Effects of Commuting on Pilot Fatigue: An NTSB Perspective

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In 1967, the Congress created an independent NTSB within the newly formed Department of Transportation (DOT); expanded the NTSB’s authority to include all modes of transportation.
In 1974, Congress made the NTSB completely independent of the DOT.
Mission

The NTSB is charged with:

1) determining the probable cause of transportation accidents

2) making recommendations to prevent their recurrence
The NTSB is Responsible for Investigating:

- Aviation, highway, rail, marine, pipeline, and hazardous material accidents
Major product: safety recommendations

Moral compass and industry conscience
• 130,000+ accident investigations
• 13,000+ safety recommendations
• 82% acceptance rate
Go! Flight 1002

- early starts, multiple segment days, sleep apnea
Honorable John K. Lauber:

No Accident ≠ Safe Operation
Guantanamo Bay Cuba

First NTSB aviation accident to cite fatigue as probable cause

• acute sleep loss, sleep debt, circadian disruption
NTSB Recommendations

• MOST WANTED since 1990

• 150+ fatigue recommendations
Complex Issue: Requires Multiple Solutions

- Scheduling Policies and Practices
- Education
- Organizational Strategies
- Raising Awareness
- Healthy Sleep
- Vehicle and Environmental Strategies
- Research and Evaluation
After Traveling Eastward

Sleep periods

Individuals

Home Destination
After Traveling Westward

Home Destination
Continental Connection (Colgan Air) Buffalo NY (February 12, 2009)

- 50 fatalities; commuting, acute sleep loss
Crew Fatigue Factors

• Captain
  - acute sleep loss (lounge, interrupted)
  - cumulative sleep debt (6 – 12 hrs)
  - awake at least 15 hrs
  - landing at normal bedtime

• First Officer
  - commuted overnight from Seattle
  - 8.5 hrs sleep in previous 34 hrs
    (in-flight, crew room)
Geographic Distribution of Colgan Air Pilots Based at Newark, New Jersey

137 EWR pilots: 93 (68%) commuted

Less than 100 miles: 45 Connecticut, New Jersey, New York, Pennsylvania
100 to 199: 13 Maryland, Massachusetts, New York, Pennsylvania, Rhode Island
200 to 399: 29 Maine, Massachusetts, New Hampshire, New York, North Carolina, Pennsylvania, Virginia
400 to 999: 20 Florida, Georgia, Illinois, Iowa, Michigan, Ohio, South Carolina, Tennessee, West Virginia
1,000 or more: 29 California, Colorado, Florida, Louisiana, Minnesota, Nevada, Texas, Utah, Washington
24. The pilots’ performance was likely impaired because of fatigue, but the extent of their impairment and the degree to which it contributed to the performance deficiencies that occurred during the flight cannot be conclusively determined.

25. All pilots, including those who commute to their home base of operations, have a personal responsibility to wisely manage their off-duty time and effectively use available rest periods so that they can arrive for work fit for duty; the accident pilots did not do so by using an inappropriate facility during their last rest period before the accident flight.

26. Colgan Air did not proactively address the pilot fatigue hazards associated with operations at a predominantly commuter base.

27. Operators have a responsibility to identify risks associated with commuting, implement strategies to mitigate these risks, and ensure that their commuting pilots are fit for duty.
Require all 14 Code of Federal Regulations Part 121, 135, and 91K operators to address fatigue risks associated with commuting, including identifying pilots who commute, establishing policy and guidance to mitigate fatigue risks for commuting pilots, using scheduling practices to minimize opportunities for fatigue in commuting pilots, and developing or identifying rest facilities for commuting pilots. (A-10-16)
Commuting Considerations

- Complexity
  - fatigue science/physiology/individuals
  - operational demand/experience/history
  - mutual benefits/shared responsibility
  - economics
  - lifestyle

- Definition?

- Scheduling
  - W coast crew commuting for E coast flying
Commuting Considerations

• Science
  - data available/needs
  - methodologies
  - peer review process

• Fitness for Duty

• Regulatory vs advisory approach

• Prevent recurrence?