

*Consulting*

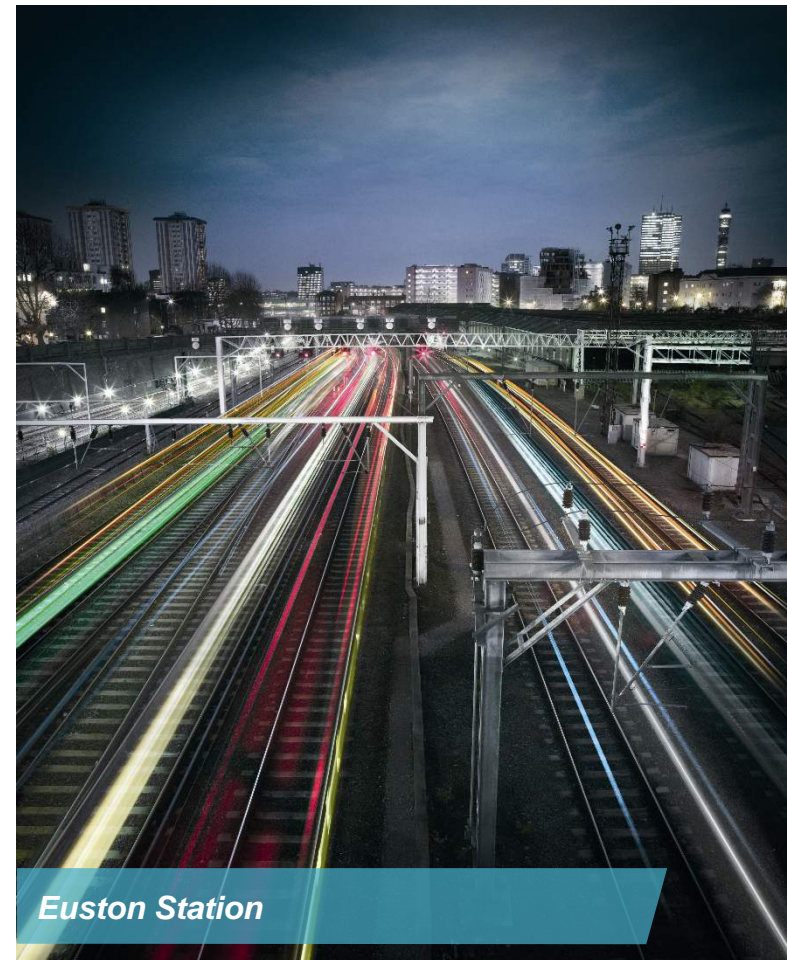


# Fatigue Management – A cross-industry approach and an international perspective

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# Agenda

1. *About Network Rail*
2. *Fatigue – Why it's an Issue*
3. *Fatigue – What our staff say*
4. *Fatigue – A National Approach*
5. *Fatigue – Network Rail*
6. *Road Safety – General*



## What we do



- ▶ Operate 20,000 km's of track, 29,000 bridges, 48,000 signals and 700 tunnels
- ▶ Own 2,500 stations and operate 17 major stations
- ▶ Carry 20,000 train movements every day
- ▶ Own and operate and the second busiest in Europe, and the fifth busiest railway network in the world
- ▶ Operate and maintain the UK's high speed rail infrastructure
- ▶ Employ circa 35,000 people across all rail disciplines.

# What we do

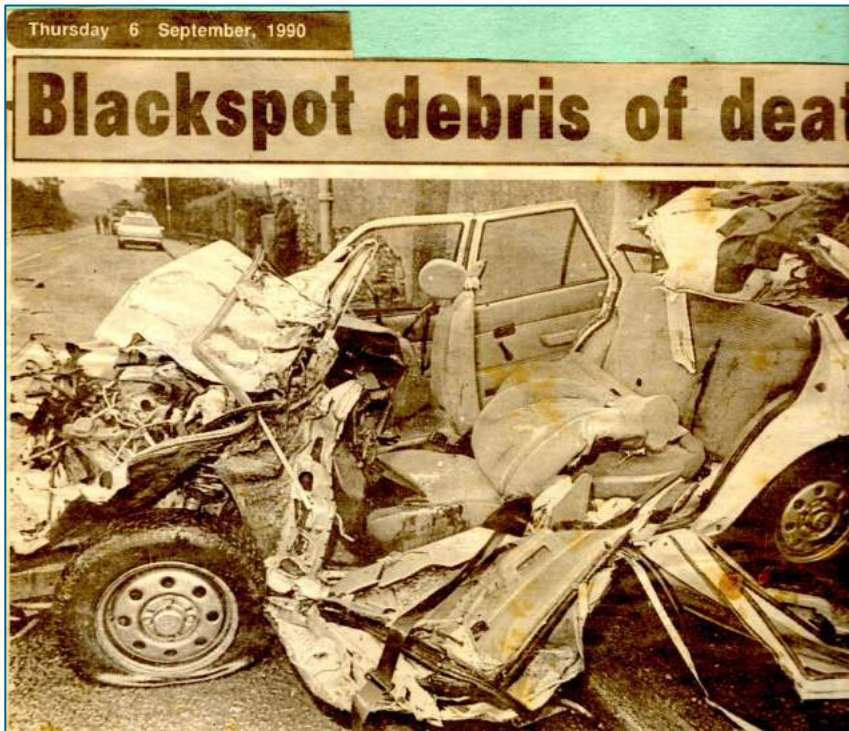


# Fatigue


*Why it's an issue*



# Why it's important to me



**VICTIM**



# SMASH KILLS 2

By DAVE SIDDALL

**TWO men were killed in a four-vehicle horror smash on a blackspot road near Whitehaven.**

The notorious Howgate section of the main A595 was blocked for two hours at Causeway House as firemen battled to free three men from the tangled wreckage of a Ford Escort.

