

## Please read this before using presentation

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- For resources, information or clarification, please contact:  
[RSDComms@dmp.wa.gov.au](mailto:RSDComms@dmp.wa.gov.au)  
or visit  
[www.dmp.wa.gov.au/ResourcesSafety](http://www.dmp.wa.gov.au/ResourcesSafety)

## Fatigue, shift structures and working hours

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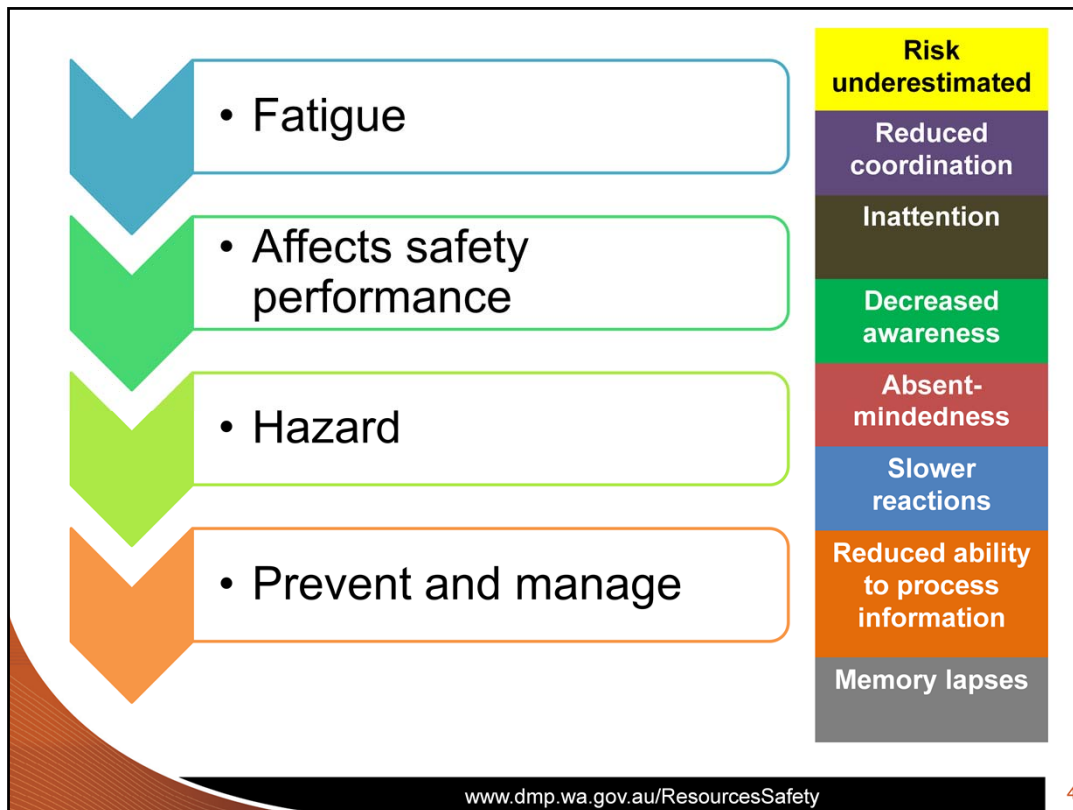
## What are the top ten priority issues for 2013-14?

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- Safety culture
  - Risk management training
  - Principal hazard management plans (PHMPs)
  - Safety in design
  - Maintenance
  - Construction
  - Management and supervision
  - Safety and health representatives
  - Fatigue prevention and management**
  - Exploration

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Fatigue prevention and management is still one of Resources Safety's priority issues for 2013 - 2014, and is likely to be an ongoing issue.



So, what is fatigue? It is generally considered to be a decline in mental and/or physical performance that results from prolonged exertion, sleep loss and/or disruption of the internal clock.

It is also related to workload, in that workers are more easily fatigued if their work is machine-paced, complex or monotonous.

