



Contemporary issues: Fatigue impacts of employee commutes

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Understanding the pilot lifestyle – a prerequisite for success

On February 12, 2009, a twin turboprop piloted by a tired crew crashed onto a residential neighbourhood in up-state New York. Fifty people died. The Flight 3407 Continental Connection service was operated by regional carrier Colgan Air. Although based at Newark (EWR) neither pilot had accommodation near the airport. The Captain commuted from Tampa, Florida, and the First Officer from Seattle on the Pacific Seaboard. The Captain spent the night of February 11/12 in Colgan's crew room. The First Officer spent the night dead-heading to EWR via Memphis on FedEx flights. The Captain logged into Colgan's computer system at 03:10 and 07:26. He can't have slept well. The First Officer arrived at EWR at 06:30 on February 12, some 33 hours after waking in Seattle. Although she slept on her FedEx flights and in the crew room, these sleeps amounted to no more than nine hours in total. Broken sleep is less restorative than continuous, block sleep. The crew's first two sectors were cancelled. They were cleared for take-off at 21:18 and crashed on approach at 22:17. The Captain had mishandled a stall warning, leading to a loss of control. Fatigue contributed to his poor performance.

Workplace culture may be defined as 'the way we do things around here'. Workplace cultures are usually hidden from public gaze. They are informal and tacit. Thirty-six percent of Colgan Air's Newark-based pilots lived more than 400 miles from Newark International. A culture of long-distance commuting existed amongst Colgan's pilots. According to the Federal Aviation Authority's (FAA's) accident report the senior pilot responsible for Colgan's Newark operation 'did not know the number of commuting pilots at EWR'. The National Transportation Safety Board (NTSB) says that Colgan failed to address the fatigue issues associated with employee commutes.

Shocked by the circumstances of the Colgan Air accident, the United States House of Representatives passed the 'Airline Safety and Pilot Training Improvement Act' (HR3371). Besides encouraging the FAA to adopt a risk/evidence-based approach to rulemaking, HR3371 requires the Administration to commission the U.S. National Academy of Sciences (NAS) to investigate pilot commutes-to-work. The NAS study will consider:

- (A) the prevalence of pilot commuting in the commercial air carrier industry, including the number and percentage of pilots who commute;

- (B) information relating to commuting by pilots, including distances travelled, time zones crossed, time spent, and methods used;
- (C) research on the impact of commuting on pilot fatigue, sleep, and circadian rhythms;
- (D) commuting policies of commercial air carriers (including passenger and all-cargo air carriers), including pilot check-in requirements and sick leave and fatigue policies;
- (E) post-conference materials from the Federal Aviation Administration's June 2008 symposium entitled 'Aviation Fatigue Management Symposium: Partnerships for Solutions';
- (F) Federal Aviation Administration and international policies and guidance regarding commuting (HR3371)

HR3371 requires the NAS to submit its final report to the FAA 'not later than 6 months after the date of entering into arrangements' (HR3371).

It would be wrong – indeed dangerous – to assume that Europe is immune to the problem of long-distance commutes to work by pilots. There is much anecdotal evidence of pilots commuting many hundreds of miles to work by car, train and commercial air service. After commuting these pilots may operate four or more sectors, getting to bed down-route up to thirty hours after waking at home. This practice generates a latent risk within Europe's aviation system. Long periods of wakefulness compromise individual performance. Performance impacts of fatigue include:

- Degraded judgment
- Degraded situation awareness
- Degraded decision-making
- Degraded memory
- Slowed reactions
- Poor concentration
- Fixation (coning of attention)
- Degraded mood
- Reduced work efficiency (e.g. less able to integrate information)
- More tolerant of poor performance
- Degraded teamworking

As noted by the Civil Aviation Authority's (CAA's) Safety Regulation Group: 'A blood alcohol concentration (BAC) level of 0.085% ... is just over the permitted level for drivers of road vehicles in the UK. This is approximately the level reached ... after 24 hours of continuous wakefulness'. Put another way, after 24 hours awake pilots will perform as if they are over the legal limit for driving. As performance reduces, risk exposure increases.

The way in which European commercial aviation is regulated is changing. Responsibilities are migrating from national aviation authorities to the European Aviation Safety Agency (EASA). By 2012 EASA will be responsible for Europe's Flight Time Limitations (FTLs). All regulators develop a model of the thing they are regulating, whether it be gas supply or aviation. The more accurate the model, the better the regulation. Regulations that, as far as is reasonably practicable, reflect and accommodate the lived reality of the pilot lifestyle will promote safety and economic efficiency. Regulations that do not reflect the lived reality of the pilot lifestyle will compromise safety and efficiency. For example, research has shown that many night-freight pilots find it difficult to obtain adequate day-time sleep in busy down-route hotels, resulting in cumulative fatigue and performance decrements. Regulations that accommodate this reality will help maintain safety margins. Regulations that ignore this reality will erode safety margins.

The key to maintaining safety margins is to develop an understanding of the lived reality of the pilot lifestyle. The resulting model can be used to inform policymaking. This lesson has been taken on board by the U.S. House of Representatives: the NAS study will map an important dimension (commuting) of the pilot lifestyle in the United States, providing the FAA with quantitative and qualitative data it can use in its policy deliberations. Improvements in the quality of policymaking are anticipated.

A similar, and perhaps broader study is required in Europe. Sociological studies of pilots are few and far between. Little is known of pilots' working and home lives. Increasingly pilots are constructed or framed as mere factors of production, like aircraft or ground equipment. Yet pilots are a prime resource – the last line of defence when things go wrong, as Captain Chesley Sullenberger demonstrated when he ditched his stricken aircraft in the Hudson River following a bird strike. Sullenberger's out-of-the-box thinking saved the lives of everyone on board. It ill-serves the industry and the travelling public not to seek a broader and deeper understanding of the pilot

lifestyle. Regulatory requirements that are out of step with pilots' physical and psychological capacities represent a latent risk. European commercial aviation has an enviable safety record. Let us not jeopardise that record by assuming we know how our pilots live their lives. We must follow the U.S. example and investigate the lived reality of the pilot lifestyle. As far as possible, regulations must be tuned to reality.

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