The dead men, both passengers in the Escort, have been named as Sellafeld contractors Lee Baker, 18, of Fernleigh Drive, and father-of-two John Brian O'Donnell, 45, of Peatfield Road, both Seaton, Workington.


The driver of the car, Darren Horrocks, of High Seaton, survived the crash and is today described as "satisfactory" in the West Cumberland Hospital, Whitehaven, where he is being treated for head and chest injuries.

The accident occurred outside Causeway House on a straight stretch of the busy road which has been the scene of 60 accidents — some fatal — in the last three years.

**WITNESSES**

Other vehicles involved were an ERF lorry, driven by Garry Johnstone, of Foundry Road, Parron, a Vauxhall Carlton, driven by George Toddman, of Harrot Hill, Cockermouth, and another Escort driven by Ian Sharpe, of Ilford, Essex. None needed hospital treatment.

The accident happened at 3.10pm yesterday in heavy rain. Police have appealed for witnesses to contact them on Whitehaven 692616.



The lorry involved in the crash  
Pictures: CHRIS MORRISON

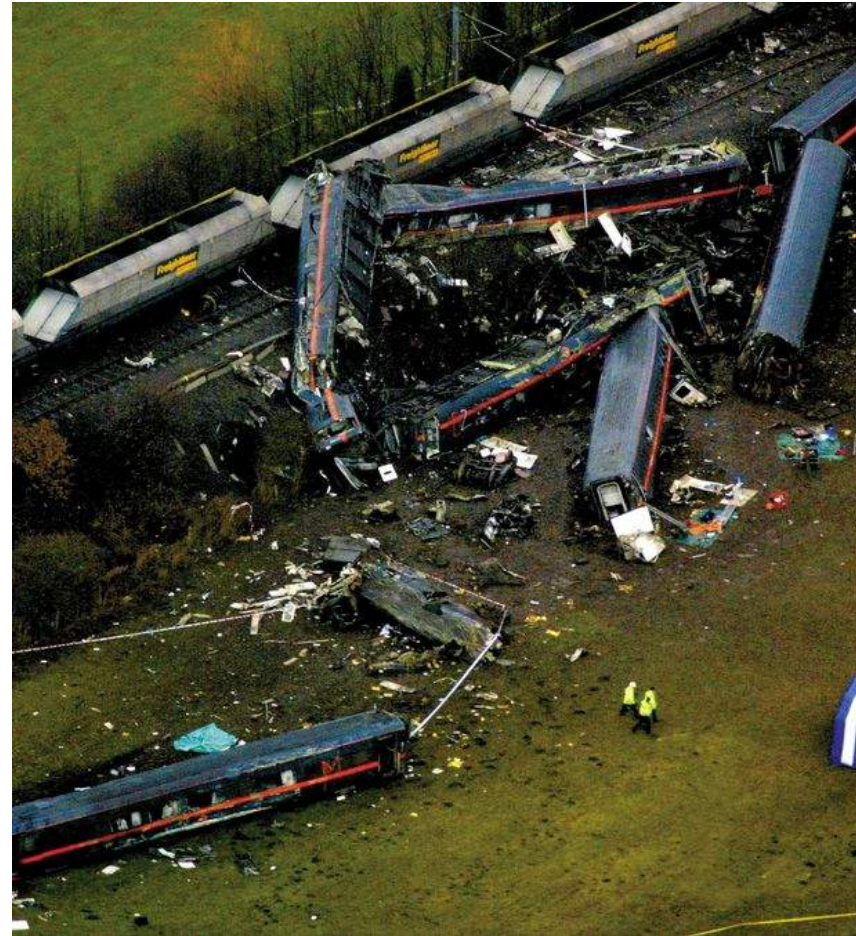
## Great Heck near Selby UK – 28/02/2001

- ▶ Gary Hart was driving a Land Rover along the M62 towing a car on a trailer.
- ▶ Gary fell asleep at the wheel, he veered off the road and onto the East Coast Mainline
- ▶ A high speed passenger train was approaching at over 140kph
- ▶ The train hit the Land Rover and derailed



## *Not just the people in the Car*

- ▶ The derailed train hit a fully loaded coal train travelling in the other direction
- ▶ Ten people were killed in the incident and 82 people suffered serious injuries
- ▶ Gary survived the crash and was convicted of ten counts of causing death by dangerous driving and served a 5 year custodial sentences.





# Network Rail

- ▶ Fatigue has been sighted as a contributory factor in many rail accident investigations
- ▶ One of our biggest safety risks is driving
- ▶ As well as our own staff our supply chain employ a significant number of site based staff who can have long commutes to reach worksites.