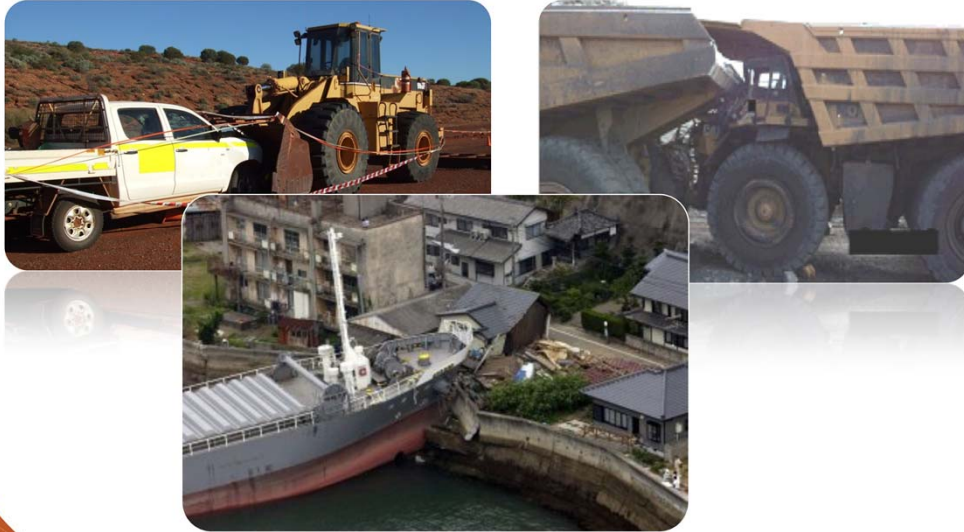
Fatigue results in: *(click – bullet points will start to appear on screen one by one)*

- memory lapses
- reduced ability to process information
- absent-mindedness
- decreased awareness
- inattention
- reduced coordination
- and the list goes on but importantly underestimation of risk is there too.

So it affects:

- safety performance *(click)*
- and therefore needs to be treated as a hazard *(click)*
- and be prevented, managed and controlled *(click)*
- like other hazards, as part of the duty of care responsibility of the employer and workforce

## Why is addressing fatigue important?



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Fatigue can lead to:

- errors and accidents
- ill-health and injury
- reduced productivity

*Top two photos are mining examples.*

Fatigue is often a root cause of major accidents. Some international examples are:

- Herald of Free Enterprise – ferry that capsized after leaving Belgian port of Zeebrugge in 1987, killing 193 passengers and crew. Her bow-door had been left open.
- Chernobyl – cause of 1986 disaster partially attributed to human error caused by confusion and fatigue. The effects are still being felt to this day.
- Shin Tsunetoyo Maru, Fukuyama, Japan – in 2004, a drowsy skipper ran his 498 tonne freighter into houses on shore while the autopilot was on. Homes were damaged but fortunately only one person was injured – although not so fortunate for him.

*[outcome shown in bottom photo]*

## So what can we do about it?

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- Hazard – prevent, manage
- Do not underestimate risks
- Duty of care
  - employers
  - employees



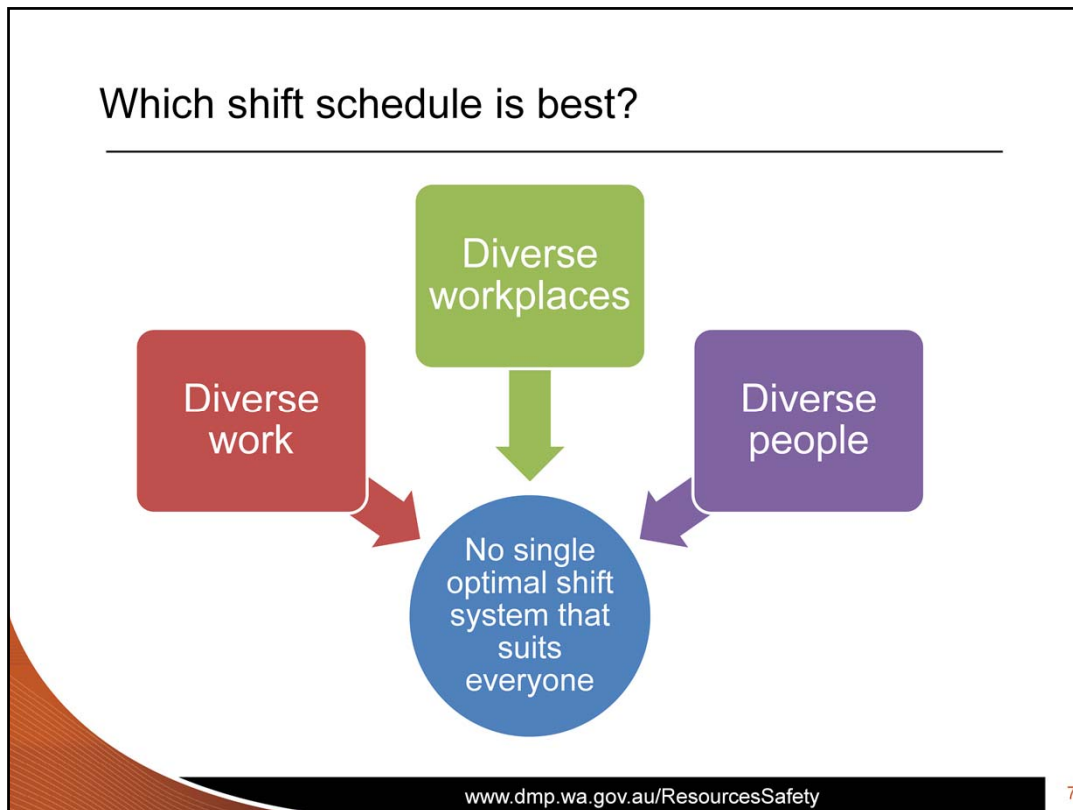
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It is important not to underestimate the risks of fatigue and understand that fatigue needs to be managed, as for other hazards.

