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of Transportation
**Federal Aviation
Administration**

InFO

Information for Operators

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Flight Standards Service
Washington, DC

http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/info

An InFO contains valuable information for operators that should help them meet certain administrative, regulatory, or operational requirements with relatively low urgency or impact on safety.

Subject: Seat Belt Use and Passenger Injuries in Turbulence

Purpose: This InFO works to increase public awareness about the increased risk of injury to passengers and cabin crewmembers when passengers ignore the seat belt sign. This InFO calls attention to the importance of adherence to established operating procedures and strategies to reduce in-flight injuries.

Background: Recent research by the Flight Standards Service Analysis and Information Staff (AFS-20) confirms that turbulence is the leading cause of in-flight injuries. Government and industry partners in the Commercial Aviation Safety Team (CAST) developed Advisory Circular 120-88A in an effort to minimize the risk of passenger and cabin crewmember injuries during turbulence. Three recent turbulence incidents on air carriers have renewed interest in reviewing strategies to improve communication and coordination.

Discussion: Crewmember preflight planning, in-flight situational awareness, post flight debriefing, and safety system reporting are essential elements to reduce the likelihood of in-flight injury. Further, there is a regulatory requirement for seatbelt compliance (14 CFR part 121 § 121.317) and adherence to crewmember instructions (14 CFR part 91, § 91.11). These regulations are found at the following link:

http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?sid=6dc044bc2757253362b39a2cacfd4237&c=ecfr&tpl=/ecfrbrowse/Title14/14tab_02.tpl

Following are actions that air carriers, pilots, and cabin crewmembers may use to improve passengers' seat belt use:

- Visit <http://aviationweather.gov/adds/pireps/displayPireps.php> for current turbulence reports from the weather service.
- Develop business size warning cards with "Turbulence Happens – Click it, don't risk it" to issue a written warning to passengers that ignore crewmember instructions.
- Develop turbulence scenarios for crewmember initial and recurrent training to practice quick response in-flight turbulence procedures. Discuss what to do with service carts. Evaluate communication and commands to protect passengers. (Turbulence! Tighten seat belts)
- Dispatchers proactively provide "ride reports" to flights and pilots share "ride reports" with crewmembers and passengers related to any adjustments in service based on forecast turbulence.
- Crewmembers should follow standard operating procedures (SOP) regarding announcements on night flights and remind passengers to keep seatbelts visible.

- Crewmembers personalize seat belt sign announcements with anticipated turbulence severity and the approximate time and that the seatbelt sign will stay illuminated.
- Pilots, if severe turbulence is encountered signal crewmembers to follow up after the turbulence incident with cabin checks
- Caution passengers that they should not attempt to open overhead bins when the seat belt sign is illuminated.
- Cabin crewmembers should be aware that passenger risk is increased when long lines form around the lavatory.
- Cabin crewmembers should consider alternate methods to alert special passengers such as; the elderly, passengers that do not speak English, deaf or hearing impaired, passengers with limited mobility, passengers traveling with small children. Encourage the use of visual aids such as seat belt extenders or briefing cards and pointing to seatbelt signs combined with oral announcements during seatbelt compliance checks.
- Remind passengers that regulations require compliance with the seatbelt sign and crewmember instructions.
- Share information through company safety reporting system to analyze and continuously improve procedures and strategies for seat belt compliance.

Recommended Action: Directors of Safety and Directors of Operations (Part 121, 135, 91K); Directors of operations (Part 135); training managers and crewmembers; should ensure that their carriers have a proactive program encouraging passenger seat belt use and that crewmembers are aware of the information in this InFO.

References:

- Turbulence: Staying Safe- http://www.faa.gov/passengers/fly_safe/turbulence/
- Media Kit- http://www.faa.gov/passengers/fly_safe/media_kit/
- Turbulence Awareness- http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/turbulence/
- Computer Simulation of an Airplane Cabin in Turbulence (WMV) - http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/turbulence/media/cabin_turbulence.aspx
- Advisory Circular 120-88 Preventing Injuries Caused by Turbulence (PDF) - [http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/ec449bf3dcc392a2862573fa0051dcae/\\$FILE/AC%20120-88%20CHG%201.pdf](http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/ec449bf3dcc392a2862573fa0051dcae/$FILE/AC%20120-88%20CHG%201.pdf)
- *Commercial Aviation Safety Team (CAST) Study- http://www.cast-safety.org/pdf/jsat_turbulence.pdf
- Aeronautical Information Manual, Turbulence Classification and Criteria Reporting Table http://www.faa.gov/air_traffic/publications/ATpubs/AIM/Chap7/aim0701.html

Contact: Questions or comments regarding operating practice or training should be directed to DK Deaderick, Part 121 Air Carrier Operations Branch, AFS-220 at 202-267-7480. Questions or comments on research data should be directed to AFS-20 at 703-661-0534.