# Fatigue

*What our staff say*

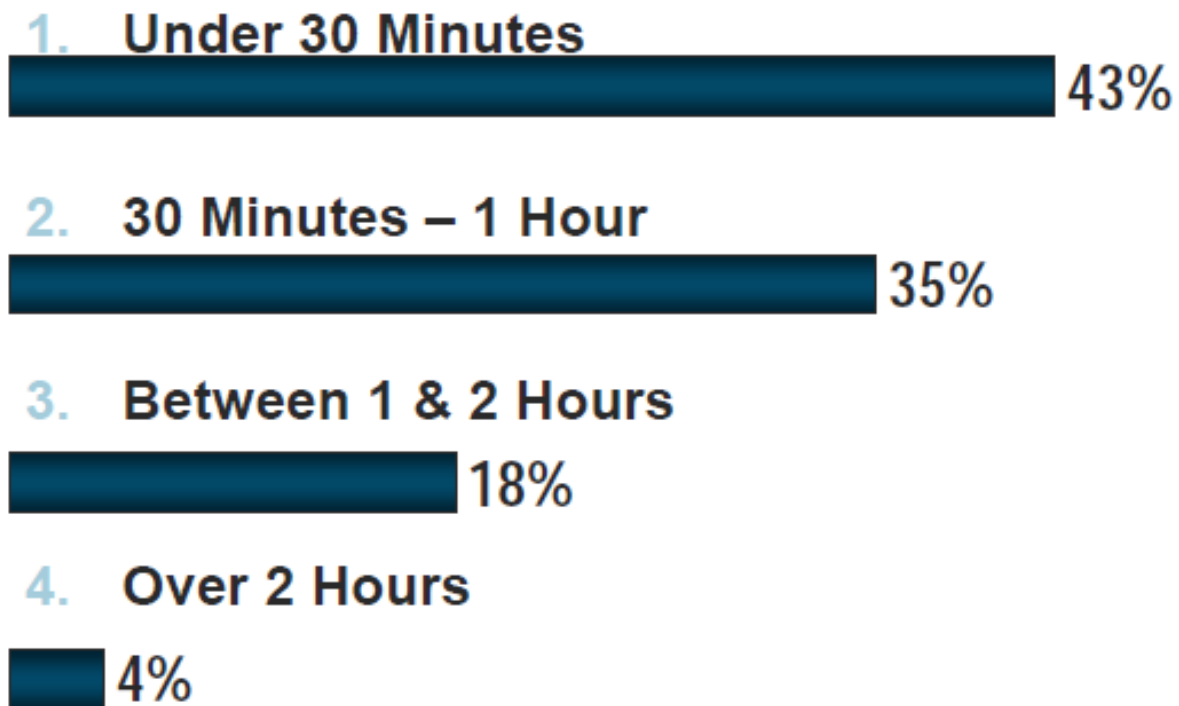


# Safety Truck Survey

- ▶ Network Rail Safety Trucks visit NR and supplier sites to talk about safety
- ▶ Use anonymous surveys to get an understanding of issues from the perspective of the people on the ground
- ▶ The Summer (UK) 2014 Survey was on fatigue
- ▶ Over 1300 people took part in the survey, 92% were contractors.



