* bulletin — of the need to adhere to standard operating procedures (SOPs). Turbulence encounters with injuries were described during 2010, however, in the agency's Accident/Incident Data System and in last year's final report by the U.S. National Transportation Safety Board (NTSB) about a 2009 accident.

The NTSB report describes an encounter involving an Airbus A320-232 operated by JetBlue Airways (ASW, 7/10, p. 57). Two passengers — one not wearing a seat belt and the other in a lavatory — suffered serious injuries, and two

passengers received minor injuries. The aircraft was descending through 12,500 ft when it flew through a small cumulus cloud. “The captain had made a passenger announcement during initial descent and prior to the turbulence encounter, emphasizing the need for passengers to take their seats and fasten their seat belts when the seat belt sign was illuminated,” the report said. “Additionally, a flight attendant [had] made a public [address] announcement when the seat belt sign was illuminated. The seat belt sign had been illuminated since 19,000 ft (about four minutes prior [to the encounter]), and the airplane was not flying through any precipitation. The captain had also instructed the flight attendants via intercom to sit down a few minutes prior to the turbulence encounter.”

Incidents With Injuries

On July 20, 2010, near Denver, 13 passengers and four flight attendants were

injured when a United Airlines Boeing 777-200 encountered severe turbulence and diverted for medical assistance. The FAA's report said, “Ten minutes prior to the [turbulence] encounter, the [flight] crew turned on seat belt signs, made an announcement and had flight attendants be seated. In an area of light precipitation indicated on the radar, the flight encountered a four-second severe turbulence event of plus/minus 1 g [one times standard gravitational acceleration].”

On July 16, 2010, near Birmingham, Alabama, the flight crew of an unspecified airliner type operated by Shuttle America encountered severe turbulence, causing a minor injury to one flight attendant. “The captain requested an immediate turn but was unable to avoid penetrating the storm cell during the turn,” the report said.

“The crew reported first entering an area of extreme precipitation at Flight

Level [FL] 370, followed by severe turbulence, autopilot disengagement and subsequent loss of control after inadvertently entering the storm cell.”

On Feb. 27, 2010, near Redmond, Oregon, an unspecified airliner type operated by Horizon Air encountered severe turbulence at FL 230, resulting in one passenger receiving injuries for which emergency medical technicians advised seeing a physician. The seat belt sign was illuminated. “The [flight crew] reported the turbulence occurred two or three times in a period lasting 30-45 seconds,” the FAA report said. “The pilot reported a loss of 1,500 ft in altitude. ... One passenger released her seat belt after the initial occurrence to retrieve her purse, which had fallen into the aisle. When the second turbulence happened, she hit her head on the overhead bins, and then hit her chest on the armrest.”

The bulletin also urges airlines to stress the relevant FAA requirements for enforcing passenger compliance with seat belt signs and related crewmember instructions.

Turbulence Countermeasures

Tactics fall into categories of preflight planning, in-flight situational awareness, postflight debriefing and encounter reporting. The FAA said the following tactics deserve emphasis:

- Pilots should obtain current turbulence reports from their weather service.
- Passengers who ignore crewmember instructions to fasten seat belts should receive a written warning, such as a small card that says, “Turbulence Happens – Click it, don’t risk it.”
- Flight attendant training should include scenarios to practice quick response, managing service carts, and improved communication including commands such as “Turbulence! Tighten seat belts.”
- Dispatchers should proactively provide “ride reports,” and pilots consistently should share knowledge of forecast turbulence with flight attendants and passengers in time for adjustments to cabin service.
- All crewmembers should adhere to SOPs regarding announcements on night flights and remind passengers to keep their seat belts visible.
- Crewmembers should adapt their announcements to specific facts about turbulence severity and “the approximate time that the seatbelt sign will stay illuminated.”
- If severe turbulence is encountered, the flight crew should instruct the cabin crew to follow up with cabin checks of the effects.
- The cabin crew should “caution passengers that they should not attempt to open overhead bins when the seat belt sign is illuminated.”
- Cabin crewmembers should monitor long lines forming around a lavatory, especially in light of the turbulence-injury threat.
- Cabin crews should employ visual aids such as seat belt extenders or briefing cards, and point to seat belt signs during oral announcements and while checking compliance.
- Flight attendants should adapt communication for special passengers such as those who speak a different language; people who are elderly, deaf or hearing impaired or have limited mobility; and those traveling with small children. ➔

Except where noted, this article is based on “Seat Belt Use and Passenger Injuries in Turbulence,” InFO no. 11001, published by the FAA on Jan. 6, 2011.



Guess which body was not designed to withstand turbulence?

The human body can do many wonderful things. To withstand turbulence, however, it needs some help—from a **safety belt**. Wear it buckled throughout the flight whenever you fly. Then if turbulence happens, you’ll come through with flying colors. To learn more, visit www.faa.gov.



TURBULENCE
happens.