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22nd August 2017

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Dear Rory

Internal Audit Report: Management of Fatigue and Tram Operations Limited

TOL has reviewed your revised draft audit report sent on **14th August 2017**. Our specific comments on the text are set out in the attached mark-up; in this cover letter we address general themes categorised by the report's "*Management Actions*."

Whilst TOL notes that the draft has moved on since the first circulated draft of 11th July 2017, TOL remains concerned that the wording of the report in places and in particular with regard to the Management Actions does not reflect the evidence the Auditor has reviewed. TOL welcomes the opportunity for continuous improvement. However, identification of areas of improvement should be grounded on an accurate and complete analysis of the present position, based on the documentary evidence and the working practices which the Auditor observed (and has commented on to TOL as part of this audit process).

Taking the Management Actions in turn:

- 1 SM0003: Safety Critical Employees – Management of Fatigue**
- 1.1 TOL's revised procedure has been reviewed by the Auditor and addresses the points raised. If this is no longer the position, please specify those issues you consider to be outstanding.

2 Absence of Formal Process for Undertaking a Fatigue Risk Analysis

- 2.1 All of the issues identified under this action are areas in which TOL has existing processes to facilitate discussions with its drivers.
- 2.2 The Auditor is aware of TOL's policy on the distance that drivers live from the depot and that where this presents an issue; TOL will look at more flexible rosters and/or require that the individual makes work pattern changes.
- 2.3 All incidents and investigations include a review of the hours worked by the driver or controller concerned; as such consideration is always given in practice to whether a causal factor of that incident may have been fatigue. If relevant this is discussed with the individual concerned and documented in the driver's file.
- 2.4 Variances in working hours are checked by the allocations team, and any necessary adjustments made to subsequent shifts to ensure that the driver does not breach the working hours parameters set by TOL. TOL is therefore unclear as to what the Auditor's proposed management action is additionally recommending when control measures have already been implemented.

3 ORR Good Practice Guidelines – Fatigue Factors

- 3.1 TOL reviews relevant guidance produced by the ORR in addition to its use of the HSE Fatigue Index Tool. Work has been undertaken to address each of the ORR's Fatigue Factors; by way of summary TOL confirms the following:
 - Repetitive routes: TOL have prepared driving schedules that provide an opportunity for drivers to drive over each of the 4 lines of the network wherever possible during the course of their shift.
 - Long night turns: Under normal circumstances night turns rarely exceed 8 hours; the later part of these turns is spent preparing trains in the yard to minimise the risk of driving fatigue.
 - Insufficient rest before starting a night shift after working an early shift: the minimum rest period employed by TOL is 12 hours, when transitioning from early to late this period is extended to 43 hours or conversely 32 hours when transitioning from late to early.
 - High vacancy levels: TOL are operating at the agreed establishment level.

- Very short turnaround time provided: the turnaround time in each diagram is proportionate to the journey time (of approximately 45 minutes).
- Poor timing of meal breaks in early shifts: breaks are planned to ensure that drivers are not driving for long periods.
- Variations in start time of spare turns: variations in the start time of spare turns are governed by the maximum working hours' criteria of 12 hours minimum rest.
- Not including training days within the roster: Training replaces driving duties within the roster.

4 Consideration of ORR's Fatigue Factors

- 4.1 It would be helpful if the Auditor was able to make this action more specific. As the Auditor is aware, changes to drivers' hours of work including shift exchanges are regulated by the controls within the Driver Allocation System ("DAS"). Drivers are made fully aware of their hours and the parameters in terms of shift changes during their initial training.
- 4.2 Please specify what, in addition, you consider TOL should be reviewing in order to adhere to the ORR's good practice in respect of drivers' hours and shift exchanges.

5 TOL's Fatigue Awareness Training

- 5.1 Fatigue awareness and personal assessment of fatigue risk forms part of TOL's drivers' initial training and has been subject to further refresher briefings to the drivers and the Control Room staff as identified by the Auditor.
- 5.2 Controllers are familiar with the Drivers and are best placed to identify any potential fatigue issues when a driver is signing on as fit for duty. The report should recognise that it is not always possible to identify whether someone is fatigued or whether they may become fatigued before the end of their shift. TOL is unclear as to what further additional relevant training could be conducted to assist Controllers, but would welcome further discussion with TfL.
- 5.3 The Auditor interviewed TOL's roster designer as part of its audit. TOL's roster designer was trained by TfL in 1989 and has 28 years specific experience in roster design. As confirmed in another TfL audit of TOL's scheduling and rosters on the 3rd August 2017 a review of the roster design confirmed that there were no areas of concern and that it was sufficiently suitable for controlling fatigue. TOL therefore does not

consider that this is an outstanding action and would find clarification useful.

6 Monitoring of overtime and exceedances

- 6.1 As the Auditor will be aware, exceedances of the working time parameters which TOL has in place are low. These are identified through the daily review by the allocations team, discussed individually between driver managers and the driver concerned and reviewed as part of the monthly safety management review meetings. TOL is seeking to reduce such instances further through refresher training to increase the awareness of Controllers in terms of monitoring a driver's hours. TOL will continue to monitor this issue and where any trends emerge these will inform its FRMS.

7 Documenting of procedures

- 7.1 TOL understands that the Auditor found on interview that all of these procedures were well known and understood. We note that the audit has not concluded that individuals' knowledge in respect of these issues or how employees should respond was considered deficient. Accordingly, whilst TOL could write a series of work instructions for these particular issues the effect on actual working practices would be limited, TOL would welcome further discussion as to what specific documentary records should be introduced.

8 Categorisation of night workers

- 8.1 The practice of drivers on late turn being involved in tram preparation for the second half of their shift was not a measure introduced to ensure that they would not be categorised as night shift workers. This is an example of good practice in that drivers were otherwise being removed from the safety critical work of driving late at night on a regular basis. This change was discussed and approved in consultation with the drivers' trade unions and safety representatives.
- 8.2 TOL has conducted its own analysis of its shifts against the Working Time Regulations and has determined that its late shift workers should not be categorised as night workers as such shifts are not sufficiently regular and/or they do not work the required minimum of 3 hours between 23.00 and 06.00.
- 8.3 TOL would like to discuss why the Auditor considers that any of TOL's drivers should be categorised as night workers and even if that categorisation is correct what additional measures it considers TOL should introduce.

9 Fatigue Risk Assessment of the Driving Environment

- 9.1 There are a number of conduits for consultation with drivers in which any issues concerning cab design can be raised and discussed. As TOL has done previously if it considers there is way of improving cab design, functionality and/or controls whether it is potentially impacting on fatigue or for any other reason these are raised formally with TfL during the Modification Panel Meetings. If the Auditor considers that the cab design is something which contributes to fatigue risk TOL would welcome TfL commissioning a specialist study to consider the issue further.

In light of the comments above and in the mark-up draft attached, TOL considers that a number of these recommendations are not currently substantiated by the totality of the evidence reviewed by the Auditor or else should be revised to reflect more accurately the position and evidence ascertained by the Auditor.

TOL is eager to work with TfL to improve health and safety processes wherever it can. So that the engagement can be as constructive as possible, any audit needs to be as objective and clear as possible as to what is in place, what is outstanding and what is being recommended. In its current form, the draft audit does not meet those aims.

We look forward to meeting with you on Wednesday 23 August to discuss.

Yours sincerely



Andy Wallace

INTERNAL AUDIT REPORT

HSE & Technical

Management of Fatigue in Tram
Operations Limited - TOL (IA 17 780)

Jackie Townsend, Interim Managing
Director TOL

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Audit information

Fieldwork started	13 06 2017
Fieldwork completed	15 06 2017
Auditor	Peter Buzzard
Audit Manager	Mike Shirbon

INTRODUCTION AND BACKGROUND

London Trams is the name given to the tramway linking Croydon town centre with Wimbledon, Beckenham Junction, Elmers End and New Addington. London Trams has been owned by Transport for London (TfL) since July 2008.

Tram Operations Limited (TOL), part of FirstGroup plc, is responsible for operating the trams. TOL is based at Therapia Lane Croydon and employs 151 tram drivers as follows:

- 98 main roster drivers;
- 20 drivers based permanently on the early roster;
- 16 drivers based permanently on the late roster; and
- 17 drivers made up of support staff that are certified to drive trams. These drivers are required to complete one driving roster every 28 days.

TOL carried out an audit of its Fatigue Risk Management System (FRMS) in May 2017. The audit was supplemented by completing the FRMS checklist in Appendix F of the ORR guidance – Managing Rail Staff Fatigue. We have highlighted in this audit report where TOL's own audit has identified similar findings to this one.

Objective

This audit was requested to provide assurance on the effectiveness of TOL's fatigue management arrangements.

Scope

This audit focused on the control environment in relation to the following key risk areas:

- Governance.
- Education and Training.
- Fatigue Risk Assessment.
- Fatigue Reporting.
- Physical Environment.
- Audit and Review.

The audit also considered TOL's Fatigue Risk Management System (FRMS) with respect to the Office of Rail and Road (ORR) guidance – Managing Rail Staff Fatigue.

The guidance is aimed at companies and individuals who have responsibility for managing fatigue in railway staff, including those who have control of safety critical work under regulation 25 of the Railways and Other Guided Transport Systems (Safety) Regulations 2006 (ROGS). The guidance gives '*advice on good practice in managing fatigue associated with work in the rail industry*'; it is intended to provide '*practical advice on what responsible employers should already be doing*'.

EXECUTIVE SUMMARY

All the scope areas were examined during the audit.

This audit provides assurance against TOL's own standards and identifies areas for potential improvement based on ORR guidance.

Areas of Effective Control

We identified the following areas of effective control with regard to TOL's own FRMS:

- TOL's standards and limits on working hours have been effectively communicated;
- Variances in hours worked including overtime, exceedances and shift exchanges are being managed in compliance with TOL's standards and limits;
- Employee consultation has taken place on roster changes; and
- When booking on, drivers are checked by Control Room staff for signs of fatigue, including effects from prescription and over the counter medications.

Comment [Office1]: There are further examples of effective control and good practice within the report – TOL believe these should be reflected in the executive summary.

Opportunities for Improvement

The following findings are areas for potential improvement of TOL's FRMS with respect to the ORR guidance on Managing Rail Staff Fatigue, which states:

'Following the guidance is not compulsory and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law'.

Several of these findings align with work already underway following TOL's own audit of their FRMS and TOL's completion of the FRMS checklist in Appendix F of the ORR guidance:

- Updating the FRMS to detail the roles and responsibilities for those employees involved in managing fatigue and the requirement to review the FRMS when the effectiveness of the arrangements is in doubt;
- Formalising the process for determining when to carry out a fatigue risk analysis;
- The consideration of ORR's Good practice guidelines – Fatigue Factors, and industry good practice, in addition to applying the HSE Fatigue Risk Index Tool to the roster design;
- The consideration of ORR's Good practice guidelines – Fatigue Factors, in addition to numerical limits, in the management of changes to driver's hours of work, including shift exchanges;
- Reviewing fatigue awareness training for managers and supervisors to ensure it includes factors that increase fatigue and how to recognise fatigue in others;
- Analysing, communicating and trending data available from monitoring for fatigue implications and for reviewing the effectiveness of the FRMS;
- Documenting the procedures for managing fatigue by the Control Room and supervisors e.g. driver booking on, approving overtime, exceedances, shift exchanges and approving medications;

Comment [Office2]: See response in main body of the report

Comment [Office3]: See response in main body of the report

Comment [Office4]: See response in main body of the report

Comment [Office5]: See response in main body of the report.