## How long did it take you to travel to site today?



## *How long is today's shift without travel time?*

### 1. Less than 8 Hours



### 2. Between 8 & 9 Hours



### 3. 10 – 12 Hours

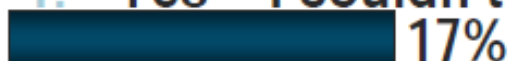


### 4. 12 Hours plus



***Do you use lots of energy drinks or coffee to combat feeling tired?***

**1. Yes – I couldn't do a shift without one**



**2. Yes – But mainly nightshift**



**3. Occasionally**



**4. No**



## *Have you driven while excessively tired?*

1. Yes it was my only way of getting home  
 55%

2. Yes I was the designated driver (had passengers)  
 8%

3. Yes I would rather drive tired than get a hotel  
 4%

4. No but had to nap in the vehicle first  
 7%

5. No  
 26%

# Fatigue

## A National Approach

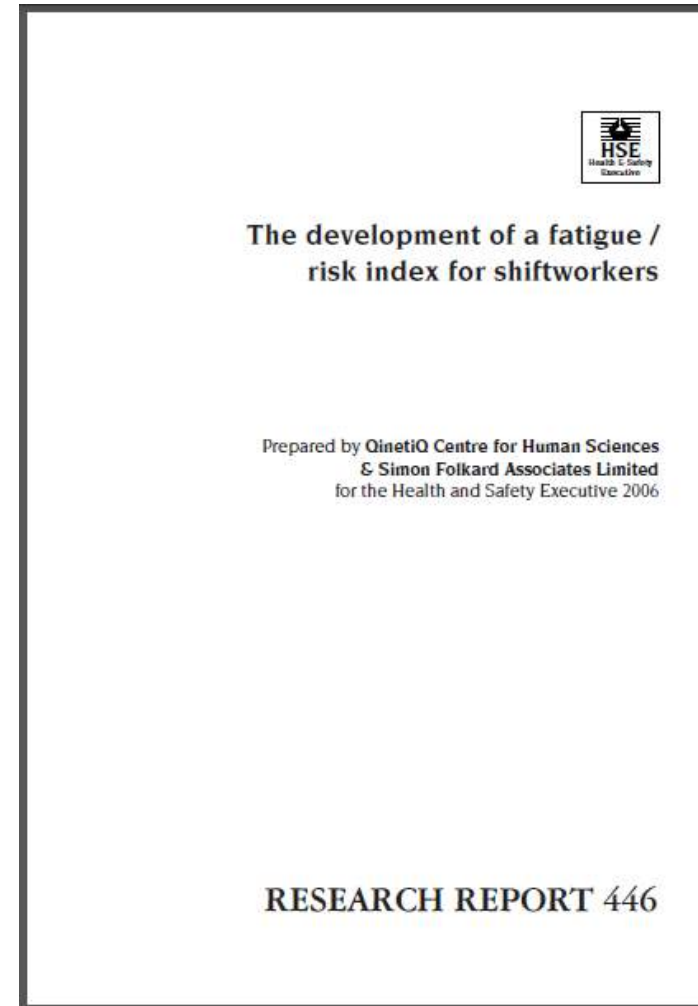




# Health and Safety Executive (HSE)

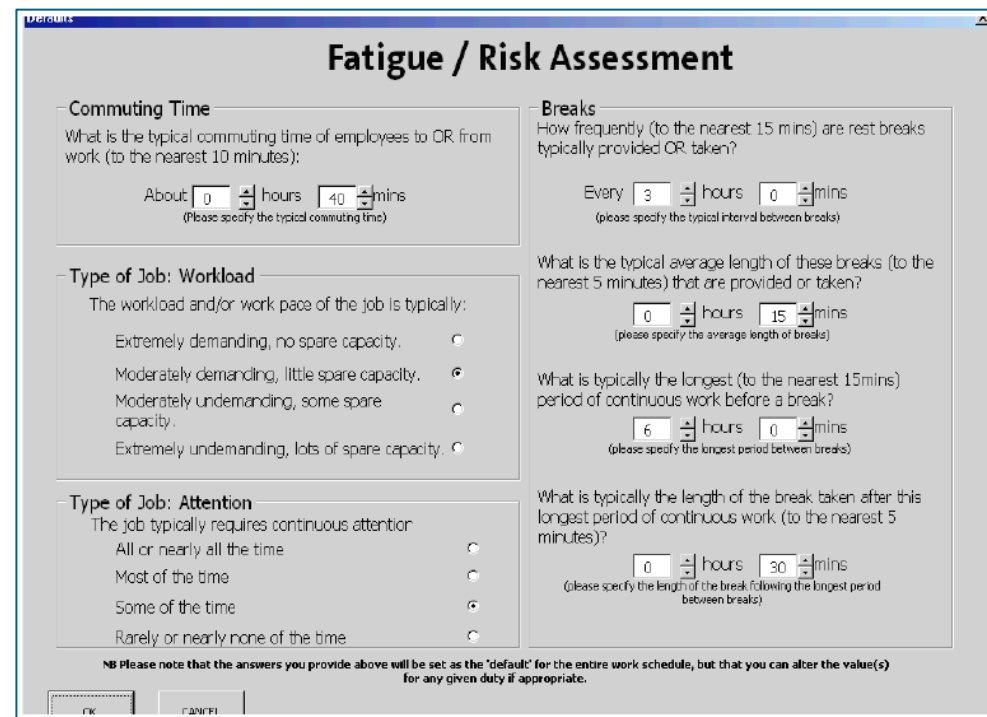
- ▶ In 2006 the HSE published a research report looking at risk factors associated with fatigue.
- ▶ Update of previous studies adding new risk factors and considerations.
- ▶ Developed the Fatigue & Risk Index Calculator tool and user guidance

<http://www.hse.gov.uk/research/rrhtm/rr446.htm>



# HSE Fatigue & Risk Index Calculator

- ▶ Tool developed for rotating shift patterns
- ▶ Allows a long term profile of an individuals risk profile to be developed



**Fatigue / Risk Assessment**

**Commuting Time**  
What is the typical commuting time of employees to OR from work (to the nearest 10 minutes):  
About  hours  mins  
(Please specify the typical commuting time)

**Type of Job: Workload**  
The workload and/or work pace of the job is typically:  
 Extremely demanding, no spare capacity.  
 Moderately demanding, little spare capacity.  
 Moderately undemanding, some spare capacity.  
 Extremely undemanding, lots of spare capacity.

**Type of Job: Attention**  
The job typically requires continuous attention  
 All or nearly all the time  
 Most of the time  
 Some of the time  
 Rarely or nearly none of the time

**Breaks**  
How frequently (to the nearest 15 mins) are rest breaks typically provided OR taken?  
Every  hours  mins  
(please specify the typical interval between breaks)

What is the typical average length of these breaks (to the nearest 5 minutes) that are provided or taken?  
 hours  mins  
(please specify the average length of breaks)

What is typically the longest (to the nearest 15mins) period of continuous work before a break?  
 hours  mins  
(please specify the longest period between breaks)

What is typically the length of the break taken after this longest period of continuous work (to the nearest 5 minutes)?  
 hours  mins  
(please specify the length of the break following the longest period between breaks)

