

# FATIGUE RISK MANAGEMENT

## Introduction

Fatigue is a major risk factor in the railway industry and whilst it may not lead to specific types of incident, it is often a significant underlying cause of them.

One such incident was the Clapham Junction Rail Accident on 12th December 1988 where 35 people were killed and 500 injured, 69 seriously. In the subsequent Hidden Inquiry, it was found that fatigue was a factor in why a signal had been incorrectly wired and recommendations were made (and accepted by British Rail) in connection with restricting hours of duty for safety critical staff.<sup>1</sup>

More recently, in March 2020,<sup>2</sup> the ORR<sup>3</sup> took out a successful prosecution against Renown Consultants after they failed to ensure two of their rail infrastructure workers were sufficiently rested to work and travel safely. The prosecution arose because the company's failings led to a road collision on the way home from a night turn, resulting in both workers being killed.

Fatigue remains a significant issue and is why it is one of the twelve parts of the RSSB's risk management strategy, *Leading Health and Safety on Britain's Railways*<sup>4</sup> (LHSBR).

RSSB has adapted its Annual Health and Safety Report (AHSR) to describe problems and progress on each of the parts of the strategy. TSSA has previously highlighted aspects of the AHSR through a Reps Bulletin<sup>5</sup> but in this publication we will be focusing on Fatigue, building on a previous Reps Bulletin on the issue.<sup>6</sup> We will also be looking back to some of the details from RSSB's 2018 TOC Fatigue Survey.

## How is fatigue defined?

There is no single agreed definition of fatigue, but the ORR has described it as:

"a state of perceived weariness that can result from prolonged working, heavy workload, insufficient rest and inadequate sleep".<sup>7</sup>

The ORR highlights the characteristics of fatigue as including:

- A general feeling of tiredness, resulting in a reduced ability to perform work effectively.
- A fatigued person will be less alert, less able to process information, will take longer to react and make decisions, and will have less interest in working compared to a person who is not fatigued.
- Fatigue increases the likelihood of errors and adversely affects performance.

On this last point, the HSE's research<sup>8</sup> has highlighted how tasks requiring the following are particularly affected by fatigue:

- vigilance and monitoring;
- decision making;
- awareness;
- fast reaction time;
- tracking ability;
- memory.

TSSA's Reps Bulletin H&S/116/Jul 2016, "Fatigue – What you should know" gives more information about these and other factors that cause fatigue.

## TOC Fatigue Survey

In February 2018 RSSB carried out a Fatigue Survey amongst Train Operating Companies (TOCs) which produced over five thousand responses from 14 participating organisations.

Among the results of the survey were the following:

- *Staying awake at work: How often in a month does an employee have to make an effort to stay awake? The answers agreeing to more than once a week were:*
  - 28% of shiftworkers, 17% of non-shiftworkers
  - 28% of frontline workers, 21% of managers, 22% of managers with frontline responsibilities
- *Numbers agreeing to the question about whether the person had had an incident or accident where they felt fatigue was a factor were:*
  - 19% of men and 13% of women - 20% of safety critical staff, 13% of non-safety critical participants
  - 21% of shift workers, 7% non-shift workers
  - 22% of front line workers, 10% of managers, 14% of managers with frontline responsibilities

Breaking down the figures by job role showed that the following had had an incident or accident where they felt fatigue was a factor:

- 27% train and machine operators

- 27% track & possession protection staff
- 21% depot & maintenance staff
- 18% platform & gateline staff
- 18% guards and traincrew
- 16% multiple roles
- 10% managers, office & support staff
- *Proportion of respondents agreeing that health-related symptoms can impact sleep, fatigue & alertness levels were:*
  - 11% of respondents suffered in this way and 13% agreed they did sometimes;
  - 37% of the group with health-related symptoms said they had to make an effort to stay awake more than once a week;
  - of those with health related symptoms that could impact sleep, fatigue and alertness levels, 13% were women and 10% men;
  - age also appears to be a factor with 7% each of 20-29 and 30-39 year olds agreeing with the question compared to 11% of 40-49, 14% of 50-59 and 18% of 60 (or over);
  - Management, office & support staff (12%) and those with multiple job roles (13%) were more likely to say they suffered health-related symptoms that could impact sleep, fatigue or alertness than train & machine operators (7%).
- *Infrastructure sector: What does an average non-shiftworker week look like?*
  - Average contracted hours were 37 per week;
  - Average overtime was 10 hours a week;
  - 74% of respondents claimed they never received additional payment for working these overtime hours.
  - RSSB stated: "Those who work overtime were no more likely to suffer from excessive general sleepiness than those who did not work overtime."
- *Passenger sector: What does an average non shiftworker week look like?*
  - Safety critical workers performed an average of 12 hours overtime compared with 9 hours for non-safety critical;
  - men worked more overtime (11 hours) than women (8 hours);