Comment [Office6]: See response in main body of the report.

Comment [Office7]: See response in main body of the report.

Comment [Office8]: See response in main body of the report.

Fatigue Management in Tram Operations Limited - TOL (IA 17 780)

- Reviewing Working Time Regulations and industry good practice to determine if late shift workers, particularly those on permanent late shifts, should be classified as night shift workers; and
- Formalising the arrangements for including within the FRMS the design of the cab and driving environment, and its associated impact on fatigue risk.

Comment [Office9]: See response in main body of the report.

Comment [Office10]: See response in main body of the report.

DETAILED FINDINGS

1.0 Governance

1.1 Ownership and Control of Fatigue Management Arrangements

Regulation 25 of ROGS Regulations 2006 - states that *"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."*

SM0003 – Safety Critical Employees – Management of Fatigue - details TOL's Fatigue Risk Management System. SM0003 is available via TOL's electronic document control system (XDMS). It is not formally communicated. QP0005 – Document Control - Clause 4.1.3 – states that, as a minimum, documents shall be reviewed every two years. SM0003 was last reviewed in June 2014. SM0003 does not clearly detail the roles and responsibilities for those employees involved in managing fatigue (**Management Action 01**).

Recommendation 6 from TOL's audit of their FRMS identified that a full review of TOL's fatigue management arrangements is required. A draft copy of the revised SM0003 was evidenced as detailing roles and responsibilities for those employees involved in managing fatigue (**See Management Action 01**).

SM0003 Clause 2 – details TOL's fatigue management policy. The policy was evidenced as including Senior Management commitment, allocation of adequate resources and collaboration. This is in accordance with the ORR's guidance – Managing Rail Staff Fatigue - Section 5.13.

1.2 Fatigue Preventative and Protective Measures

ORR's guidance – Managing Rail Staff Fatigue - Section 6.53 - states that controllers of safety critical work should be aware of factors affecting the onset of fatigue and reduce these as far as is reasonably practicable.

TOL's fatigue control measures are based on TOL's standards and limits on working hours, breaks, shift exchanges and exceedances (referred to as breaches by TOL). These are recorded in SM0003. Recommendation 1 from TOL's audit of their FRMS identified that those responsible for making shift exchanges should consider fatigue implications in addition to checking compliance with TOL's standards and limits. ORR's Good Practice Guidelines – Fatigue Factors, states that fatigue factors, in addition to numerical limits, should be considered in the management of changes to driver's hours of work, including shift exchanges (**Management Action 04**).

TOL's standards and limits are communicated as follows:

- Lesson Plan TLP 0005 – Drivers' Hours - this lesson plan is delivered as part of the driver's basic training.

Comment [Office11]: TOL's method of formally communicating documents is via the XDMS system. Those that need access to safety management system documents do so in this way.

Comment [Office12]: SM0003 does not clarify roles and responsibilities in the style the auditor likes – roles and responsibilities are clearly identified at appropriate points in the document.

Comment [Office13]: The ORR guidance lists 8 factors that are thought to contribute to staff fatigue; TOL can evidence consideration of these factors within their FRMS design.

- ALO 0030 – New Employee Induction Checklist – delivered as part of employee induction including TOL's working hours standards and limits in relation to safety critical work.
- Briefing dated 19 May 2017 - reminding drivers of the requirement to be fit for duty when they sign on to work and their responsibilities in relation to fatigue.
- Briefing – Safety Critical Work, Fatigue – dated 8 December 2016 - evidenced as being distributed with the drivers' pay slips. This briefing had also been delivered on a one to one basis by the Operations Manager to approximately 66% of the drivers to date.

1.3 Joint Management / Staff Consultation Arrangements

ORR's guidance – Managing Rail Staff Fatigue - Section 6.68 – states that controllers of safety critical work should consult with safety critical workers and their safety representatives on the arrangements needed to manage fatigue and when standards and limits are to be changed.

SM0003 Section 5 – states that TOL will consult with employee representatives when new roster patterns are introduced. An e-mail dated 12 February 2016 was evidenced confirming that ASLEF had been consulted, and their suggestions incorporated, on the latest rosters.

1.4 Effectiveness of Control Measures is monitored

ORR's guidance – Managing Rail Staff Fatigue – states that controllers of safety critical work should monitor the arrangements for managing fatigue to assess how effectively they are controlling the risks arising from fatigue. This includes actual hours worked, exceedances and overtime levels. Trends from monitoring should be used to improve the FRMS.

TOL's allocation team are responsible for allocating drivers to rosters and reviewing compliance to the standards and limits of actual hours worked. The allocation team were able to evidence that the following data is recorded:

- Hours Worked - are recorded on TOL's Driver Allocation System (DAS). Individual driver's time sheets are also retained as a hard copy record of what is entered into DAS.
- Overtime - is recorded on the overtime sheet which is populated by the Control Room for each shift. This is primarily used for payment purposes.
- Exceedances – DAS automatically flags any exceedances to TOL's standards and limits. Exceedances are also recorded on the variations sheet which is populated by the Control Room. The Control Room log book is used to record any exceedances and is countersigned by the authoriser. Unexplained exceedances in DAS were evidenced as being escalated to the management team for review.
- Shift variations – the planned shifts worked by each driver (early or late) are shown on the roster.

- Shift exchanges - are shown on the variations sheet as MX or DX depending on whether the shift exchange was requested by the employee or the Company.
- Absence - is recorded on DAS along with the reason. Absence monitoring is also completed by Human Resources for the purposes of employee support.

Recommendation 7 from TOL's audit of their FRMS identified that an assessment of staff that regularly work overtime should be made to determine if other control measures should be implemented to safeguard against fatigue. TOL should also consider analysing other data available from monitoring for fatigue implications. This analysis should also be used to review and update the FRMS (Management Action 06).

Compliance to TOL's working hours standards and limits is measured as a Key Performance Indicator (KPI). This is reported to the Management Safety Meeting. A review is carried out of randomly selected time sheets for compliance to TOL's standards and limits (see section 3.5 of this report).

2.0 Education and Training

2.1 Basic Fatigue Awareness

ORR's guidance – Managing Rail Staff Fatigue - Section 5.65 - states that all staff should have a basic awareness of how to recognise fatigue in themselves or others.

TOL's fatigue awareness training for drivers is included in the drivers' Passenger Service Assessment (PAX) training. This is based on adherence to TOL's standards and limits on working hours and shift patterns. The Operations Director, Operations Manager, Duty Managers (x5) and Control Room Staff (x15) are all trained as drivers and as such receive the basic fatigue awareness training which was evidenced as including:

- Lesson Plan TLP 0005 – Drivers' Hours – including TOL's standards and limits on working hours, breaks, shift patterns and rest periods.
- DVD "The 21st Century Professional Driver" - is also shown to the drivers.
- TFM 0011 - Safety Responsibility Statement - including drivers not being fatigued when reporting for duty and reporting if they become fatigued during duty. This statement is signed by each driver.

Training Records are held on XDMS. The records were evidenced as confirming that all those available to drive have passed the Passenger Service Assessment (PAX) training.

Formal refresher training is not in place. Refreshment of the fatigue management arrangements is provided by briefings given to remind drivers of the fatigue management arrangements and their responsibilities (as evidenced in section 1.2 of this report).

Comment [Office14]: TOL use other data sources to monitor the effectiveness of the FRMS – an example of this is investigating whether fatigue is an underlying cause of safety and operational incidents. Causation is discussed at monthly safety management forums and an appropriate course of action agreed with the HOS.

Comment [Office15]: All tram drivers undertake formal competence assessment at biennial intervals – fitness for duty and the factors that influence this are discussed and documented as part of this recertification process.

2.2 Fatigue Training for Management and Supervisors

ORR's guidance – Managing Rail Staff Fatigue - Section 5.39 – states that where people have responsibilities for managing fatigue, there should be adequate competence management arrangements in place to ensure that they acquire and retain the appropriate fatigue knowledge and skills. This will be particularly important for supervisors and managers of staff carrying out safety critical work, and staff who devise and amend rosters. ORR's guidance – Managing Rail Staff Fatigue - Section 5.65 – also states that basic awareness of how to recognise fatigue in others is especially important for staff responsible for carrying out fitness for duty checks and for those responsible for ensuring staff remain fit for duty throughout their shifts.

Recommendations 1 and 2 from TOL's audit of their own FRMS identified that not all employees have sufficient knowledge of the factors that increase fatigue (specifically those carrying out briefings and checking compliance when shifts are exchanged). TOL should review their fatigue awareness training for managers and supervisors to ensure it includes factors that increase fatigue and how to recognise fatigue in others (**Management Action 05**).

2.3 Training in Roster Design

ORR's guidance – Managing Rail Staff Fatigue - Section 6.17 – states that it is vital that staff who devise working patterns receive training in roster design and the implications for fatigue. It could not be evidenced that TOL's roster designer had received training in minimising fatigue in roster design (**See Management Action 05**).

Comment [Office16]: All managers and supervisors have been briefed on the factors that are thought to cause fatigue. Evidence to that effect was provided to and acknowledged by the auditor. Those responsible for system design and operation are familiar with the ORR guidance – evidence to this effect was also acknowledged by the auditor at the time of audit.

3.0 Fatigue Risk Assessment and Managing the Risks

ORR's guidance – Managing Rail Staff Fatigue - Stage 2 – states that controllers of safety critical work should identify, set and adhere to appropriate standards for working hours and working patterns, observing any relevant working time limits that apply. The standards and limits set should take into account recognised national industry good practice guidance applying to railways and other guided transport systems.

Comment [Office17]: TOL's roster designer was trained by TfL in 1989 and has some 28 years experience in the role. A recent TfL audit of TOL scheduling practices have confirmed there are no areas of concern and that the roster is efficient and suitable for controlling fatigue.

3.1 Standards and Limits

TOL's standards and limits for working hours were evidenced as considering:

- ORR's guidance – Managing Rail Staff Fatigue Section 6.20 – detailing the criteria to which numerical limits should be applied.
- Limiting overtime with respect to not exceeding the maximum permitted hours without authorisation.

Comment [Office18]: TOL's standards and limits for working hours are more stringent than those identified as being acceptable within bus and rail.

3.2 Controlling Variances and Exceedances

ORR's guidance – Managing Rail Staff Fatigue - Section 5.44 – states that the FRMS should outline in particular the organisational arrangements for controlling overtime, shift exchange, travel time and on-call duties.

