Workplace Fatigue Wake-up Call

Companies can significantly reduce their fatigue-related exposures with the help of defensive systems like Faid®Safe, which aims to reduce organisational risk and associated costs to create a safer environment for workers and the community.

Long-haul truck driver Darri Haynes hadn't slept in two days before colliding with another truck on the Pacific Highway near Grafton and being incinerated. Fuelled by methamphetamine, the 37-year-old had driven his semi-trailer more than 5400 kilometres in the week leading up to his death. Miraculously, the other driver walked away uninjured. In a test case brought before the Industrial Relations Commission last October, WorkCover NSW successfully prosecuted Haynes' employer under the Occupational Health and Safety Act.

In handing down his judgement, Justice Michael Walton said the case "painted a sobering picture of the risk for long-distance truck drivers of driving when fatigued… fatigue significantly impaired his [Haynes'] ability to drive safely." The judge also criticised the company for failing to ensure rosters allowed enough time for breaks and sleep or provide training on the self-management of fatigue and alertness.[1]

Fatigue is a significant cause of accidents and incidents in a broad range of industries including road transport, aviation, rail, sea-borne cargo, mining, manufacturing, building, hospitality and healthcare. A nurse working a double-shift accidentally gives a patient the wrong drug or dose, a tired kitchen-hand drops a knife, a weary manufacturing plant supervisor doesn't notice something's amiss on the production line…

And a lack of sleep has been a contributing factor in many serious accidents, including:

- the Chernobyl nuclear reactor meltdown (lack of action by shift workers in the early hours of the morning led to disastrous consequences)
- the Exxon Valdez oil spill (caused primarily by the failure of the third mate to properly manoeuvre the vessel because of fatigue and excessive workload)
- the Waterfall train derailment in NSW (fatigue limited the train crew's ability to respond when the driver was incapacitated).

Bob Bridges, Managing Director of InterDynamics, a leading supplier of workplace fatigue-safe support services, training programs and software tools, says insurers are increasingly recognising the relationship between fatigue and loss.

"In the past, risk engineers were reluctant to include fatigue within an organisation's total risk gradings, primarily because of a lack of scientific understanding about its causes and impact," says Bridges. "While they were aware of the dangers posed by fatigue, risk engineers didn't have a rigorous basis for capably assessing the risk.

"That's not the case any more, with insurers increasingly placing emphasis during the underwriting process on the adequacy of an organisation's fatigue safeguards for a wide range of high-hazard industries."

In partnership with Zurich Risk Engineering, InterDynamics has developed Faid®Safe – an integrated approach to developing fatigue-safe workplaces (see box opposite for details).

→ Risk Engineer **Peter Johansson** began his career as a chemical engineer with BOC Gases and spent the next nine years working in a variety of roles for the company, both here and overseas. He joined Zurich's Risk Engineering team in 1999 and has helped develop the Faid®Safe program.

Systematic Multi-level Safeguards

■ Faid®Safe Level 1 Safeguards

Primary protection is achieved by developing fatigue safe work practices and rosters, which significantly reduce task fatigue risks. The program helps individuals and organisations identify and analyse hazards and design systems to address them. It includes a diagnostic to compare planned work hours against actual figures – an eye-opener for many organisations.

■ Faid®Safe Level 2 Safeguards

Secondary levels of protection are achieved by developing competencies for managing fatigue risk at an operator and management level, together with the use of systems to monitor compliance with fatigue safety standards. Workforce and management training and education, compliance monitoring and reporting procedures are integral to this level of protection – and useful for demonstrating an employer's duty of care.

■ Faid®Safe Level 3 Safeguards

Tertiary levels of protection are achieved through the development of contingency and emergency competencies to cope with high-risk situations when individuals experience high levels of fatigue. Insurable risk assessment and fatigue risk gradings by professional risk engineering assessors are used to monitor fatigue risk profiles and to determine priorities for further improvement. This may help an organisation improve its standing from an underwriting perspective.

"Individuals and organisations can significantly reduce their risk of becoming another accident statistic by improving their awareness of the 'fatigue-risk triangle' components – the three basic elements that combine to create a potentially high-risk situation," says Bridges. "The length and timing of hours worked combined with inadequate sleep and the presence of fatigue-related hazards can create a potentially dangerous situation.

"Faid®Safe tackles all the factors contributing to the fatigue-risk triangle within a workplace using the same rigorous and disciplined approach that a risk engineer would take to ensure all forseeable bases are covered.

"The Faid®Safe approach recognises that effective fatigue risk management requires a balanced approach between good business planning and individual commitment."

Bridges says that Faid®Safe's modular format enables organisations to select the components of the program that are most relevant to their needs and circumstances.

"So an organisation that hasn't given much prior attention to fatigue should start with Faid®Safe Level 1 safeguards, which guide them through a review of rosters, associated fatigue, work practices and the identification of hazards," says Bridges.

"But a company with sophisticated safeguards and monitoring systems already in place may only require Faid®Safe Level 3 safeguards, which tackle contingency and emergency planning competencies, including an 'Insurable Risk Assessment' by a professional risk engineer."