- 30-59 age group performed an average 10 hours overtime compared with 20-29 at 7 hours;
- Frontline staff carried out an average of 7.2 hours but managers worked more at 9.7 hours. Managers with frontline responsibilities did 10.3 hours on average overtime;
- safety critical workers carried out 12 hours overtime, more than the 9 hours for non-safety critical.

■ *The majority of shiftworkers said their shift was fatiguing due to the rotation of their shift patterns.*

- This was consistent across all companies except one, where the most frequently selected factor was time of day. Time of day (when the shift begins) was rated second by all other respondents.

■ *What does on call look like?*

- survey found that 107 hours a month was the average time on call;
- 68% did not get paid for being on call, 29% did and 3% only when called to work;
- 62% of on-call workers sometimes or always exceeded company working time limits when on call;
- 45% of on-call workers stated that nobody checks their fitness to continue when their hours exceed working limits;
- 80% of on call workers said they do not get a rest before on call work. 64% said they don't get a rest after on call work. 12% said they only get a rest if they have been called out.

■ *Do you take a break at work?*

- 69% of respondents said they always take a break, 32% agreed they sometimes take a break and 7% never take a break.

■ *Do people drive road vehicles at work, or to commute, when they are fatigued?*

- 71% said they did (29% said they did not);
- 30% of respondents who had driven when fatigued said they had done so whilst suffering from excessive daytime sleepiness;

- 78% of shiftworkers had driven when fatigued in the twelve months before the survey, compared to 53% of non shiftworkers;
- The majority in all age groups had driven whilst fatigued but the highest was 76% of those in the 30-39 range;
- 74% of safety critical workers had driven when fatigued whilst 66% of non-safety critical staff had done the same;
- broken down in job roles, the percentage of respondents who had driven whilst fatigued in the year up to the survey was: - 62% managers, office and support staff; - 63% depot & maintenance staff; - 67% platform & gateline staff
- 68% multiple roles
- 80% train and machine operators
- 81% guards and traincrew
- 82% track & possession protection staff

■ *What type of work do people think contributes to their fatigue?*

- 42% of respondents agreed that "doing work that needed lots of mental energy or concentration" whilst the second highest response was 16% in answer to "doing work that was very frustrating."

■ *Whose responsibility is it to manage fatigue?*

- 86% of survey participants felt fatigue management was the shared responsibility of both the company and the employee.

The Survey also looked at other factors including:

■ Levels of sleep

■ Methods used to deal with fatigue

It is hoped that reps may find some of the above information useful in discussions about fatigue, rosters and on call.

## **What is the rail industry doing about addressing the issue of fatigue?**

As noted earlier in this Bulletin, fatigue has become one of the twelve main risk areas identified by RSSB in its "Leading Health

& Safety on Britain's Railway" (LHSBR) document.

First published in 2016, the LHSBR strategy was revised in April 2020 and contains five fatigue focused strategic challenges (described in Chapter 6, Fatigue Risk Management (pages 24-26)) which include:

- the move to the use of risk assessments of rosters
- accurately recording working hours
- developing principles that will ensure fitness for duty checks properly integrate fatigue and sleep.

LHSBR seeks to set a collaborative, across industry path to achieve the goals of its objectives. Reps may also like to know that RSSB publishes a quarterly report<sup>9</sup> that covers each of the twelve risk areas, highlighting developments in terms of incidents that have occurred, progress with strategic objectives and guidance that has been issued (which may also be useful to reps).

RSSB has also produced the "CP6 Roadmap for Fatigue Risk Management"<sup>10</sup> which is designed to deliver the objectives identified by the LHSBR and forms the work of the three fatigue working groups that cover TOCs, Freight and Infrastructure, respectively.