Fatigue is unusual in that not all of the risk factors can be controlled at the workplace.

The legal duty is on employers to manage risks from fatigue, irrespective of any individual's willingness to work extra hours or preference for certain shift patterns for social reasons.

Employees have a duty to ensure that they are fit for work – well rested, adequate sleep.



One of the most frequently asked questions is about shift schedules.

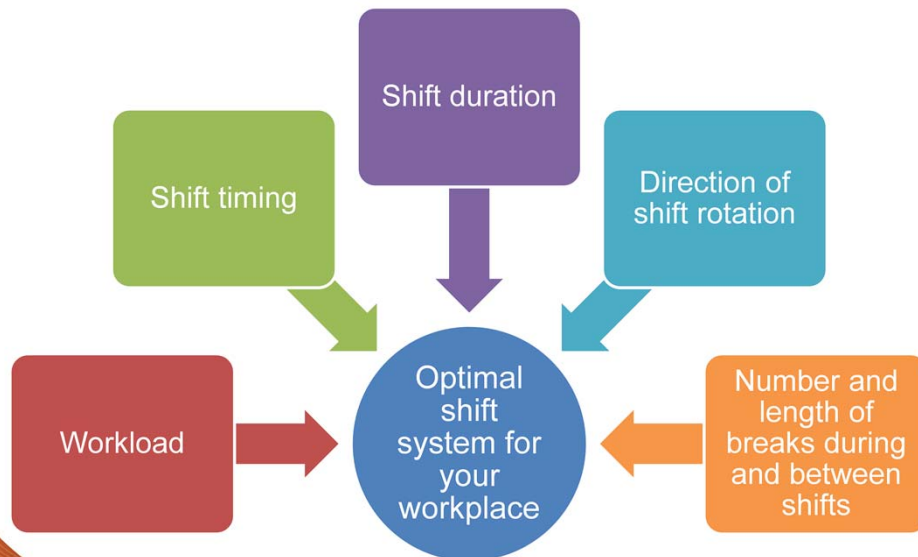
There are many different shift work-schedules and each schedule has different features.

This sheer diversity of work and workplaces means that there is no single optimal shift system that suits everyone.

However, a planned and systematic approach to assessing and managing the risks of shift work can improve the health and safety of workers.

## What about scheduling?

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Here are some key risk factors in shift schedule design that should be considered when assessing and managing the risks of shift work.

These are the workload, the work activity, shift timing and duration, direction of rotation and the number and length of breaks during and between shifts.

Other features of the workplace environment such as the physical environment, management issues and employee welfare can also contribute to the risks associated with shift work.

## What are some key management principles?

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- Consult employees on working hours and shift patterns
- Develop a policy that specifically address risk factors and guards against fatigue (i.e. prevention rather than control)
- Implement policy then monitor and enforce it
- Review following assessment of:
  - adequacy of resourcing and staffing levels
  - effect of changes to working hours
- Employer-provided accommodation
  - conducive to sleep during night and day

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*Discuss*

## What is consultation like at your workplace?

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Is the workforce (e.g. safety and health representatives) consulted when policies and procedures are:

- being developed?
- being reviewed and revised?

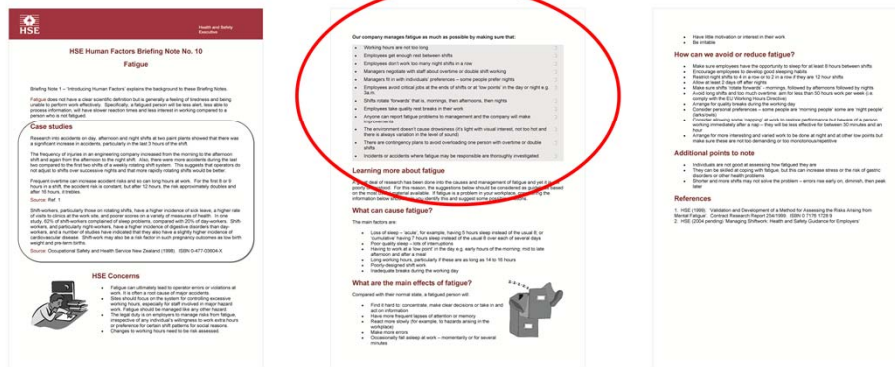
Is the workforce consulted when there are changes to:

- the workplace?
- systems of work?