Potential fatigue due to variances, shift exchanges and overtime is controlled with respect to TOL's standards and limits. The Control Room staff are not trained in recognising other fatigue causal factors or fatigue in others (**See Management Action 05**). The process by which the Controllers (located within the Control Room) manage variances and exceedances is not documented. This is being reviewed as part of TOL's full review of their FRMS (**Management Action 07**). The duty Control Room Manager was interviewed to evidence that the controls relating to TOL's standards and limits are understood and actioned as follows:

- Overtime is checked to be within TOL's standards and limits and recorded on the overtime sheet. Any variances leading to the need for overtime are recorded on the variance sheet.
- Exceedances are authorised by a supervisor or relevant line manager, recorded in the logbook and countersigned by the authoriser. The last exceedance was evidenced in the Control Room logbook as occurring on 26 July 2016 at 18:51. A secondary check for any exceedances is made by the allocations team, see section 1.4 of this report.
- Shift exchanges are checked to be within TOL's standards and limits and recorded on the variations sheet as MX or DX depending on whether it was requested by the employee or the Company respectively.

3.3 Provision of Breaks

ORR's guidance – Managing Rail Staff Fatigue - Section 6.57 – states that controllers of safety critical work should make arrangements for workers to take breaks during periods of duty.

Drivers' breaks are set within the timetabling. This was evidenced on the Duty Cards which detail the timetabling, and associated rest periods, for the routes driven within the roster. Where breaks do not take place at the designated time, or are reduced in length, the Control Room will make mutually agreed adjustments to accommodate additional break time elsewhere in the shift. This is not documented. Section 10 of TOL's audit of their FRMS recommends that guidelines on driver breaks are devised and agreed (**See Management Action 07**). SM0003 Clause 10 – Provision of Breaks – details the length and frequency of breaks. The number of occurrences where this clause is not met is not monitored or analysed (**See Management Action 06**).

3.4 Roster Design

ORR's guidance – Managing Rail Staff Fatigue - Appendix A – states that working patterns should be designed to incorporate good fatigue management principles and recommends that an assessment is carried out on the proposed pattern using a fatigue assessment tool. TOL's base rosters established in 2016 were evidenced as being analysed using the HSE Fatigue and Risk Index tool. Section 8 of TOL's audit of their own FRMS identified that rosters are assessed using the HSE Fatigue Index but no formal risk assessment of the roster had been carried out for factors that exacerbate fatigue. ORR's Good practice guidelines – Fatigue Factors, and industry good

Comment [Office19]: All control room staff have been briefed on fatigue and the factors that bring on it's onset.

Comment [Office20]: The auditor discussed how fatigue would be managed with controllers during the audit and confirmed he was satisfied that these staff members understand their responsibilities for managing fatigue. This can be clearly evidenced in the comments made by the auditor below.

Comment [Office21]: The reason this is not monitored is because system design prevents it.

practice, should be considered in addition to applying the HSE Fatigue Risk Index Tool to the roster design (**Management Action 03**).

3.5 Time Sheet Review

SM0003 - Clause 13 – states that time sheets will be randomly selected to review for compliance to the standards and limits on a periodic basis. This is carried out by the HR Manager and communicated by e-mail, including the details of which drivers were checked. An e-mail dated 22 May 2017 was evidenced as confirming that the time sheets for eight drivers, four controllers and one duty manager had been checked as complying for period 13 2016/17. The 2017/18 Inspections and Tours report - was also evidenced to confirm that this information is communicated to TOL's Safety Management Review Group on a periodic basis.

Comment [Office22]: See previous comment on roster design – although not formally documented in a risk assessment all of the fatigue factors in ORR's good practice guide can be evidenced in the roster design.

3.6 Managing the Fatigue Risk of Actual Hours Worked

The recording of actual hours worked, and the controlling of variances and exceedances, is detailed in sections 1.4 and 3.2 of this report. The actual hours worked are controlled with respect to TOL's standards and limits, other fatigue factors are not considered. A sample of actual hours worked, including variances, is not evaluated using a fatigue risk tool (**Management Action 02**).

Comment [Office23]: There is no requirement to do so – evidence has been provided that variances in working hours are checked and well managed by other means.

3.7 Consideration of Travelling Time in Fatigue Management

ORR's guidance – Managing Rail Staff Fatigue - Section 8.7 – states that fatigue management systems should include arrangements for assessing and controlling risks from travel time.

Driver travel time is considered in the recruitment process by recruiting drivers who live within a 1 hour commute of the depot. This ensures that if a maximum allowable 12 hour shift is worked, combined with 2 hours travelling to and from work, a 10 hour rest period is achieved.

Drivers are required to notify TOL of any changes of address, this requirement is included in ALO 0030 – New Employee Induction Checklist. The nature and duration of changes to a driver's travel time is not fatigue risk assessed (**See Management Action 02**).

Comment [Office24]: This assumes a minimum turn around time of 12 hours – TOL rosters provide a planned minimum turnaround time of 16 hours giving at least 14 hours rest after travelling time is taken into account.

3.8 Managing Changes to Employees Circumstances

ORR's guidance – Managing Rail Staff Fatigue - Section 6.77 – states that safety critical workers should be made aware of the procedures to be followed if they consider that there are circumstances, such as significant life events or medical conditions, which may cause them to either be or become so fatigued that health and safety could be significantly affected.

SM0021 – Driver Monitoring – includes details of domestic circumstances. This procedure is applied to drivers at set intervals during their first year of employment. All drivers, including those rostered once a month, are then monitored annually. This process is also implemented following behaviour or performance issues.

Comment [Office25]: It was explained to the auditor that on notification of a change of address, the individual's line manager would have a discussion with the individual as part of normal good management practice, this discussion would cover travelling time and any necessary reasonable adjustments – evidence to support this claim is available to the auditor if required.

Reporting changes to employee circumstances, with the exception of home address, is not included in ALO 0030 – New Employee Induction Checklist, or TFM 0011 - Safety Responsibility Statement. There is no documented process for drivers to report changes in circumstances (See Management Action 07) or for those changes to be fatigue risk assessed (See Management Action 02).

3.9 Managing the Risk of Fatigue when booking on and off Shifts

ORR's guidance – Managing Rail Staff Fatigue - Sections 5.64 and 5.65 – state that companies should have fitness for duty checking arrangements to ensure that staff reporting for safety critical work are not suffering, or likely to suffer during their shift, from fatigue. This checking should be carried out face to face by staff with awareness in recognising fatigue.

The requirement for employees not to book on if fatigued is included in the driver induction and Lesson Plan 5 of their training. This requirement was also included in the briefing – Safety Critical Work, Fatigue – dated 8 December 2016, see section 1.2 of this report.

Drivers sign on at the Control Room where the controllers monitor their fitness for work including fatigue. The controllers are not trained in recognising the symptoms of fatigue (See Management Action 05).

Control Room staff were interviewed to determine what they would do if a driver appeared unfit for work. It was stated that they would firstly speak to the driver, and if deemed unfit to work they would be signed off as sick, sent home and their roster re-assigned. This process, including review of the reasons for fatigue, how to manage the individual, escalation (if necessary) and ensuring the safety of the individual in returning home is not documented (See Management Action 07).

3.10 The use of Fatigue Risk Assessment Tools

ORR's guidance – Managing Rail Staff Fatigue - Section 5.32 – states that the FRMS should outline how fatigue risk assessments are to be carried out, who should carry them out, and under what circumstances they should be completed, for instance before changes in working patterns, after incidents or reports of concerns about fatigue.

TOL has no formal process for determining when a fatigue risk analysis should be carried out. For example FOM 003 – Unauthorised SPAS Event Report - was evidenced as confirming if the working limits had been exceeded but does not consider any other fatigue risk factors. (See Management Action 02).

Drivers on late shifts are allocated to tram preparation duties for the later part of their shift. For this reason TOL does not consider drivers working late shifts, either permanently or on rotation, should be considered as night workers and therefore subject to fatigue risk assessment. For comparison purposes LU considers any driver completing 3 rostered hours between 11pm and 6am on a regular basis to be classified as night workers. Working Time Regulations and industry good practice should be reviewed to determine if

Comment [Office26]: TOL operate a supervised booking on procedure whereby the fitness and welfare of every driver is established before undertaking safety critical work, all employees have the opportunity to discuss welfare issues with their manager either informally when booking on for duty or formally at a pre-arranged meeting if required. TOL also provide access to 2 confidential support services for employees that feel they are not adequately supported through normal channels.

Comment [Office27]: All controllers have been briefed on fatigue as previously stated and acknowledged by the auditor.

Comment [Office28]: The process is well understood by those that use it, evidence to that effect was gathered by the auditor through interview and confirmed to be sufficient at the time of audit.

Comment [Office29]: TOL's investigation procedure requires the investigator to identify root causation and where appropriate make recommendations for improvement.

late shift workers, particularly those on permanent late shifts, should be classified as night shift workers (**Management Action 08**).

3.11 Fatigue Related Medical Fitness for Work

ORR's guidance – Managing Rail Staff Fatigue - Section 6.6 – states that Regulation 24(1) (a) of ROGS requires controllers of safety critical work to ensure that people carrying out such work have been assessed as fit for that work, and Regulation 24(1) (d) requires them to have in place arrangements for monitoring the ongoing fitness of such staff. These fitness assessments and monitoring arrangements should take potential risks from fatigue into account.

SM0008 – Fitness Standards (Safety Critical Work) - Clause 3.2 - defines the frequency at which in-service medicals, following the initial medical, are carried out. SM0008 - Appendix A – Medical Standards – details minimum medical fitness requirements for drivers including checks for alerted levels of consciousness and that those drivers with sleep apnea are deemed unfit for duty until treatment is successful. Medicals are completed by Maitland Medical Services.

Late shift drivers, particularly permanent late shift drivers, are not considered by TOL as night shift workers and therefore not subject to a medical appropriate for night shift workers (**See Management Action 08**).

ALO0030 – New Employee Induction Checklist – includes reporting the use of prescription and over the counter medicines to the company. Control Room staff were interviewed to determine what they would do if a driver reports they are taking medication. It was stated that the medication is checked against a permitted medications list issued by Maitland Medical Services. If the medication is not on the permitted list the driver is either told not to take the medication or stood down. If a driver is stood down Maitland Medical Services are e-mailed with details of the medication to determine if the driver is fit for duty. The procedure for reporting medications, and the subsequent actions, is not documented (**See Management Action 07**).

Comment [Office30]: TOL have reviewed their rosters against Working Time Regulations and believe that their drivers are not night workers. This was explained during the audit. The train preparation example referred to in the report was not introduced to avoid night working, it was a proactive measure taken by the company to manage fatigue risk to drivers following consultation with staff safety representatives.

Comment [Office31]: TOL have reviewed their rosters against Working Time Regulations and believe that these drivers are not night workers.

Comment [Office32]: The procedure is documented however the procedure could not be located at the time of audit as it was being amended – practical application of the process was discussed with controllers at the time of audit and agreed by the auditor as being embedded and well understood.

4.0 Fatigue Reporting

4.1 Process for Staff to Report Fatigue Related Issues

ORR's guidance – Managing Rail Staff Fatigue - Sections 5.38 and 5.75 – states that there should be open, easy-to-use channels of communication for reporting any concerns and that a non-punitive reporting system is essential to encourage staff to report fatigue.

