

“Factors Contributing to Fatigue in Air Traffic Control Settings”

WILLIAM J. BRAMBLE, JR., PH.D.

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Abstract

In recent years, the Safety Board has investigated numerous runway safety incidents where deficiencies in air traffic controller performance have been identified. Controller fatigue is often documented in the investigation of such incidents, and fatigue is occasionally cited as a factor that contributed to such occurrences. In this presentation, the author will discuss operational and personal factors that appear to have contributed to controller fatigue in some runway safety incidents, regardless of whether such factors have been officially determined to be causal to such incidents. Operational drivers of fatigue include the restriction of sleep that results from short rest periods between shifts, and the disruption of normal sleeping patterns that result from the rapid rotation of shift start times. Personal drivers of fatigue include sub-optimal utilization of off-duty rest periods. Other factors that investigative findings indicate may contribute to controller fatigue or exacerbate its effects on system performance include the presence of untreated sleep disorders, increased workload resulting from the combination of active control positions, decreased vigilance resulting from continuous monitoring assignments, inconsistent use of memory aids, and the use of sub-optimal procedures for exchanging information during position relief. Investigative interviews have also revealed a lack of awareness among some air traffic control personnel about the predictable effects of fatigue on human performance and the

availability of strategies to minimize fatigue when assigned to shift work.

Main Points

- The Safety board has documented controller fatigue in investigations of runway safety incidents where controller performance deficiencies have been identified.
- Drivers of fatigue include shift-scheduling practices and sub-optimal utilization of rest periods, but a variety of other factors also contribute to fatigue and allow its performance-degrading effects to influence system performance.
- There is a lack of awareness among some air traffic control personnel about the effects of fatigue on human performance and about strategies that can be used to minimize fatigue when assigned to shift work.

A copy of Dr. William J. Bramble’s biographical information and presentation slides are provided in Appendix B.