The Roadmap identifies six areas that need to be addressed:

- Strategy, standards, leadership and co-ordination;
- Designing working patterns that minimise fatigue risk;
- Controlling excessive working hours;
- Improving fitness for duty decisions & fatigue reporting;
- Embedding a thorough understanding of fatigue and how to manage the risk;
- Collecting data to improve fatigue risk management

Broad objectives have been set for each area, including reviewing industry standards and guidance as well as training staff in fatigue management issues.

One other publication that needs to be

mentioned in this broad overview is that of the Annual Health & Safety Report (AHSR) which now gives information under each of the headings identified in the LHSBR.

As mentioned earlier, the latest AHSR, that for 2019/20, was the subject of a TSSA Reps Bulletin in November 2020. However, that Bulletin did not focus on the Fatigue Risk Management report<sup>11</sup> that was a part of the AHSR. Reps may wish to read that document that gives a general guide to what was being done within the time period.

## Reps Action

Reps are encouraged to take action over the issue of fatigue which can affect any member. Amongst the things that can be done are:

- Think about the situation in the company that you work for and discuss the issue with colleagues;
- You need to establish how the members that you represent are affected by fatigue because of the hours they work, the shift pattern they may be on, whether they drive on duty or to get from home to work. Are any of them on call – and if so, what arrangements are in place around frequency of such duty, pay they may (or may not) receive (possibly incorporated into their salary), rest periods, etc;
- If members report problems, there will be a need to discuss solutions with the people concerned before raising the issue of fatigue with your manager/employer. Ensure that you have read the relevant guidance,<sup>12</sup> obtained a copy of the appropriate railway standard (RS504 Iss 1, Fatigue Management - A Good Practice Guide)<sup>13</sup> and, if necessary, sought advice from a more senior or experienced rep (or your TSSA organiser);
- Ensure that you report back to your members the outcome of any meetings with management and, if appropriate, determine your next steps;
- If problems do not exist, we still recommend that members make themselves familiar with fatigue issues

and share this document with TSSA members.

## Acknowledgements and references

In putting this Bulletin together, TSSA used publications and information from the Railway Safety and Standards Board, the Office of Rail and Road and the Health and Safety Executive. TSSA wishes to acknowledge all of these organisations and, where possible, has cited references in the footnotes on the relevant page.

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### NOTES:

- 1 See: <https://www.railwaysarchive.co.uk/docsummary.php?docID=36>
- 2 See: <https://www.orr.gov.uk/search-news/contractor-renown-consultants-fined-ps450k>
- 3 Office of Rail and Road
- 4 "Leading Health & Safety on Britain's Railway: a strategy for working together", v3, April 2020, available to download from: <https://www.rssb.co.uk/en/safety-and-health/leading-health-and-safety-on-britains-railway>
- 5 Reps Bulletin H&S/131/Nov2020
- 6 Reps Bulletin H&S/116/Jul 2016, "Fatigue – What you should know", available to download from: <https://www.tssa.org.uk/en/repes-area/repes-bulletins/health-safety/index.cfm>
- 7 Paragraph 1.3, Page 6, Managing Rail Staff Fatigue at: [https://www.orr.gov.uk/sites/default/files/om/managing\\_rail\\_fatigue.pdf](https://www.orr.gov.uk/sites/default/files/om/managing_rail_fatigue.pdf)
- 8 Paragraph 25, Page 9, "Managing shift work: Health and Safety Guidance" available to download at: <https://www.hse.gov.uk/pubns/books/hsg256.htm>
- 9 The latest LHSBR - Quarterly Progress Report is for December 2020 and can be found at: <https://www.rssb.co.uk/en/safety-and-health/leading-health-and-safety-on-britains-railway/lhsbr-quarterly-progress-report>
- 10 CP6 is Control Period 6 and covers the period 1st April 2019 to 31st March 2024.
- 11 Available to download from: <https://www.rssb.co.uk/en/safety-and-health/leading-health-and-safety-on-britains-railway>
- 12 See this ORR guidance: <https://www.orr.gov.uk/guidance-compliance/rail/health-safety/strategy/working-patterns-fatigue> RSSB guidance can be found at: <https://www.rssb.co.uk/en/what-we-do/key-industry-topics/fatigue-and-alertness>
- 13 To get a copy of this document from RSSB you will need to create an account with the organisation.