TOL employees can report concerns using FirstGroup's confidential reporting system (managed by Ethics Point) or CIRAS. It was evidenced that this is publicised on notice boards around the site. The HR Manager is TOL's nominated champion in CIRAS.

Confidential reports have been received twice on First Group's system and twice on CIRAS. It was evidenced that only one of these reports, received via CIRAS in 2014, referred to fatigue. This related to fatigue caused by shift rotations and included a response by TOL.

TOL's completion of the FRMS checklist in Appendix F of the ORR guidance recognised that employees use more informal routes to report fatigue issues, for example talking to their manager. The procedure for recording and managing these reports is not documented (See Management Action 07).

5.0 Physical Environment

TOL advised that TfL provide the rolling stock and as such they consider the design of the cab, and its associated impact on fatigue risk, to be TfL's responsibility in the first instance. HSE document HSG48 - Reducing Error and Influencing Behaviour - refers to the combined effect of the individual, organisation and the job. There is a risk that in considering these factors in isolation, the collective impact on fatigue may not be identified. The arrangements for including the design of the cab, and its associated impact on fatigue risk, within the FRMS should be formalised (Management Action 09).

6.0 Audit and Review

ORR's guidance – Managing Rail Staff Fatigue - Section 5.84 – states that the FRMS should be a self-correcting process which periodically audits and reviews the effectiveness of the organisation's existing fatigue policy. The review should include the fatigue related organising, planning, implementing, and measuring processes.

TOL carried out an audit of their FRMS in May 2017. This was supplemented by completing the FRMS checklist in Appendix F of the ORR guidance – Managing Rail Staff Fatigue. Where this audit's findings concur with those from TOL's audit this is highlighted in this report.

QP 0005 – Document Control - Clause 4.1.3 - states that TOL documentation shall be reviewed every 2 years or earlier if part of an incident investigation. The last recorded review of SM0003 was in June 2014. SM0003 does not include a statement to undertake a review of the FRMS when the effectiveness of the arrangements is in doubt (See Management Action 01).

TOL Integrated Audit Schedule 2017 - was evidenced as including an audit of TOL's Safety Management System. Items to be covered in this audit are based on TOL's Risk Profile and discussions with the Head of Safety. This was evidenced as including compliance to ROGS.

Comment [Office33]: Verbal concerns raised by staff to managers are dealt with at the lowest possible level in the first instance – usually resulting in a safety conversation between the individuals concerned. Records of such reports (pre-dating the audit) are available within staff personal files, these can be made available for examination by the auditor.

Comment [Office34]: Cab design and suitability forms part of the user acceptance risk assessment needed to bring an asset into operation on the network. TfL as the asset are responsible for ensuring this assessment is completed and that resulting risk is managed to ALARP levels. TOL is happy to consider the findings of these assessments as part of their FRMS however to date TfL has not provided this information. Suggest that this recommendation first formalises how information of this nature is shared as any subsequent action by TOL stems from this.

Comment [Office35]: The FRMS is based on the principle that foreseeable risk is designed out before work that may result in an individual becoming fatigued is undertaken – control is established through regular system of monitoring and review with appropriate management action taken to manage risk to an acceptable level. TOL believe that the nature of the controls already embedded in the system are proportionate and well managed.

APPENDIX 1: MANAGEMENT ACTIONS

Ref.	Description	Report Paragraph	Management Action	Owner / Date
01	SM 0003 – Safety Critical Employees – Management of Fatigue - does not clearly detail the roles and responsibilities for those employees involved in managing fatigue, or include a statement to undertake a review of the FRMS when the effectiveness of the arrangements is in doubt.	1.1 6.0	These requirements should be included in the revised SM 0003 being developed as part of TOL's full review of its Fatigue Risk Management System.	
02	TOL has no formal process for determining when a fatigue risk analysis should be carried out including: <ul style="list-style-type: none"> • Post Incident. • Sampling actual hours worked. • Risk assessing changes to travel time. • Risk assessing changes to driver's circumstances. 	3.6 3.7 3.8 3.10	TOL's FRMS should outline how fatigue risk assessments are to be carried out, who should carry them out, and under what circumstances they should be completed.	
03	ORR's Good practice guidelines – Fatigue Factors, and industry good practice, are not considered in addition to applying the HSE Fatigue Risk Index Tool to the roster design.	3.4	ORR's Good practice guidelines – Fatigue Factors, and industry good practice - should be considered in the roster design.	
04	TOL's fatigue control measures set limits on working hours, breaks, shift exchanges and exceedances. ORR's Good practice guidelines – Fatigue Factors, in addition to numerical limits, are not considered in the management of changes to driver's hours of work, including shift exchanges.	1.2	ORR's Good practice guidelines – Fatigue Factors, in addition to numerical limits, should be considered in the management of changes to driver's hours of work, including shift exchanges.	

Fatigue Management in Tram Operations Limited - TOL (IA 17 780)

05	<p>TOL's fatigue awareness training does not include:</p> <ul style="list-style-type: none"> • Personal assessment of fatigue risk. • Training for management and supervision on the factors that increase fatigue. • Training for Control Room staff in recognising fatigue in drivers when booking on. • Training in minimising fatigue in the roster design. 	<p>2.2 2.3 3.2 3.9</p>	<p>TOL's training should be reviewed to ensure that drivers are competent in recognising fatigue risk in themselves, and that those responsible for authorising overtime, exceedances and shift exchanges are competent in recognising fatigue risk in others.</p> <p>Training should be provided in minimising fatigue in the roster design.</p>	
06	<p>Data available from monitoring, for example overtime and exceedances, is not analysed, communicated, trended or used to review and update the FRMS.</p> <p>The number of occasions where breaks are moved or not taken is not monitored.</p>	<p>1.4 3.3</p>	<p>The process to ensure data from monitoring, and other sources, is used to review and update the FRMS should be considered.</p>	
07	<p>The following procedures are not formally documented:</p> <ul style="list-style-type: none"> • The Control Room's management of variances, exceedances and changes to breaks. • Reporting driver's changes in circumstances. • The process when drivers are deemed unfit for work due to fatigue. • The procedure for reporting medications, and the subsequent actions. <p>The procedure for recording and managing fatigue reporting by staff.</p>	<p>3.2 3.3 3.8 3.9 3.11 4.1</p>	<p>TOL's FRMS should be reviewed to ensure that the processes for managing and reporting fatigue are documented. The procedure for reporting medications, and the subsequent actions should be documented.</p>	

Fatigue Management in Tram Operations Limited - TOL (IA 17 780)

08	For fatigue risk assessment, and medical fitness for work purposes, TOL does not consider late shift workers, particularly those on permanent late shifts, to be night workers.	3.10 3.11	Working Time Regulations and industry good practice should be considered to determine if late shift workers, particularly those on permanent late shifts, should be classified as night shift workers.	
09	TOL does not fatigue risk assess the driving environment as they consider the design of the cab, and its associated impact on fatigue risk, to be TfL's responsibility.	5.0	The arrangements for including the design of the cab, and its associated impact on fatigue risk, within the FRMS should be formalised.	

APPENDIX 2: DISTRIBUTION LIST

This report was sent to John Rymer, Managing Director TOL, and copied to:

Jonathan Fox	Director of London Rail
Rory O'Neill	Director, London Trams
Leon Daniels	Managing Director, Surface Transport
Rob Mair	Senior HSE Manager
Ruth Turner	Human Factors Specialist, HSE
Danny Powell	Performance Manager Trains, Northern line
Jonathan Morris	Head of Commercial Disputes Resolution
Karlene Reid	Key Risk Representative
Howard Carter	General Counsel
Simon Kilonback	Director of Corporate Finance
Sarah Bradley	Group Financial Controller
Clive Walker	Director Internal Audit
Robert Kemp	Senior Audit Manager
Jill Collis	Director of Health, Safety & Environment
Ian Gaskin	Head of HSE Improvement Programme & HSE Professional Services
Mike Shirbon	Audit Manager
Gareth Powell	Director of Strategy & Contracted Services

-----Original Message-----

From: Andrew Wallace [mailto: [REDACTED]]
Sent: 28 July 2017 21:13
To: O'Neill Rory (Trams); Kemp Robert
Cc: Jackie Townsend; Steve Duckering [REDACTED]
Subject: TfL Audit of TOL Fatigue Risk Management Arrangements
Importance: High
Sensitivity: Confidential

Rory, Robert

Thank you for meeting with us on Wednesday to discuss feedback on your Fatigue Management Audit. Thank you also for confirming you will be reviewing both the detail and the conclusions reached in your draft report. I thought it might be helpful to summarise our main observations made at that meeting. We are also able to provide detailed comments on the report but anticipate that it might be more useful to provide once we have your revised draft:

- At the end of the audit, TOL was given verbally a provisional conclusion of 'Generally Well Controlled'. This conclusion was then changed to 'Requires Improvement' in the draft report without any further discussion or indication either ahead of the release of the draft or at the meeting as to why the conclusion had changed;
- The audit does not appear to take into account Regulation 25 of ROGS (which requires that the control system implemented is proportionate to the risk level of the operation). Instead the audit was carried out against ORR's good practice rather than against TOL's SMS. As you have noted in the draft report, ORR's document 'Managing Rail Staff Fatigue' gives advice and guidance on good practice, rather than setting out a checklist of standards that must be achieved.
- TfL appeared not to recognise many areas in which TOL's systems reflect good practice because they had not been written up as formal procedures.
- TfL also appeared to not take into account the competence and expertise of the TOL staff operating the management system.
- The language and tone of the report was surprisingly negative, particularly given the auditor's initial conclusion of 'Generally Well Controlled'.
- All the recommendations have been assigned a priority level of either 1 or 2. However, TfL's own ranking system requires areas which do not reflect good practice to be recorded at priority level 3.

It would be helpful to know when you plan to reissue a revised draft for our comments. If you could give an indication of the timescales in correspondence it would be much appreciated.

Kind regards

Andy

Andy Wallace
Head of Safety
Tram Operations Limited
Registered England & Wales No: 097532
Tramlink Depot
Coomber Way
Croydon
CRO 4TQ



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From: O'Neill Rory (Trams)
Sent: 17 August 2017 16:38
To: 'Andrew Wallace'; Jackie Townsend
Cc: Mair Rob; Danny Powell (Performance Manager Trains, Northern Line); Shirbon Mike
Subject: RE: Fatigue Audit Report
Sensitivity: Confidential

Hi Andy,

The report remains a draft until we meet next week and agree the way forward. I think if you and Danny can discuss the recommendations in advance of our meeting that would be helpful, I agree that the 23 August meeting should be focussed on agreeing the way forward.

Rgds,
Rory

From: Andrew Wallace [REDACTED]
Sent: 17 August 2017 16:29
To: O'Neill Rory (Trams); Jackie Townsend

Cc: Mair Rob; Danny Powell (Performance Manager Trains, Northern Line); Shirbon Mike
Subject: RE: Fatigue Audit Report
Importance: High
Sensitivity: Confidential

Hi Rory

I'm not sure if you've had an opportunity to read the revised report yet but after looking through it I don't believe it reflects the fatigue management arrangements in place.