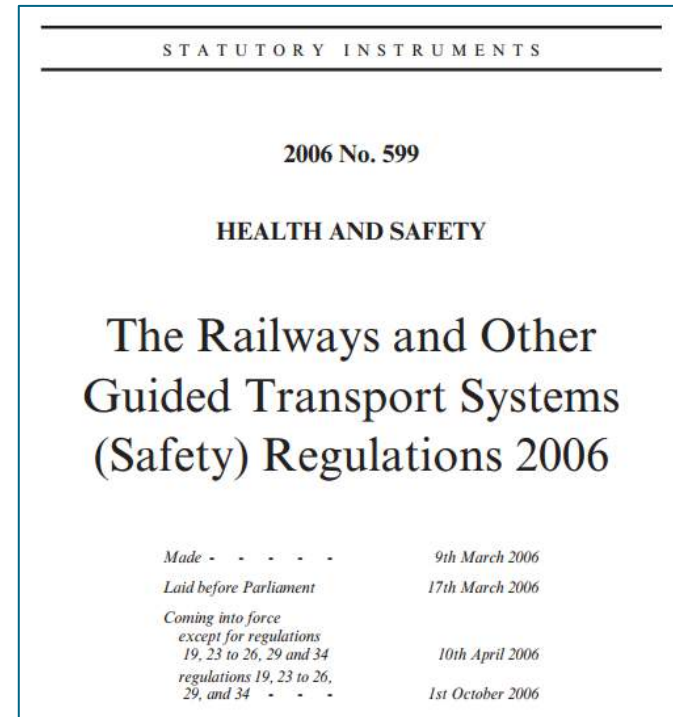
**NB Please note that the answers you provide above will be set as the 'default' for the entire work schedule, but that you can alter the value(s) for any given duty if appropriate.**

# Legislative Requirement - Rail

## The Railway and Other Guided Transport Systems (Safety) Regulations 2006 – 25 Fatigue

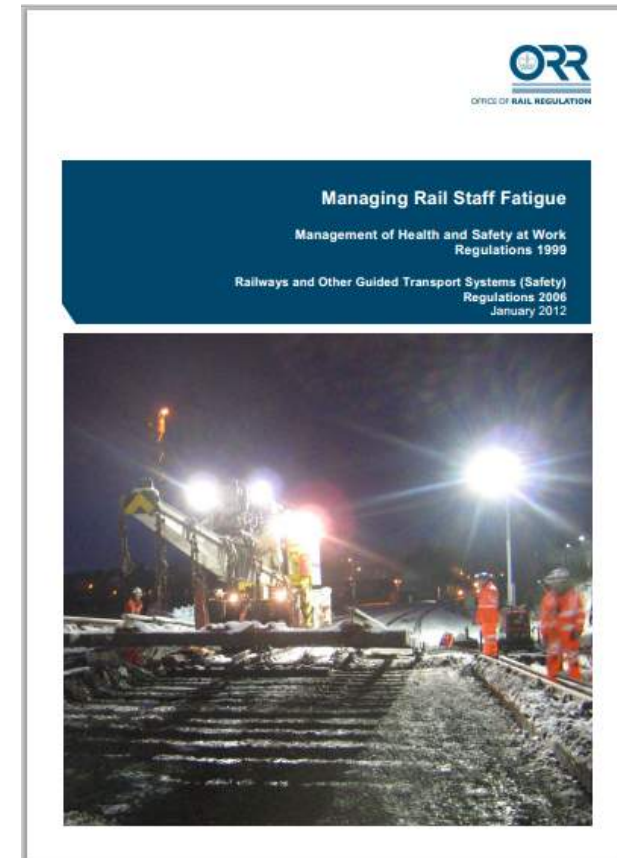
**25.** (1) Every controller of safety critical work shall have in place arrangements to ensure, so far as is reasonably practicable, that a safety critical worker under his management, supervision or control does not carry out safety critical work in circumstances where he is so fatigued or where he would be liable to become so fatigued that his health or safety or the health or safety of other persons on a transport system could be significantly affected.

(2) The arrangements in paragraph (1) shall be reviewed by the controller of safety critical work where he has reason to doubt the effectiveness of those arrangements.



## Office of the Rail Regulator (ORR)

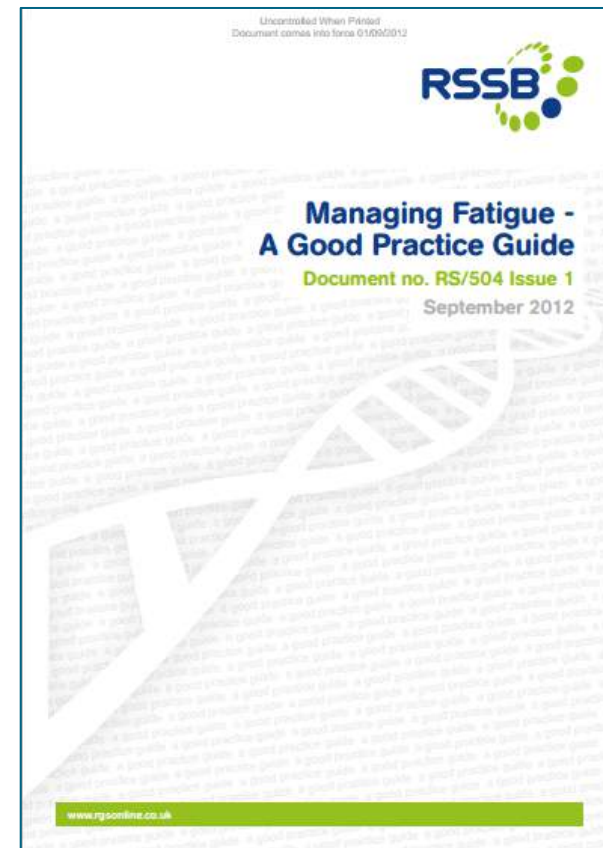
- ▶ The Office of the Rail Regulator are responsible for enforcing safety legislation for the UK Rail Industry
- ▶ They produced a guidance document on how industry could comply with the requirements of the ROGS Regulations



