

IV. PANEL PRESENTATIONS

A. JOINT SESSION

OPERATIONAL DRIVERS OF FATIGUE: NATIONAL TRANSPORTATION SAFETY BOARD FINDINGS



*June 17, 2008
10:15 – 11:30*

Panel Overview

The “*Operational Drivers of Fatigue: NTSB Findings*” session was chaired by Dr. Vern Ellingstad of the National Transportation Safety Board (NTSB) and included three presentations by human factors experts, all from the NTSB. Dr. Malcom Brenner talked about different operational factors in both non-fatal and fatal airline accidents, Dr. William Bramble discussed causes of air controller fatigue and Dr. Jana Price closed by presenting the history and evolution of NTSB fatigue related recommendations. The session was intended to provide the audience with an understanding of operational factors commonly identified during NTSB accident investigations as contributing to fatigue related events during both flight and air traffic control operations. Specific fatigue related recommendations made over the years by the NTSB were also reviewed.

Fatigue has been, and continues to be, a contributing factor in several aviation accidents. Currently, the NTSB has seven aviation fatigue specific recommendations. Since 1993, the Safety Board has determined that fatigue contributed to seven air carrier accidents within the United States, resulting in 250 fatalities and 52 serious injuries. Recent events

continually highlight the operational relevance of fatigue among flight crew; it is not uncommon that crew fall asleep while flying. NTSB investigations have found that flight crew on long duty days (a shift of more than 13 hours) exhibit a disproportionate amount of accidents when compared to those on short duty days (a shift of less than 13 hours). The longer the crews are awake the more errors they tend to commit, especially cognitive errors such as decision-making.

During NTSB investigations, the causes of fatigue are commonly divided into operational and personal factors. Operational factors contributing to fatigue induced by the workplace include short rest periods between shifts, which can be as short as eight hours under current regulations, rapid rotation of shift start times, which can disrupt circadian rhythms, working early morning and graveyard shifts, and duration of commute, among others. Equally important are personal drivers of fatigue, which are largely habits and behaviors controlled by the individual, such as ensuring proper duration of rest. However, personal drivers of fatigue also depend on many factors such as the presence of sleep disorders, circadian variability, additional employment, and use of alcohol and stimulants.

*AVIATION FATIGUE MANAGEMENT SYMPOSIUM:
PARTNERSHIPS FOR SOLUTIONS*

The NTSB's Most Wanted Safety Improvements currently includes fatigue risk management. As stressed during the panel, operational safeguards, or defenses that can prevent or mitigate flight crew errors (e.g., Fatigue Risk Management System) are critically important and should include both an educational component to increase awareness of fatigue-related issues and multiple fatigue management strategies. It was also recommended that Fatigue Risk Management Systems (FRMS) provide guidance based on empirical evidence, including information about the content and implementation of these systems. Future milestones can include determining how much fatigue risk is acceptable in terms of safety, and determining which strategies for managing fatigue will prove most effective within the field of aviation. FRMSs, once implemented, will require regular program evaluation to determine effectiveness in mitigating fatigue and reducing accident rates by improving performance.