As I mentioned in my last email, I will send you our detailed comments now we have the revised report but in the meantime please can I request that it is not issued in its current state.

In terms of the meeting on the 23rd August – Danny and I had planned to sit down and discuss the draft recommendations; however in light of what's been reported by the auditor perhaps this time would be better spent discussing content and working jointly on a way forward?

Regards


A

Andy Wallace

Head of Safety

Tram Operations Limited
Registered England & Wales No: 097532
Tramlink Depot
Coomber Way
Croydon
CRO 4TQ



From: O'Neill Rory (Trams) 
Sent: 14 August 2017 14:57

To: Jackie Townsend [REDACTED]
Cc: Mair Rob [REDACTED]; Danny Powell (Performance Manager Trains, Northern Line)
[REDACTED]; Andrew Wallace [REDACTED]; Shirbon Mike
[REDACTED]
Subject: Fatigue Audit Report

Jackie,

Attached is the draft report. It is planned to discuss this in detail at a meeting on 23 August to capture the actions, names and dates to complete, these are set out on pages 15-17. Andy Wallace has been invited to this meeting but others will be welcome to attend.

Regards,

Rory

Rory O'Neill

Director London Trams

London Trams | Floor 11 | 17 Addiscombe Road | Knollys House | East Croydon | Surrey | CR0 6SR

[REDACTED]

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From: Powell Danny Head of Line Operations C&H and District Lines
Sent: 30 August 2017 10:50
To: 'Andrew Wallace'
Cc: Shirbon Mike
Subject: RE: Management of Fatigue in Tram Operations Limited (TOL) - Draft Review

Andy

Your correct, my thoughts on your comments

Regards

Danny

From: Andrew Wallace [mailto: [REDACTED]]
Sent: 30 August 2017 10:47
To: Danny Powell (Performance Manager Trains, Northern Line)
Cc: Shirbon Mike
Subject: RE: Management of Fatigue in Tram Operations Limited (TOL) - Draft Review

Thanks for this Danny – can you just clarify the notes in yellow please, they look like a combination on notes, points for discussion and evidence markers?

Regards

A

From: Danny Powell (Performance Manager Trains, Northern Line) [mailto: [REDACTED]]
Sent: 30 August 2017 10:27
To: Andrew Wallace [REDACTED]
Cc: Shirbon Mike [REDACTED]
Subject: Management of Fatigue in Tram Operations Limited (TOL) - Draft Review

Andy

Thank you for meeting up last week to discuss your / TOL concerns over the recent "Fatigue Audit"

We had a full and frank discussion around the audit report and how to get the report concluded with all parties content with the outcome.

We are now clear that the report reflects the responses given to the auditors during their visit.

- If there are areas that are factually incorrect then they should be raised (I will look through the email you sent Rory O'Neill and address each issue. I will ask for further evidence if required, and thank you for giving me direct access to Ray Hayter)
- TOL have a concern that the report does not recognise any area of good work they are doing in Fatigue Mgt (unbalances the report)
- Recommendations Vs Observations for example SM0003 (TOL Fatigue Mgt Std) has been re written and was shown to the auditor, however a recommendation was given to review SM0003
- Where there is a clear gap in processes or procedures then a recommendation should remain in place
- Further improvements pending: TOL have stated they are doing a lot of work with independent "Fatigue experts" to look at all areas of their operation and would like this recognised

The above I intend to use of a terms of reference to work with you to "Flush out" all the issues, I then plan for Mike Shirbon, you and myself to sit down and agree the way forward to finalise the report

Hope this is a fair reflection on how we agreed to move forward.

Items from your letter to Rory 22nd August (Ref:AW220817.let)

EXECUTIVE SUMMARY

All the scope areas were examined during the audit.

This audit provides assurance against TOL's own standards and identifies areas for potential improvement based on ORR guidance.

Areas of Effective Control

We identified the following areas of effective control with regard to TOL's own FRMS:

- TOL's standards and limits on working hours have been effectively communicated;
- Variances in hours worked including overtime, exceedances and shift exchanges are being managed in compliance with TOL's standards and limits;
- Employee consultation has taken place on roster changes; and
- When booking on, drivers are checked by Control Room staff for signs of fatigue, including effects from prescription and over the counter medications.]

Comment [Office1]: There are further examples of effective control and good practice within the report – TOL believe these should be reflected in the executive summary.

Above should be noted

=====

1 SM0003: Safety Critical Employees – Management of Fatigue

- 1.1 TOL's revised procedure has been reviewed by the Auditor and addresses the points raised. If this is no longer the position, please specify those issues you consider to be outstanding.

Can you send me a copy of SM0003 as shown to the auditor.

=====

SM0003 – Safety Critical Employees – Management of Fatigue - details TOL's Fatigue Risk Management System. SM0003 is available via TOL's electronic document control system (XDMS). [It is not formally communicated.] QP0005 – Document Control - Clause 4.1.3 – states that, as a minimum, documents shall be reviewed every two years. SM0003 was last reviewed in June 2014. SM0003 does not clearly detail the roles and responsibilities for those employees involved in managing fatigue (Management Action 01).

Comment [Office11]: TOL's method of formally communicating documents is via the XDMS system. Those that need access to safety management system documents do so in this way.

Recommendation 6 from TOL's audit of their FRMS identified that a full review of TOL's fatigue management arrangements is required. A draft copy of the revised SM0003 was evidenced as detailing roles and responsibilities for those employees involved in managing fatigue (See Management Action 01).

Comment [Office12]: SM0003 does not clarify roles and responsibilities in the style the auditor likes – roles and responsibilities are clearly identified at appropriate points in the document.

SM0003 has been reviewed and evidence to follow which clears up the 2 year review and the auditor is saying he did evidence the new SM0003 draft, can we review recommendation to be clearer on the action required or put this as an observation of work in progress

=====

1.2 Fatigue Preventative and Protective Measures

ORR's guidance – Managing Rail Staff Fatigue - Section 6.53 - states that controllers of safety critical work should be aware of factors affecting the onset of fatigue and reduce these as far as is reasonably practicable.

TOL's fatigue control measures are based on TOL's standards and limits on working hours, breaks, shift exchanges and exceedances (referred to as breaches by TOL). These are recorded in SM0003. Recommendation 1 from TOL's audit of their FRMS identified that those responsible for making shift exchanges should consider fatigue implications in addition to checking compliance with TOL's standards and limits. ORR's Good Practice Guidelines – Fatigue Factors, states that fatigue factors, in addition to numerical limits, should be considered in the management of changes to driver's hours of work, including shift exchanges (**Management Action 04**).

TOL's standards and limits are communicated as follows:

- Lesson Plan TLP 0005 – Drivers' Hours - this lesson plan is delivered as part of the driver's basic training.

Comment [Office13]: The ORR guidance lists 8 factors that are thought to contribute to staff fatigue; TOL can evidence consideration of these factors within their FRMS design.

Review of recommendation possibly reword to ask TOL for the evidence that can be provided by TOL

=====

=====

Recommendation 7 from TOL's audit of their FRMS identified that an assessment of staff that regularly work overtime should be made to determine if other control measures should be implemented to safeguard against fatigue. TOL should also consider analysing other data available from monitoring for fatigue implications. This analysis should also be used to review and update the FRMS (**Management Action 06**).

Comment [Office14]: TOL use other data sources to monitor the effectiveness of the FRMS – an example of this is investigating whether fatigue is an underlying cause of safety and operational incidents. Causation is discussed at monthly safety management forums and an appropriate course of action agreed with the HOS.

Compliance to TOL's working hours standards and limits is measured as a Key Performance Indicator (KPI). This is reported to the Management Safety Meeting. A review is carried out of randomly selected time sheets for compliance to TOL's standards and limits (see section 3.5 of this report).

2.0 Education and Training

2.1 Basic Fatigue Awareness

What was the outcome of the TOL audit and the rec could ask for evidence of other data that has been used.

Is the additional data used by TOL used to update FRMS, if not amend rec is so then evidence closes rec

=====

Formal refresher training is not in place. Refreshment of the fatigue management arrangements is provided by briefings given to remind drivers of the fatigue management arrangements and their responsibilities (as evidenced in section 1.2 of this report).

Comment [Office15]: All tram drivers undertake formal competence assessment at biennial intervals – fitness for duty and the factors that influence this are discussed and documented as part of this recertification process.

The CMS process normally carried an element of annual driver refresher however that's not what's stated in your comments box. The competence assessment process is carried out as observations of performance. Is there a period of "Classroom training giving to drivers on a periodic basis? If so there will be a course syllabus showing Fatigue mgt and a CMS record

=====

2.2 Fatigue Training for Management and Supervisors

ORR's guidance – Managing Rail Staff Fatigue - Section 5.39 – states that where people have responsibilities for managing fatigue, there should be adequate competence management arrangements in place to ensure that they acquire and retain the appropriate fatigue knowledge and skills. This will be particularly important for supervisors and managers of staff carrying out safety critical work, and staff who devise and amend rosters. ORR's guidance – Managing Rail Staff Fatigue - Section 5.65 – also states that basic awareness of how to recognise fatigue in others is especially important for staff responsible for carrying out fitness for duty checks and for those responsible for ensuring staff remain fit for duty throughout their shifts.

Recommendations 1 and 2 from TOL's audit of their own FRMS identified that not all employees have sufficient knowledge of the factors that increase fatigue (specifically those carrying out briefings and checking compliance when shifts are exchanged). [TOL should review their fatigue awareness training for managers and supervisors to ensure it includes factors that increase fatigue and how to recognise fatigue in others (**Management Action 05**)].

2.3 Training in Roster Design

ORR's guidance – Managing Rail Staff Fatigue - Section 6.17 – states that it is vital that staff who devise working patterns receive training in roster design and the implications for fatigue. [It could not be evidenced that TOL's roster designer had received training in minimising fatigue in roster design (**See Management Action 05**)].

3.0 Fatigue Risk Assessment and Managing the Risks

ORR's guidance – Managing Rail Staff Fatigue - Stage 2 – states that controllers of safety critical work should identify, set and adhere to appropriate standards for working hours and working patterns, observing any relevant working time limits that apply. The standards and limits set should take into account recognised national industry good practice guidance applying to

Comment [Office16]: All managers and supervisors have been briefed on the factors that are thought to cause fatigue. Evidence to that effect was provided to and acknowledged by the auditor. Those responsible for system design and operation are familiar with the ORR guidance – evidence to this effect was also acknowledged by the auditor at the time of audit.

Comment [Office17]: TOL's roster designer was trained by TfL in 1989 and has some 28 years experience in the role. A recent TfL audit of TOL scheduling practices have confirmed there are no areas of concern and that the roster is efficient and suitable for controlling fatigue.