[http://orr.gov.uk/\\_\\_data/assets/pdf\\_file/0005/2867/managing\\_rail\\_fatigue.pdf](http://orr.gov.uk/__data/assets/pdf_file/0005/2867/managing_rail_fatigue.pdf)

# Railway Safety & Standards Board (RSSB)

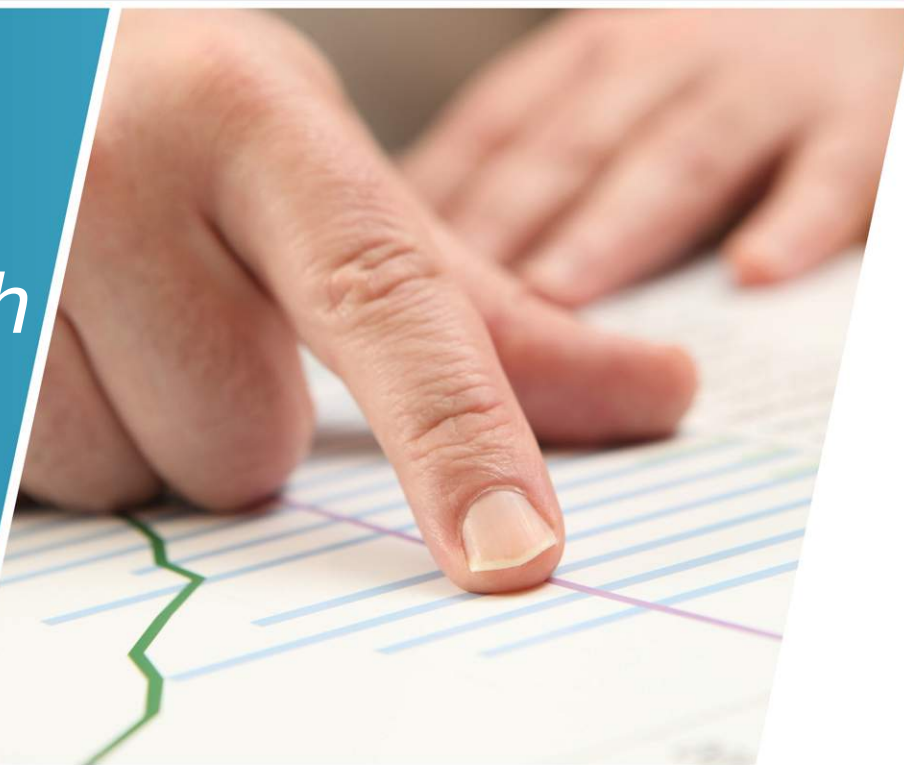
- ▶ RSSB operate on behalf of the whole UK rail industry
- ▶ They took the ORR guidance and developed it into a practical set of guidelines which businesses can use to implement a fatigue management system
- ▶ The principles in this document can be applied to any industry, not just rail.



[http://www.rgsonline.co.uk/Railway\\_Group\\_Standards/Traffic%20Operation%20and%20Management/RSSB%20Good%20Practice%20Guides/RS504%20Iss%201.pdf?web=1](http://www.rgsonline.co.uk/Railway_Group_Standards/Traffic%20Operation%20and%20Management/RSSB%20Good%20Practice%20Guides/RS504%20Iss%201.pdf?web=1)

# Fatigue

## Rail Industry Approach



# Opsweb

- ▶ A shared industry resource managed by the RSSB
- ▶ Rail industry and supply chain members with an interest in operational safety
- ▶ Dedicated section on Fatigue



The screenshot shows the Opsweb website interface. At the top, there is a navigation bar with links: About Opsweb, What is Operational Safety?, Useful Links, Glossary, Multi-SPAD Site, and Contact Us. On the right, it says "Welcome Andrew Petrie" with links for "My account" and "Log out". Below the navigation is the Opsweb logo and a search bar. The main content area is titled "Fatigue" and includes a sidebar with navigation options: Latest News, SPAD and TPWS Reports & Data, Railway Operations, Safety Critical Communications, Resources and Tools, Industry Groups, and Contribute to Opsweb. The main text discusses the nature of fatigue, its effects on work, and the importance of fatigue management skills. An image of a man with his hand to his face, appearing tired, is included on the right side of the text.

About Opsweb What is Operational Safety? Useful Links Glossary Multi-SPAD Site Contact Us Welcome Andrew Petrie My account Log out

Opsweb

Home > Resources and Tools > Fatigue

Latest News

SPAD and TPWS Reports & Data

Railway Operations >

Safety Critical Communications >

Resources and Tools >

Industry Groups >

Contribute to Opsweb

## Fatigue

Fatigue is something which we all experience and, generally, manage. We understand feelings of tiredness, and that they can be a sign that we need to go to sleep. We also understand the feelings of fatigue which arise from prolonged physical or mental effort. In the context of work, we know how to manage fatigue by taking breaks, having a drink, eating some food or changing how we do a task in an effort to keep alert. We are probably also aware of the impact fatigue can have on our work, such as difficulty concentrating, slower reactions, reduced motivation or, in extreme cases, nodding off. However, our ability to stay awake and do our work on the required days is testament to the fatigue management skills which we mostly possess.



