Quantifying Schedule Fatigue

Fatigue is a risk to safety and operational effectiveness. It increases the risk of accidents and absenteeism and diminishes employee health and productivity.

Whilst schedules are often a major contributor to fatigue, they are something organisations have some control over. Quantifying schedule-related fatigue builds understanding of fatigue hotspots, enabling you to make evidence-based decisions to improve the schedule and better manage your operational fatigue risk.

Quantification of fatigue in your schedule

Clockwork utilises bio-mathematical models to analyse both planned and worked schedules to provide you with the answers to key questions:

- What features of our planned and actual schedules are consistently contributing to elevated fatigue levels?
- What is the impact of on-the-day delays or operational changes on fatigue?
- How do fatigue levels change per month and seasonally?
- Do our different bases have different fatigue profiles?
- Are we continually improving?

Assessing the impact of schedule changes

One way in which bio-mathematical models can enhance FRM is by assessing the impact that changes to schedules or alternative schedule designs have on fatigue. For example, fatigue models can help to answer the following questions:

- For my long-haul or ULR operation, how can we schedule crew in the days or weeks prior to the flight to maximise performance and minimise fatigue?
- What is the fatigue impact of delaying the reporting time for specific duties?
- If I change the number of long-haul flight deck crew on an augmented flight, how will the changed in-flight sleep patterns impact fatigue levels at landing?
- What is the best order in which to schedule disruptive short-haul duties in a run of duties?

An analysis of your schedules to assess alternative scheduling options provides you with an in depth understanding of the levels of schedule-related fatigue. At Clockwork, we have extensive experience of using bio-mathematical models, and have developed a suite of metrics that give you a detailed assessment of schedule related-fatigue. Using these metrics, we can work with you to develop Safety Performance Indicators (SPIs) for schedule-related fatigue, for ongoing tracking within your FRM.
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Part of our Fatigue Risk Management Portfolio

Part of our suite of Fatigue Risk Management Training and Consultancy Services, this service forms part of an organisation's journey from understanding FRM to learning how to apply the principles for performance improvement.

Services you might also like to consider

CS23  Building an FRMS
CS24  Fatigue Survey and Focus Groups
CS22  Fatigue Safety Cases and Scientific studies
CS21  Developing Competence to Manage Fatigue Risk

About Clockwork Research

Founded in 2005, Clockwork Research is a leading fatigue risk management consultancy. We deliver innovative and effective fatigue risk management solutions for clients across various sectors of the aviation industry, as well as other safety-critical operating environments, such as the oil and gas and mining sectors. The company’s approach is founded upon a scientific understanding of the impact of human fatigue on safety-critical operations, combined with extensive industry experience and an appreciation of commercial realities.