The auditor is only asking for a review which gives TOL the ability to answer this in full by a recommendation, there is an area of difference between the auditor and TOL one is referring to training and the other is referring to briefing. The ORR is only interested in

they acquire and retain the appropriate fatigue knowledge and skills. This will be particularly important for supervisors and managers of staff carrying out safety critical work, and staff who devise and amend rosters. ORR's guidance

=====

3.1 Standards and Limits

[TOL's standards and limits for working hours] were evidenced as considering:

- ORR's guidance – Managing Rail Staff Fatigue Section 6.20 – detailing the criteria to which numerical limits should be applied.
- Limiting overtime with respect to not exceeding the maximum permitted hours without authorisation.

Comment [Office18]: TOL's standards and limits for working hours are more stringent than those identified as being acceptable within bus and rail.

Noted and probably a discussion point for our next meeting.

=====

Potential fatigue due to variances, shift exchanges and overtime is controlled with respect to TOL's standards and limits. [The Control Room staff are not trained in recognising other fatigue causal factors or fatigue in others (See Management Action 05). [The process by which the Controllers (located within the Control Room) manage variances and exceedances is not documented.] This is being reviewed as part of TOL's full review of their FRMS (Management Action 07). The duty Control Room Manager was interviewed to evidence that the controls relating to TOL's standards and limits are understood and actioned as follows:

- Overtime is checked to be within TOL's standards and limits and recorded on the overtime sheet. Any variances leading to the need for overtime are recorded on the variance sheet.

Comment [Office19]: All control room staff have been briefed on fatigue and the factors that bring on it's onset.

Comment [Office20]: The auditor discussed how fatigue would be managed with controllers during the audit and confirmed he was satisfied that these staff members understand their responsibilities for managing fatigue. This can be clearly evidenced in the comments made by the auditor below.

The auditor requests a review of training (training request for control room staff) where TOL state briefings are in place

Discussion point Understanding Vs documented audit trail

=====

From: Powell Danny Head of Line Operations C&H and District Lines
Sent: 30 August 2017 10:50
To: 'Andrew Wallace'
Cc: Shirbon Mike
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Items from your letter to Rory 22nd August (Ref:AW220817.let)

EXECUTIVE SUMMARY

All the scope areas were examined during the audit.

This audit provides assurance against TOL's own standards and identifies areas for potential improvement based on ORR guidance.

Areas of Effective Control

We identified the following areas of effective control with regard to TOL's own FRMS:

- TOL's standards and limits on working hours have been effectively communicated;
- Variances in hours worked including overtime, exceedances and shift exchanges are being managed in compliance with TOL's standards and limits;
- Employee consultation has taken place on roster changes; and
- When booking on, drivers are checked by Control Room staff for signs of fatigue, including effects from prescription and over the counter medications.]

Comment [Office1]: There are further examples of effective control and good practice within the report – TOL believe these should be reflected in the executive summary.

Above should be noted

=====

1 SM0003: Safety Critical Employees – Management of Fatigue

- 1.1 TOL's revised procedure has been reviewed by the Auditor and addresses the points raised. If this is no longer the position, please specify those issues you consider to be outstanding.

Can you send me a copy of SM0003 as shown to the auditor.

=====

SM0003 – Safety Critical Employees – Management of Fatigue - details TOL's Fatigue Risk Management System. SM0003 is available via TOL's electronic document control system (XDMS). [It is not formally communicated.] QP0005 – Document Control - Clause 4.1.3 – states that, as a minimum, documents shall be reviewed every two years. SM0003 was last reviewed in June 2014. SM0003 does not clearly detail the roles and responsibilities for those employees involved in managing fatigue (Management Action 01).

Comment [Office11]: TOL's method of formally communicating documents is via the XDMS system. Those that need access to safety management system documents do so in this way.

Recommendation 6 from TOL's audit of their FRMS identified that a full review of TOL's fatigue management arrangements is required. A draft copy of the revised SM0003 was evidenced as detailing roles and responsibilities for those employees involved in managing fatigue (See Management Action 01).

Comment [Office12]: SM0003 does not clarify roles and responsibilities in the style the auditor likes – roles and responsibilities are clearly identified at appropriate points in the document.

SM0003 has been reviewed and evidence to follow which clears up the 2 year review and the auditor is saying he did evidence the new SM0003 draft, can we review recommendation to be clearer on the action required or put this as an observation of work in progress

=====

1.2 Fatigue Preventative and Protective Measures

ORR's guidance – Managing Rail Staff Fatigue - Section 6.53 - states that controllers of safety critical work should be aware of factors affecting the onset of fatigue and reduce these as far as is reasonably practicable.

TOL's fatigue control measures are based on TOL's standards and limits on working hours, breaks, shift exchanges and exceedances (referred to as breaches by TOL). These are recorded in SM0003. Recommendation 1 from TOL's audit of their FRMS identified that those responsible for making shift exchanges should consider fatigue implications in addition to checking compliance with TOL's standards and limits. ORR's Good Practice Guidelines – Fatigue Factors, states that fatigue factors, in addition to numerical limits, should be considered in the management of changes to driver's hours of work, including shift exchanges (**Management Action 04**).

TOL's standards and limits are communicated as follows:

- Lesson Plan TLP 0005 – Drivers' Hours - this lesson plan is delivered as part of the driver's basic training.

Comment [Office13]: The ORR guidance lists 8 factors that are thought to contribute to staff fatigue; TOL can evidence consideration of these factors within their FRMS design.

Review of recommendation possibly reword to ask TOL for the evidence that can be provided by TOL

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Recommendation 7 from TOL's audit of their FRMS identified that an assessment of staff that regularly work overtime should be made to determine if other control measures should be implemented to safeguard against fatigue. TOL should also consider analysing other data available from monitoring for fatigue implications. This analysis should also be used to review and update the FRMS (**Management Action 06**).

Comment [Office14]: TOL use other data sources to monitor the effectiveness of the FRMS – an example of this is investigating whether fatigue is an underlying cause of safety and operational incidents. Causation is discussed at monthly safety management forums and an appropriate course of action agreed with the HOS.

Compliance to TOL's working hours standards and limits is measured as a Key Performance Indicator (KPI). This is reported to the Management Safety Meeting. A review is carried out of randomly selected time sheets for compliance to TOL's standards and limits (see section 3.5 of this report).

2.0 Education and Training

2.1 Basic Fatigue Awareness

What was the outcome of the TOL audit and the rec could ask for evidence of other data that has been used.

Is the additional data used by TOL used to update FRMS, if not amend rec is so then evidence closes rec

=====

Formal refresher training is not in place. Refreshment of the fatigue management arrangements is provided by briefings given to remind drivers of the fatigue management arrangements and their responsibilities (as evidenced in section 1.2 of this report).

Comment [Office15]: All tram drivers undertake formal competence assessment at biennial intervals – fitness for duty and the factors that influence this are discussed and documented as part of this recertification process.

The CMS process normally carried an element of annual driver refresher however that's not what's stated in your comments box. The competence assessment process is carried out as observations of performance. Is there a period of "Classroom training giving to drivers on a periodic basis? If so there will be a course syllabus showing Fatigue mgt and a CMS record

=====

2.2 Fatigue Training for Management and Supervisors

ORR's guidance – Managing Rail Staff Fatigue - Section 5.39 – states that where people have responsibilities for managing fatigue, there should be adequate competence management arrangements in place to ensure that they acquire and retain the appropriate fatigue knowledge and skills. This will be particularly important for supervisors and managers of staff carrying out safety critical work, and staff who devise and amend rosters. ORR's guidance – Managing Rail Staff Fatigue - Section 5.65 – also states that basic awareness of how to recognise fatigue in others is especially important for staff responsible for carrying out fitness for duty checks and for those responsible for ensuring staff remain fit for duty throughout their shifts.

Recommendations 1 and 2 from TOL's audit of their own FRMS identified that not all employees have sufficient knowledge of the factors that increase fatigue (specifically those carrying out briefings and checking compliance when shifts are exchanged). [TOL should review their fatigue awareness training for managers and supervisors to ensure it includes factors that increase fatigue and how to recognise fatigue in others (**Management Action 05**)].

2.3 Training in Roster Design

ORR's guidance – Managing Rail Staff Fatigue - Section 6.17 – states that it is vital that staff who devise working patterns receive training in roster design and the implications for fatigue. [It could not be evidenced that TOL's roster designer had received training in minimising fatigue in roster design (**See Management Action 05**)].

3.0 Fatigue Risk Assessment and Managing the Risks

ORR's guidance – Managing Rail Staff Fatigue - Stage 2 – states that controllers of safety critical work should identify, set and adhere to appropriate standards for working hours and working patterns, observing any relevant working time limits that apply. The standards and limits set should take into account recognised national industry good practice guidance applying to

Comment [Office16]: All managers and supervisors have been briefed on the factors that are thought to cause fatigue. Evidence to that effect was provided to and acknowledged by the auditor. Those responsible for system design and operation are familiar with the ORR guidance – evidence to this effect was also acknowledged by the auditor at the time of audit.

Comment [Office17]: TOL's roster designer was trained by TfL in 1989 and has some 28 years experience in the role. A recent TfL audit of TOL scheduling practices have confirmed there are no areas of concern and that the roster is efficient and suitable for controlling fatigue.

The auditor is only asking for a review which gives TOL the ability to answer this in full by a recommendation, there is an area of difference between the auditor and TOL one is referring to training and the other is referring to briefing. The ORR is only interested in

they acquire and retain the appropriate fatigue knowledge and skills. This will be particularly important for supervisors and managers of staff carrying out safety critical work, and staff who devise and amend rosters. ORR's guidance

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3.1 Standards and Limits

[TOL's standards and limits for working hours] were evidenced as considering:

- ORR's guidance – Managing Rail Staff Fatigue Section 6.20 – detailing the criteria to which numerical limits should be applied.
- Limiting overtime with respect to not exceeding the maximum permitted hours without authorisation.

Comment [Office18]: TOL's standards and limits for working hours are more stringent than those identified as being acceptable within bus and rail.

Noted and probably a discussion point for our next meeting.

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Potential fatigue due to variances, shift exchanges and overtime is controlled with respect to TOL's standards and limits. [The Control Room staff are not trained in recognising other fatigue causal factors or fatigue in others (See Management Action 05). [The process by which the Controllers (located within the Control Room) manage variances and exceedances is not documented.] This is being reviewed as part of TOL's full review of their FRMS (Management Action 07). The duty Control Room Manager was interviewed to evidence that the controls relating to TOL's standards and limits are understood and actioned as follows:

- Overtime is checked to be within TOL's standards and limits and recorded on the overtime sheet. Any variances leading to the need for overtime are recorded on the variance sheet.

Comment [Office19]: All control room staff have been briefed on fatigue and the factors that bring on it's onset.

Comment [Office20]: The auditor discussed how fatigue would be managed with controllers during the audit and confirmed he was satisfied that these staff members understand their responsibilities for managing fatigue. This can be clearly evidenced in the comments made by the auditor below.

The auditor requests a review of training (training request for control room staff) where TOL state briefings are in place

Discussion point Understanding Vs documented audit trail

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3.3 Provision of Breaks

ORR's guidance – Managing Rail Staff Fatigue - Section 6.57 – states that controllers of safety critical work should make arrangements for workers to take breaks during periods of duty.