At the same time we probably also know that we do not always manage fatigue as well as we could do. This can be due to factors over which we have limited influence. For example, being woken by a noise outside or carrying on working to fix an urgent problem. It can also be a choice which we make, staying up late to watch a movie or persisting at a task because we are 'nearly there', when we should have taken a break or gone home.

Despite all of us being familiar with fatigue, it is a state which has been proven to increase the likelihood that we under-perform at what we are doing. It can be just as dangerous as taking alcohol or drugs. Fatigue at

# Rail Infrastructure Assurance Group

- ▶ The Rail Infrastructure Assurance Group (RIAG) is a working group made up from the major contracting organisations working for Network Rail.
- ▶ The group works in conjunction with NR and the RSSB for the benefit of the industry
- ▶ RIAG developed a cross industry presentation and briefing note on fatigue which was distributed to the members and the wider supply chain

<http://safety.networkrail.co.uk/safety-groups/riag>



## TOOL BOX TALK - FATIGUE

Fatigue has been identified as a contributory factor in many railway industry accidents. This tool box talk aims to give you some information about the risks associated with being tired at work and some guidance on how you can avoid or manage your fatigue so that you and your work colleagues are less likely to be harmed by the effects.

### FATIGUE IS CAUSED BY MANY FACTORS INCLUDING, BUT NOT LIMITED TO:-

- Duration of shifts, time off between shifts and changes to shift patterns.
- Ability to sleep on rest days, the quality of sleep, and sleeping disorders.
- Commuting time to/from workplace or place of booking on.
- Workload & responsibilities e.g. the different mental and/or physical task demands, role and main activities performed throughout a shift.
- Impact of second jobs and personal activities.
- Scheduling and quality of rest breaks during a shift.
- Cold starts and inadequate recovery times.
- Attitudes to work/motivation and dealing with stress in life.
- The working environment encourages fatigue rather than alertness (warm, dark, comfortable, silent).

### PREVENTION – WHAT YOU CAN DO.

- Always take scheduled breaks for water, rest and food.
- Get 8 hours sleep before starting work and try to sleep at the same time each day.
- Find a healthy balance between work and personal life.
- Always seek medical advice about sleep disorders.

### PREVENTION – WHAT THE COMPANY CAN DO.

- Ensure the availability of adequate time off between shifts.
- Where possible rotate jobs to avoid repetition and maintain awareness.
- Try to design rosters so that they are less subject to day-to-day variation.
- Monitor co-workers for signs of fatigue and relieve them whenever possible.

### CONCLUSION

Fatigue is the condition of being physically or mentally tired or exhausted. When you're fatigued **you will make errors in judgement**. Your mind or eyes can be off the task and you can make a critical error or have a near-miss incident. If you recognise the affects of fatigue in yourself, or others, stop what you are doing and raise your concerns with your immediate supervisor.

*All employees have a duty to take reasonable care of their own health and safety and that of other people, who may be affected by their activities at work. This duty implies that employees should take positive steps to understand the risk factors in their work, such as the causes of fatigue, comply with safety rules and procedures and make sure that nothing they do or fail to do at work puts anyone at risk. (MHSW Regulations 1999)*

