

# Turbulence in the Cabin

## The Flight Attendant Perspective

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# Perspective Overview

- Who I am....

I am a Flight Attendant!

# Overview

- Overview / Data
  - Impact on Safety
- Coordination and Communication
  - Do we all see it the same way?
- Recommendations
  - To ensure a more effective response and review of the issue

# Overview

- Why is AFA here?
  - Death of a passenger – United flight 826
    - Dec 28, 1997, Tokyo to Honolulu
    - 374 pax & 19 crew – 15 pax & 3 FAs serious injuries
    - Passengers not wearing seatbelts at the time
  - Injuries to our members
    - In 1996, one carrier experienced more than 310 turbulence-related injuries resulting in 3,500 lost work days.

# How many people have been injured during turbulence?\*

	Passenger	Crew	Total
2002	45	16	61
2003	16	32	48
2004	6	29	35
2005	7	15	22
2006	5	10	15
2007	2	10	12
2008	4	8	12
2009	53	22	75
2010	51	25	76
2011	3	15	18
2012	11	21	32
2013	11	13	24

\*[http://www.faa.gov/news/fact\\_sheets/news\\_story.cfm?newsId=14195](http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=14195)

# Aircraft Cabin Turbulence Warning Experiment (ACTWE)

- Warning Technology Development
- What time requirements are needed in the cabin to configure it for safe transit in turbulence
- October 1, 2, and 3, 2002 experiment
  - Full scale 747 wide body aircraft simulator
  - Human passenger subjects
  - Line Flight Attendants from 3 airlines

# ACTWE

- Series of timed cabin prep scenarios:
  - After movie restroom call (A)
  - Snack-pack situation before landing (B)
  - Full meal service (C)
- Cabin Ready Time:
  - The time from first announcement of hazard until the cabin reaches a defined readiness state

# ACTWE Results\*

In terms of time and % seated & belted

<b>All procedure 95% composite pax seating</b>	<b>95 seconds</b>
Baseline procedure 95% composite pax seating	101 seconds
Expedited procedure 95% composite pax seating	86 seconds

<b>A (movie) 95% composite pax seating</b>	<b>79 seconds</b>
B (snack) 95% composite pax seating	99 seconds
C (full) 95% composite pax seating	96 seconds

\*More results not shown

# ACTWE Results

## Flight Attendant Seating Times

- Substantial variability among the three airlines; explanation unknown but likely rooted in difference in training and experience

Composite time FA seating

<b>A (movie)</b>	<b>262 seconds</b>
B (snack)	402 seconds
C (full)	606 seconds

Composite time FA seating

<b>Crew 1</b>	<b>507 seconds</b>
Crew 2	554 seconds
Crew 3	606 seconds

Expedited FA seating time varied from 75 seconds to 240 seconds

# Coordination & Communication

- Advance warning is important
  - How is development of new systems progressing
- Briefings are important!
  - Preflight and prior to an event
  - Timely notification is imperative
  - Phraseology should be standardized
  - Expected duration and how an “all-clear” will be communicated

# Coordination & Communication

- When should service-related duties be discontinued

Light	Moderate	Severe
Some bumps	Rapid bumps; drinks splash	Large abrupt changes; unsecured items can be tossed about
PA - belts on, stay seated	PA - belts on, advise be seated	PA – be seated immediately
Continue service ( <b>with caution</b> ); seatbelt compliance check	“Stop, stow, secure” Possible compliance check	“Stop, drop, hold-on” No compliance check; check for injuries after

- The cabin experience is different than the flight deck experience

# Coordination & Communication

- Education & Training
  - How much is really being done – we should be reviewing what has happened at the airline
  - Have we ever really “trained” for an expedited pickup of supplies
  - CRM topics for joint training
  - Truly emphasize the importance of FA’s own personal safety

# Recommendations

Improvements have been made but more can be done:

Develop clear & concise phraseology

Better understanding of “expect turbulence and prepare the cabin early for landing” (urgency level)

Fully empower FAs to stop a service

Not just a flight deck decision

Corporate culture change

# Recommendations

More official investigations into injuries

A complete review promotes change

The next concept for training

Practice an expedited cabin prep related to service items not just passengers

Crewmembers understanding of the time it takes to “prepare for an early clean-up”

Final cabin prep at 18,000 instead of 10,000

A group of people are gathered in a meeting room. In the background, a large screen displays a presentation slide with a blue header and a white body containing text and a small image. The room is dimly lit, and the people are dressed in business attire. The word "Questions?" is overlaid in the center of the image in a yellow, serif font.

Questions?