Drivers' breaks are set within the timetabling. This was evidenced on the Duty Cards which detail the timetabling, and associated rest periods, for the routes driven within the roster. Where breaks do not take place at the designated time, or are reduced in length, the Control Room will make mutually agreed adjustments to accommodate additional break time elsewhere in the shift. This is not documented. Section 10 of TOL's audit of their FRMS recommends that guidelines on driver breaks are devised and agreed (**See Management Action 07**). SM0003 Clause 10 – Provision of Breaks – details the length and frequency of breaks. [The number of occurrences where this clause is not met is not monitored or analysed (**See Management Action 06**).

Comment [Office21]: The reason this is not monitored is because system design prevents it.

3.4 Roster Design

Should a system be devised to capture this requirement / data and be presented as part answer to rec 6

=====

3.3 Provision of Breaks

ORR's guidance – Managing Rail Staff Fatigue - Section 6.57 – states that controllers of safety critical work should make arrangements for workers to take breaks during periods of duty.

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Comment [Office21]: The reason this is not monitored is because system design prevents it.

3.4 Roster Design

Should a system be devised to capture this requirement / data and be presented as part answer to rec 6

=====

3.4 Roster Design

ORR's guidance – Managing Rail Staff Fatigue - Appendix A – states that working patterns should be designed to incorporate good fatigue management principles and recommends that an assessment is carried out on the proposed pattern using a fatigue assessment tool. TOL's base rosters established in 2016 were evidenced as being analysed using the HSE Fatigue and Risk Index tool. Section 8 of TOL's audit of their own FRMS identified that rosters are assessed using the HSE Fatigue Index but no formal risk assessment of the roster had been carried out for factors that exacerbate fatigue. ORR's Good practice guidelines – Fatigue Factors, and industry good

this is not mentioned because system design prevents it.

TfL RESTRICTED

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Fatigue Management in Tram Operations Limited - TOL (IA 17 780)

practice, should be considered in addition to applying the HSE Fatigue Risk Index Tool to the roster design (**Management Action 03**).

3.5 Time Sheet Review

SM0003 - Clause 13 – states that time sheets will be randomly selected to review for compliance to the standards and limits on a periodic basis. This is

Comment [Office22]: See previous comment on roster design – although not formally documented in a risk assessment all of the fatigue factors in ORR's good practice guide can be evidenced in the roster design.

Observation in Duty Schedules have visited TOL and reviewed current rosters

Future work to risk assess?

=====
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3.6 Managing the Fatigue Risk of Actual Hours Worked

The recording of actual hours worked, and the controlling of variances and exceedances, is detailed in sections 1.4 and 3.2 of this report. The actual hours worked are controlled with respect to TOL's standards and limits, other fatigue factors are not considered. (A sample of actual hours worked, including variances, is not evaluated using a fatigue risk tool (**Management Action 02**)).

Comment [Office23]: There is no requirement to do so – evidence has been provided that variances in working hours are checked and well managed by other means.

3.7 Consideration of Travelling Time in Fatigue Management

ORR's guidance – Managing Rail Staff Fatigue - Section 8.7 – states that

Discussion point

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3.7 Consideration of Travelling Time in Fatigue Management

ORR's guidance – Managing Rail Staff Fatigue - Section 8.7 – states that fatigue management systems should include arrangements for assessing and controlling risks from travel time.

Driver travel time is considered in the recruitment process by recruiting drivers who live within a 1 hour commute of the depot. [This ensures that if a maximum allowable 12 hour shift is worked, combined with 2 hours travelling to and from work, a 10 hour rest period is achieved.]

Drivers are required to notify TOL of any changes of address, this requirement is included in ALO 0030 – New Employee Induction Checklist. [The nature and duration of changes to a driver's travel time is not fatigue risk assessed (See Management Action 02).]

3.8 Managing Changes to Employees Circumstances

ORR's guidance – Managing Rail Staff Fatigue - Section 6.77 – states that safety critical workers should be made aware of the procedures to be followed if they consider that there are circumstances, such as significant life events or medical conditions, which may cause them to either be or become so fatigued that health and safety could be significantly affected.

requirement to do so – evidence has been provided that variances in working hours are checked and well managed by other means.

Comment [Office24]: This assumes a minimum turn around time of 12 hours – TOL rosters provide a planned minimum turnaround time of 16 hours giving at least 14 hours rest after travelling time is taken into account.

Comment [Office25]: It was explained to the auditor that on notification of a change of address, the individual's line manager would have a discussion with the individual as part of normal good management practice, this discussion would cover travelling time and any necessary reasonable adjustments – evidence to support this claim is available to the auditor if required.

Good practice of 14 hours rest
Rec 2 looks at driver education

Reporting changes to employee circumstances, with the exception of home address, is not included in ALO 0030 – New Employee Induction Checklist, or TFM 0011 - Safety Responsibility Statement. [There is no documented process for drivers to report changes in circumstances (**See Management Action 07**) or for those changes to be fatigue risk assessed (**See Management Action 02**).

3.9 Managing the Risk of Fatigue when booking on and off Shifts

ORR's guidance – Managing Rail Staff Fatigue - Sections 5.64 and 5.65 – state that companies should have fitness for duty checking arrangements to ensure that staff reporting for safety critical work are not suffering, or likely to suffer during their shift, from fatigue. This checking should be carried out face to face by staff with awareness in recognising fatigue.

The requirement for employees not to book on if fatigued is included in the driver induction and Lesson Plan 5 of their training. This requirement was

Comment [Office26]: TOL operate a supervised booking on procedure whereby the fitness and welfare of every driver is established before undertaking safety critical work, all employees have the opportunity to discuss welfare issues with their manager either informally when booking on for duty or formally at a pre-arranged meeting if required. TOL also provide access to 2 confidential support services for employees that feel they are not adequately supported through normal channels.

The auditor looks for documentation where TOL explain that they are good in this area.

Discussion on documentation availability / training

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3.9 Managing the Risk of Fatigue when booking on and off Shifts

ORR's guidance – Managing Rail Staff Fatigue - Sections 5.64 and 5.65 – state that companies should have fitness for duty checking arrangements to ensure that staff reporting for safety critical work are not suffering, or likely to suffer during their shift, from fatigue. This checking should be carried out face to face by staff with awareness in recognising fatigue.

The requirement for employees not to book on if fatigued is included in the driver induction and Lesson Plan 5 of their training. This requirement was also included in the briefing – Safety Critical Work, Fatigue – dated 8 December 2016, see section 1.2 of this report.

Drivers sign on at the Control Room where the controllers monitor their fitness for work including fatigue. [The controllers are not trained in recognising the symptoms of fatigue (See Management Action 05).]

Control Room staff were interviewed to determine what they would do if a driver appeared unfit for work. It was stated that they would firstly speak to the driver, and if deemed unfit to work they would be signed off as sick, sent home and their roster re-assigned. [This process, including review of the reasons for fatigue, how to manage the individual, escalation (if necessary) and ensuring the safety of the individual in returning home is not documented (See Management Action 07).]

3.10 The use of Fatigue Risk Assessment Tools

ORR's guidance – Managing Rail Staff Fatigue - Section 5.32 – states that the FRMS should outline how fatigue risk assessments are to be carried out who

supervised booking on procedure whereby the fitness and welfare of every driver is established before undertaking safety critical work, all employees have the opportunity to discuss welfare issues with their manager either informally when booking on for duty or formally at a pre-arranged meeting if required. TOL also provide access to 2 confidential support services for employees that feel they are not adequately supported through normal channels.

Comment [Office27]: All controllers have been briefed on fatigue as previously stated and acknowledged by the auditor.

Comment [Office28]: The process is well understood by those that use it, evidence to that effect was gathered by the auditor through interview and confirmed to be sufficient at the time of audit.

The auditor looks towards training where TOL look at briefing
The auditor looks towards documentation where TOL look towards a good understanding

Discussion point

=====

TOL has no formal process for determining when a fatigue risk analysis should be carried out. For example FOM 003 – Unauthorised SPAS Event Report - was evidenced as confirming if the working limits had been exceeded but does not consider any other fatigue risk factors. **(See Management Action 02).**

Comment [Office29]: TOL's investigation procedure requires the investigator to identify root causation and where appropriate make recommendations for improvement.

Drivers on late shifts are allocated to tram preparation duties for the later part of their shift. For this reason TOL does not consider drivers working late shifts, either permanently or on rotation, should be considered as night workers and therefore subject to fatigue risk assessment. For comparison purposes LU considers any driver completing 3 rostered hours between 11pm and 6am on a regular basis to be classified as night workers. Working Time Regulations and industry good practice should be reviewed to determine if

late shift workers, particularly those on permanent late shifts, should be classified as night shift workers **(Management Action 08).**

3.11 Fatigue Related Medical Fitness for Work

ORR's guidance – Managing Rail Staff Fatigue - Section 6.6 – states that Regulation 24(1) (a) of ROGS requires controllers of safety critical work to ensure that people carrying out such work have been assessed as fit for that work, and Regulation 24(1) (d) requires them to have in place arrangements for monitoring the ongoing fitness of such staff. These fitness assessments and monitoring arrangements should take potential risks from fatigue into

Comment [Office30]: TOL have reviewed their rosters against Working Time Regulations and believe that their drivers are not night workers. This was explained during the audit. The train preparation example referred to in the report was not introduced to avoid night working, it was a proactive measure taken by the company to manage fatigue risk to drivers following consultation with staff safety representatives.

Should there be a more formal way of highlighting when a Fatigue Risk Analysis should be carried out

Working time regs have been reviewed so this partly answers the mgt action

=====

SM0008 – Fitness Standards (Safety Critical Work) - Clause 3.2 - defines the frequency at which in-service medicals, following the initial medical, are carried out. SM0008 - Appendix A – Medical Standards – details minimum medical fitness requirements for drivers including checks for alerted levels of consciousness and that those drivers with sleep apnea are deemed unfit for duty until treatment is successful. Medicals are completed by Maitland Medical Services.

Late shift drivers, particularly permanent late shift drivers, are not considered by TOL as night shift workers and therefore not subject to a medical appropriate for night shift workers (See Management Action 08).

ALO0030 – New Employee Induction Checklist – includes reporting the use of prescription and over the counter medicines to the company. Control Room staff were interviewed to determine what they would do if a driver reports they are taking medication. It was stated that the medication is checked against a permitted medications list issued by Maitland Medical Services. If the medication is not on the permitted list the driver is either told not to take the medication or stood down. If a driver is stood down Maitland Medical Services are e-mailed with details of the medication to determine if the driver is fit for duty. [The procedure for reporting medications, and the subsequent actions, is not documented (See Management Action 07)].

Comment [Office31]: TOL have reviewed their rosters against Working Time Regulations and believe that these drivers are not night workers.

Comment [Office32]: The procedure is documented however the procedure could not be located at the time of audit as it was being amended – practical application of the process was discussed with controllers at the time of audit and agreed by the auditor as being embedded and well understood.