**IT'S YOUR RESPONSIBILITY TO ARRIVE "FIT FOR WORK".**



# Network Rail Video – RED Sleeper



<http://www.safety.networkrail.co.uk/Alerts-and-Campaign/Safety-Films>

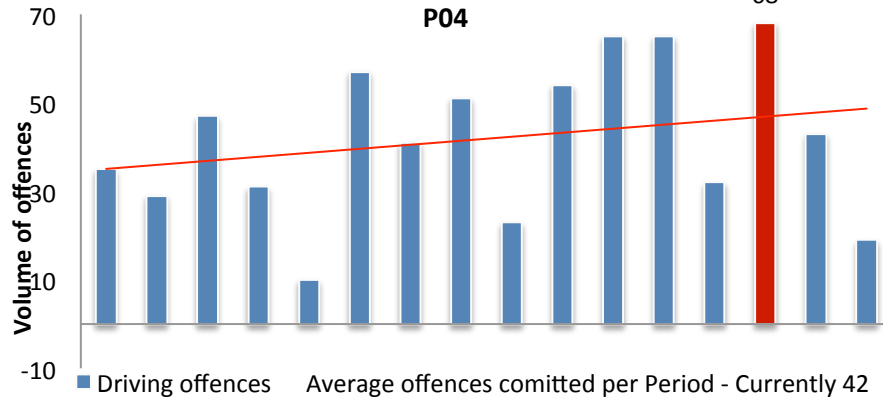
# Road Safety

## General

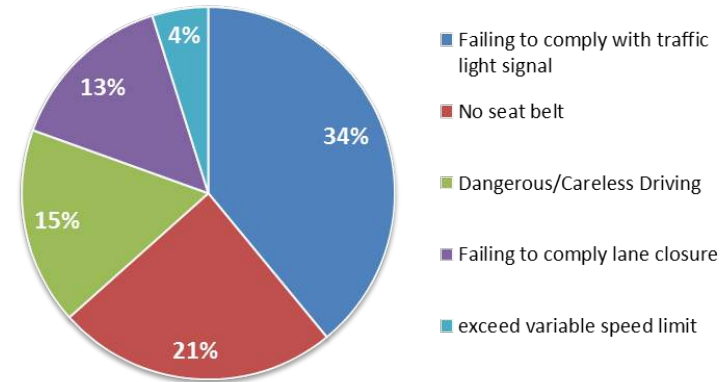


# Network Rail - Driving Offences

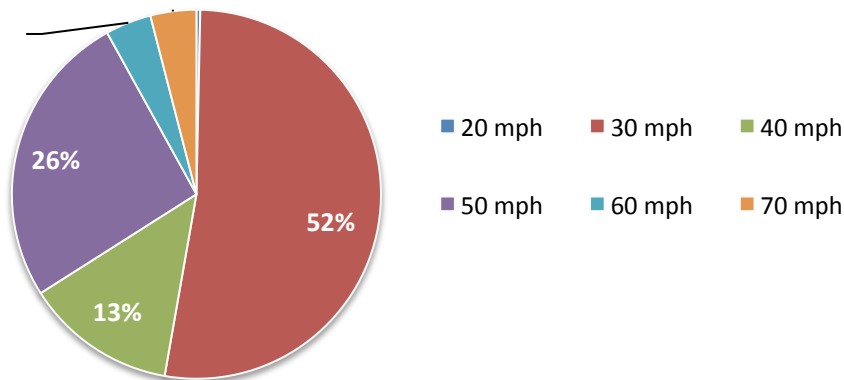
Time series of driving offences – From 13/14 P02, to 14/15 P04



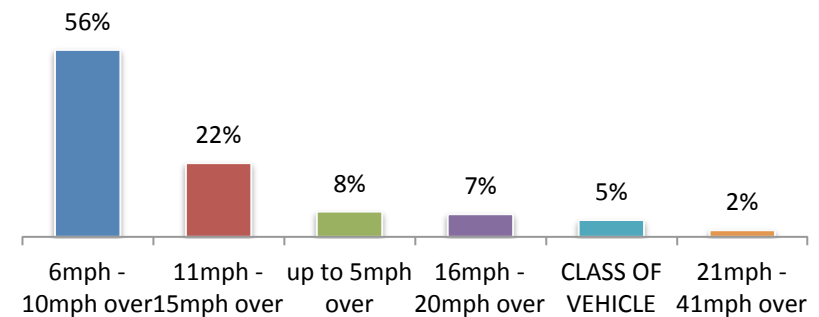
Five main driving offence themes – Excl. speeding



Distribution of speeding offences by speed limit



Variance of recorded driving speed against the speed limit



# Network Rail – Life Saving Rules

## What's changed?

We have prohibited the use of hands-free phones while driving, as well as the use and programming of hand-held and other mobile devices.

Both logo's have altered to include the Bluetooth symbol and introduce Speeding Symbol

The second rule has been reworded to bring greater emphasis on speeding

## Driving



Never use a hand-held or hands-free phone, or programme any other mobile device, while driving.



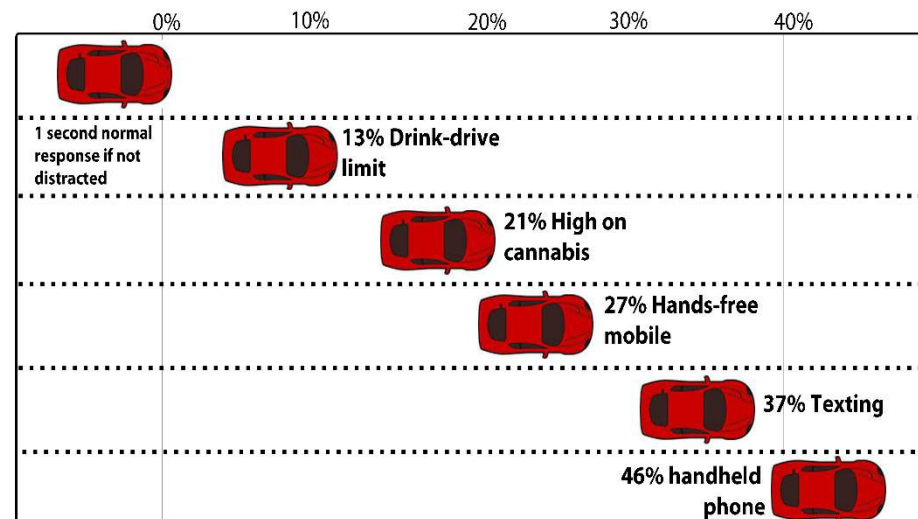
Always obey the speed limit and wear a seat belt.

## Why?

- New Research shows conversation on a hands-free device while driving is distracting
- Driving rules bridge frontline teams & management: they apply to everyone

### Delayed reactions

Percentage increase in distracted drivers' response time



***Thank you***

***Any Questions?***

***[www.safety.networkrail.co.uk](http://www.safety.networkrail.co.uk)***

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