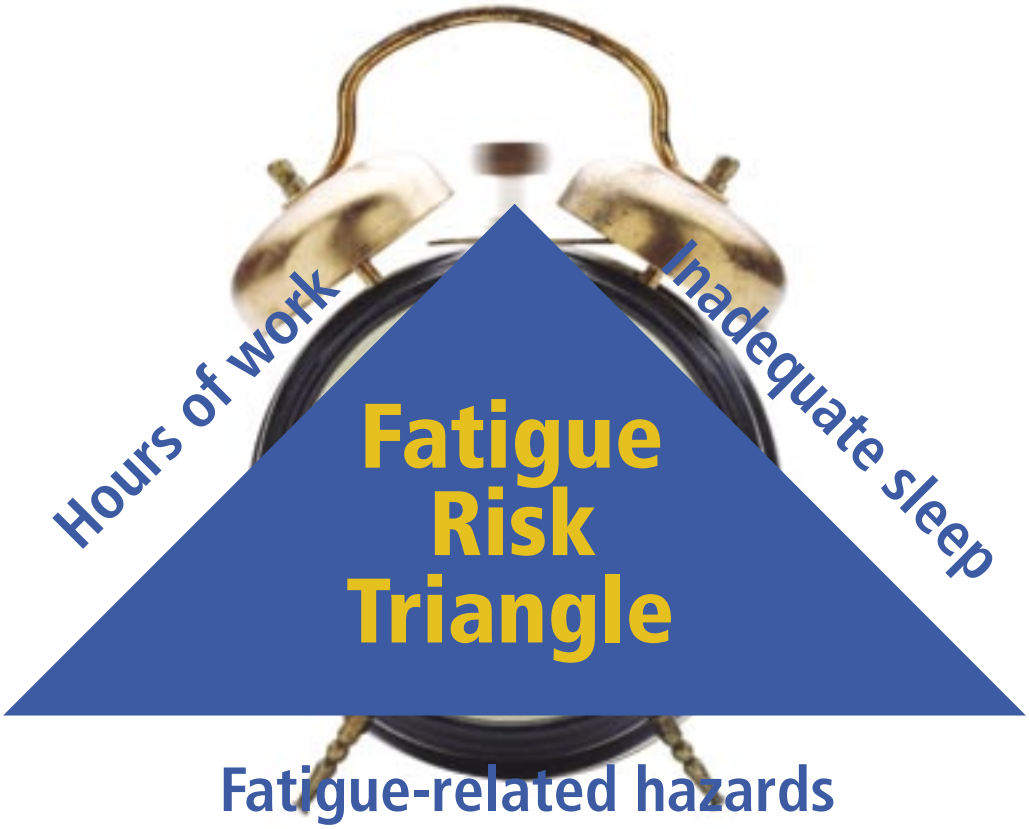
Faid®Safe supporters already include well-known aviation, logistics, long haul transport and emergency services organisations. Bridges says a fatigue-safe approach is of particular benefit to large organisations, with wide-scale operations and an established workforce hesitant about change.

Not surprisingly, an extensive body of research confirms that the amount and quality of sleep is the most significant contributing factor to fatigue.

"It's only in the past few years that people have been starting to treat sleep as a serious medical science," says Dr Adam Fletcher, a former Senior Research Fellow at the University of South Australia's Centre for Sleep Research, who is now helping the US Army manage fatigue.

"But, as we're fast discovering, sleep deprivation is a serious problem that can really hinder daytime performance, destroy relationships and cause serious accidents. As a society we need to treat it as a serious health issue, just as important as diet or exercise."

Dr Fletcher says that people who don't get enough sleep on a regular basis increase their risk of cardiovascular diseases, diabetes and many other health problems, plus have weakened immunity to everyday ailments.



Paradoxically, sleep-deprived people can feel alert yet still show slower reaction times than those who sleep an adequate number of hours.[2]

So how many Australians are affected? According to the recent Sleep Loss Symposium held in Sydney last November, as many as one in four Australians is dangerously sleep-deprived, while many more don't get enough 'shut eye'. [3]

While educating workers on how to better manage their sleep and fatigue is an important step in any fatigue risk management process, Bridges says the challenge facing employers is having team-based contingency plans in place for the benefit of workers performing safety critical tasks when they experience health or personal pressures that lead to high levels of personal fatigue. (This is tackled by the Faid®Safe Level 3 safeguards).

Occupational fatigue is most likely to occur:

1 during night work and early morning shifts
2 after a change of roster
3 when someone is new to irregular work hours
4 while commuting, especially early in the morning and late at night (according to one recent US study, one in five drivers said they had fallen asleep at the wheel in the past year[3]).

"The most important thing to remember when dealing with fatigue," says Bridges, "is that a commitment to one or two forms of protection in isolation does not lead to a 'fatigue safe' workplace. Integrated safeguards for each of the fatigue risk elements, hours of work, adequate sleep and fatigue related hazards are required." Z2B.

Tell-tale signs of fatigue

- Delayed reaction times
  – a pilot doesn't immediately respond to a hazard at takeoff.
- Reduced vigilance
  – the factory control room operator fails to quickly pick up a process problem.
- Impaired hand-eye coordination
  – a fitter putting together a critical component misjudges its assembly.
- Reduced ability for complex decision making
  – an air traffic controller finds it difficult to sequence aircraft landings.
- Reduced ability to communicate
  – an emergency room doctor gives confusing instructions on a procedure.
- Poor team dynamics
  – the irritation of a tired worker undermines team cooperation and coordination.
- Risk of micro-sleeps
  – a school bus driver dozes off and crosses to the other side of a country road.

FOOTNOTES:

1 "Road now a workplace as boss blamed for truck driver's fiery death", *Sydney Morning Herald*, 22/10/2004

2 "Drowsy driving is dangerous driving", *The Baltimore Sun*, 24/8/2004

3 "Eyes opened to health risks of sleep lack", *The West Australian*, 13/11/2004