*Discuss*

# How is your site doing?

## See page 2 of HSE Human Factors Briefing Note 10



[www.dmp.wa.gov.au/ResourcesSafety](http://www.dmp.wa.gov.au/ResourcesSafety)

2-3 minutes to complete the checklist on page 2 of the HSE Human Factors Briefing Note 10.

[PROVIDE AS HANDOUT – available at [www.hse.gov.uk/humanfactors/topics/10fatigue.pdf](http://www.hse.gov.uk/humanfactors/topics/10fatigue.pdf)]

# Resources Safety's current guidance

<http://www.dmp.wa.gov.au/16259.aspx>

[www.dmp.wa.gov.au/ResourcesSafety](http://www.dmp.wa.gov.au/ResourcesSafety)

Resources Safety has developed a one-stop-shop for fatigue containing guidance materials and links to other relevant information.

A new FAQ information sheet on fatigue has been developed and reviewed in consultation with participants at the 2013 Mines Safety Roadshow, and replaces the guideline published in 2000.

*The fatigue one-stop-shop can be found on the DMP website at [www.dmp.wa.gov.au/16259.aspx](http://www.dmp.wa.gov.au/16259.aspx)*

NSW GOVERNMENT | Trade & Investment Resources & Energy

**Fatigue Management Plan**  
A practical guide to developing and implementing a fatigue management plan for the NSW mining and extractives industry

**Fatigue management evaluation manual**  
For the NSW mining and extractives industry

**Suite of resources**

NSW Industry & Investment

NSW Trade & Investment Mine Safety

[www.dmp.wa.gov.au/ResourcesSafety](http://www.dmp.wa.gov.au/ResourcesSafety)

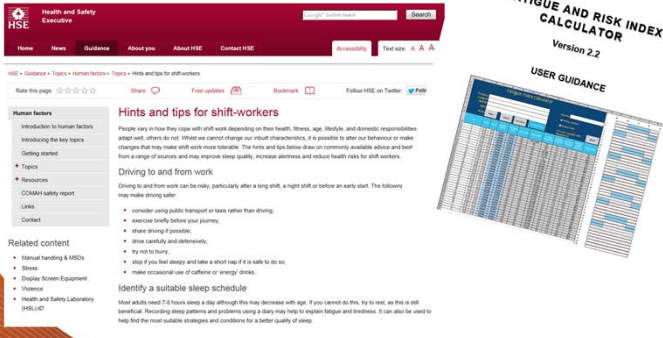
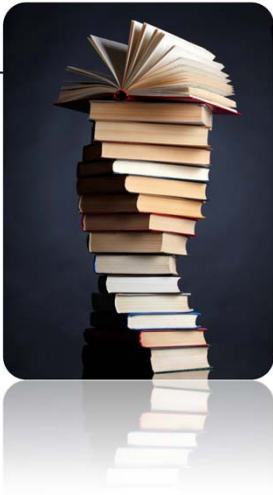
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The NSW Government has a package of resources, including a guide to the development and implementation of a fatigue management plan and training material.

*This information is available at [www.resources.nsw.gov.au/safety/world-leading-ohs/fatigue](http://www.resources.nsw.gov.au/safety/world-leading-ohs/fatigue)*

## What other guidance is available?

- UK-based Health and Safety Executive (HSE) and Energy Institute



The screenshot shows the HSE website with a red header. The main content area is titled 'Hints and tips for shift-workers' and includes sections for 'Human factors', 'Hints and tips for shift-workers', 'Driving to and from work', and 'Identify a suitable sleep schedule'. To the right of the text is a 'FATIGUE AND RISK INDEX CALCULATOR Version 2.2 USER GUIDANCE' document.

[www.dmp.wa.gov.au/ResourcesSafety](http://www.dmp.wa.gov.au/ResourcesSafety)

There is a lot of information available online and in publications. The difficulty can be in knowing where to start!

The UK-based Health and Safety Executive (HSE) [[www.hse.gov.uk/humanfactors/topics](http://www.hse.gov.uk/humanfactors/topics)] and Energy Institute [[www.energypublishing.org/browse-by-topic/topic-9](http://www.energypublishing.org/browse-by-topic/topic-9)] have an extensive array of online guidance on human factors, including fatigue and shiftwork.

## Fatigue prevention and management



If you are continually fatigued and nothing seems to work, speak to your manager or supervisor.

Also consider a health check to confirm there are no underlying medical conditions such as sleep apnoea or diabetes.

*Discuss*