

One obvious hazard of fatigue is that the fatigued flight crew member falls asleep while on duty. This was the scenario in 2008. Air-traffic controllers frantically radioed go! Flight 1002 for 18 minutes on 13 February 2008. According to the National Transportation Safety Board (NTSB), the two go! airline pilots fell asleep while flying from Honolulu to Hilo, cruising past their destination for 18 minutes before waking up and returning for a safe landing.

There is no blood test for fatigue

This falling asleep can also take the form of a microsleep, which is a brief moment (generally between two and thirty seconds) when a person starts to enter the first stage of sleep, possibly with their eyes still open, sometimes for less than a few seconds before regaining consciousness. The person is typically unaware that they have experienced a microsleep and may continue to perform simple repetitive tasks while asleep. For someone performing a routine low-risk task this is not critical. However, for flight crew it is very different. An aircraft travelling at 250 knots on a glide path can cover over 400 feet in one second—the duration of a microsleep.

The safety implications of fatigue in aviation are reinforced by findings in other transport industries. When truck drivers volunteered to wear sleep-monitoring equipment while they worked, researchers were amazed to find that some drivers were showing signs of the first stage of sleep while driving on interstate highways.

Sleep deprivation impairs the brain's effectiveness, with research showing it can produce effects very similar to alcohol consumption. On-the-job performance loss for every hour of wakefulness between 10 and 26 hours is equivalent to about a .004 per cent rise in blood alcohol concentration. Seventeen to 18 hours of wakefulness is usually considered to be equivalent to a blood alcohol concentration of about .05 per cent. In the safety-critical aviation environment, this could result in tragedy.

ARE WE THE BEST JUDGES OF FATIGUE?

People are notoriously poor judges of their own level of fatigue. Asking a fatigued person if they are OK to keep working is a bit like asking someone who is drunk if they are OK to drive.

Even if we are not good judges of how tired we are, we can still keep track of how long we have been awake, how much sleep we have had recently, and the quality of that sleep.