4.0 Fatigue Reporting

4.1 Process for Staff to Report Fatigue Related Issues

ORR's guidance – Managing Rail Staff Fatigue - Sections 5.38 and 5.75 – states that there should be open, easy to use channels of communication for

Both points are part answers to the recs
Procedure now available and Working Time regs reviewed

TOL's completion of the FRMS checklist in Appendix F of the ORR guidance recognised that employees use more informal routes to report fatigue issues, for example talking to their manager. [The procedure for recording and managing these reports is not documented (See Management Action 07).]

5.0 Physical Environment

TOL advised that TfL provide the rolling stock and as such they consider the design of the cab, and its associated impact on fatigue risk, to be TfL's responsibility in the first instance. HSE document HSG48 - Reducing Error and Influencing Behaviour - refers to the combined effect of the individual,

Comment [Office33]: Verbal concerns raised by staff to managers are dealt with at the lowest possible level in the first instance – usually resulting in a safety conversation between the individuals concerned. Records of such reports (pre-dating the audit) are available within staff personal files, these can be made available for examination by the auditor.

In my experience there will always be the staff member who chooses the informal route to report, is there a formal route process that is documented
Yes please for evidence of previous reports

=====

QP 0005 – Document Control - Clause 4.1.3 - states that TOL documentation shall be reviewed every 2 years or earlier if part of an incident investigation. The last recorded review of SM0003 was in June 2014. [SM0003 does not include a statement to undertake a review of the FRMS when the effectiveness of the arrangements is in doubt (See Management Action 01).]

TOL Integrated Audit Schedule 2017 - was evidenced as including an audit of TOL's Safety Management System. Items to be covered in this audit are based on TOL's Risk Profile and discussions with the Head of Safety. This was evidenced as including compliance to ROGS.

Comment [Office35]: The FRMS is based on the principle that foreseeable risk is designed out before work that may result in an individual becoming fatigued is undertaken – control is established through regular system of monitoring and review with appropriate management action taken to manage risk to an acceptable level. TOL believe that the nature of the controls already embedded in the system are proportionate and well managed.

SM0003 now updated (when will it be released?) and should it reflect a time frame of minimum FRMS review

=====

APPENDIX 1: MANAGEMENT ACTIONS


Ref.	Description	Report Paragraph	Management Action	Comments moving forward
01	SM 0003 – Safety Critical Employees – Management of Fatigue - does not clearly detail the roles and responsibilities for those employees involved in managing fatigue, or include a statement to undertake a review of the FRMS when the effectiveness of the arrangements is in doubt.	1.1 6.0	These requirements should be included in the revised SM 0003 being developed as part of TOL's full review of its Fatigue Risk Management System.	
02	TOL has no formal process for determining when a fatigue risk analysis should be carried out including: <ul style="list-style-type: none"> • Post Incident. • Sampling actual hours worked. • Risk assessing changes to travel time. • Risk assessing changes to driver's circumstances. 	3.6 3.7 3.8 3.10	TOL's FRMS should outline how fatigue risk assessments are to be carried out, who should carry them out, and under what circumstances they should be completed.	
03	ORR's Good practice guidelines – Fatigue Factors, and industry good practice, are not considered in addition to applying the HSE Fatigue Risk Index Tool to the roster design.	3.4	ORR's Good practice guidelines – Fatigue Factors, and industry good practice - should be considered in the roster design.	
04	TOL's fatigue control measures set limits on working hours, breaks, shift exchanges and exceedances. ORR's Good practice guidelines – Fatigue Factors, in addition to numerical limits, are not considered in the management of changes to driver's hours of work, including shift exchanges.	1.2	ORR's Good practice guidelines – Fatigue Factors, in addition to numerical limits, should be considered in the management of changes to driver's hours of work, including shift exchanges.	
05	TOL's fatigue awareness training does not include: <ul style="list-style-type: none"> • Personal assessment of fatigue risk. • Training for management and supervision on the factors that increase fatigue. • Training for Control Room staff in recognising fatigue in drivers when booking on. • Training in minimising fatigue in the roster design. 	2.2 2.3 3.2 3.9	TOL's training should be reviewed to ensure that drivers are competent in recognising fatigue risk in themselves, and that those responsible for authorising overtime, exceedances and shift exchanges are competent in recognising fatigue risk in others. Training should be provided in minimising fatigue in the roster design.	

06	<p>Data available from monitoring, for example overtime and exceedances, is not analysed, communicated, trended or used to review and update the FRMS.</p> <p>The number of occasions where breaks are moved or not taken is not monitored.</p>	<p>1.4</p> <p>3.3</p>	<p>The process to ensure data from monitoring, and other sources, is used to review and update the FRMS should be considered.</p>	
07	<p>The following procedures are not formally documented:</p> <ul style="list-style-type: none"> • The Control Room's management of variances, exceedances and changes to breaks. • Reporting driver's changes in circumstances. • The process when drivers are deemed unfit for work due to fatigue. • The procedure for reporting medications, and the subsequent actions. <p>The procedure for recording and managing fatigue reporting by staff.</p>	<p>3.2</p> <p>3.3</p> <p>3.8</p> <p>3.9</p> <p>3.11</p> <p>4.1</p>	<p>TOL's FRMS should be reviewed to ensure that the processes for managing and reporting fatigue are documented. The procedure for reporting medications, and the subsequent actions should be documented.</p>	
08	<p>For fatigue risk assessment, and medical fitness for work purposes, TOL does not consider late shift workers, particularly those on permanent late shifts, to be night workers.</p>	<p>3.10</p> <p>3.11</p>	<p>Working Time Regulations and industry good practice should be considered to determine if late shift workers, particularly those on permanent late shifts, should be classified as night shift workers.</p>	
09	<p>TOL does not fatigue risk assess the driving environment as they consider the design of the cab, and its associated impact on fatigue risk, to be TfL's responsibility.</p>	<p>5.0</p>	<p>The arrangements for including the design of the cab, and its associated impact on fatigue risk, within the FRMS should be formalised.</p>	

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From: Shirbon Mike
Sent: 08 September 2017 14:51
To: 'Andrew Wallace'
Subject: RE: TfL Audit of TOL Fatigue Risk Management System

Sensitivity: Confidential

Hello Andy,

We have an internal peer review / sign off process that will probably take a week.

Regards,

Mike

Mike Shirbon
Audit Manager - HSE & Technical
TfL Internal Audit
8th Floor, Windsor House, 42-50 Victoria Street, SW1H 0TL

-----Original Message-----

From: Andrew Wallace [mailto:]
Sent: 07 September 2017 18:29
To: Shirbon Mike
Subject: TfL Audit of TOL Fatigue Risk Management System
Importance: High
Sensitivity: Confidential

Hi Mike

Please can you confirm what timescale the TfL Audit Team are working to for issue of your audit report.

Many thanks

Andy Wallace
Head of Safety
Tram Operations Limited
Registered England & Wales No: 097532
Tramlink Depot
Coomber Way
Croydon
CRO 4TQ

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From: Powell Danny Head of Line Operations C&H and District Lines
Sent: 30 August 2017 10:57
To: 'Andrew Wallace'; Shirbon Mike
Subject: RE: Management of Fatigue in Tram Operations Limited (TOL) - Draft Review

Andy / mike

How does the diary look for a meeting Tuesday 5th September in the morning at Knollys Hse?

Regards

Danny

From: Danny Powell (Performance Manager Trains, Northern Line)
Sent: 30 August 2017 10:27
To: 'Andrew Wallace'
Cc: Shirbon Mike
Subject: Management of Fatigue in Tram Operations Limited (TOL) - Draft Review

Andy

Thank you for meeting up last week to discuss your / TOL concerns over the recent "Fatigue Audit"

We had a full and frank discussion around the audit report and how to get the report concluded with all parties content with the outcome.

We are now clear that the report reflects the responses given to the auditors during their visit.

- If there are areas that are factually incorrect then they should be raised (I will look through the email you sent Rory O'Neill and address each issue. I will ask for further evidence if required, and thank you for giving me direct access to Ray Hayter)
- TOL have a concern that the report does not recognise any area of good work they are doing in Fatigue Mgt (unbalances the report)
- Recommendations Vs Observations for example SM0003 (TOL Fatigue Mgt Std) has been re written and was shown to the auditor, however a recommendation was given to review SM0003
- Where there is a clear gap in processes or procedures then a recommendation should remain in place
- Further improvements pending: TOL have stated they are doing a lot of work with independent "Fatigue experts" to look at all areas of their operation and would like this recognised

The above I intend to use of a terms of reference to work with you to "Flush out" all the issues, I then plan for Mike Shirbon, you and myself to sit down and agree the way forward to finalise the report

Hope this is a fair reflection on how we agreed to move forward.

Items from your letter to Rory 22nd August (Ref:AW220817.let)

EXECUTIVE SUMMARY

All the scope areas were examined during the audit.

This audit provides assurance against TOL's own standards and identifies areas for potential improvement based on ORR guidance.

Areas of Effective Control

We identified the following areas of effective control with regard to TOL's own FRMS:

- TOL's standards and limits on working hours have been effectively communicated;
- Variances in hours worked including overtime, exceedances and shift exchanges are being managed in compliance with TOL's standards and limits;
- Employee consultation has taken place on roster changes; and
- When booking on, drivers are checked by Control Room staff for signs of fatigue, including effects from prescription and over the counter medications.]

Comment [Office1]: There are further examples of effective control and good practice within the report – TOL believe these should be reflected in the executive summary.

Above should be noted

1 **SM0003: Safety Critical Employees – Management of Fatigue**

1.1 TOL's revised procedure has been reviewed by the Auditor and addresses the points raised. If this is no longer the position, please specify those issues you consider to be outstanding.

Can you send me a copy of SM0003 as shown to the auditor.

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SM0003 – Safety Critical Employees – Management of Fatigue - details TOL's Fatigue Risk Management System. SM0003 is available via TOL's electronic document control system (XDMS). It is not formally communicated. QP0005 – Document Control - Clause 4.1.3 – states that, as a minimum, documents shall be reviewed every two years. SM0003 was last reviewed in June 2014. SM0003 does not clearly detail the roles and responsibilities for those employees involved in managing fatigue (**Management Action 01**).

Recommendation 6 from TOL's audit of their FRMS identified that a full review of TOL's fatigue management arrangements is required. A draft copy of the revised SM0003 was evidenced as detailing roles and responsibilities for those employees involved in managing fatigue (**See Management Action 01**).

Comment [Office11]: TOL's method of formally communicating documents is via the XDMS system. Those that need access to safety management system documents do so in this way.

Comment [Office12]: SM0003 does not clarify roles and responsibilities in the style the auditor likes – roles and responsibilities are clearly identified at appropriate points in the document.

SM0003 has been reviewed and evidence to follow which clears up the 2 year review and the auditor is saying he did evidence the new SM0003 draft, can we review recommendation to be clearer on the action required or put this as an observation of work in progress

=====

1.2 Fatigue Preventative and Protective Measures

ORR's guidance – Managing Rail Staff Fatigue - Section 6.53 - states that controllers of safety critical work should be aware of factors affecting the onset of fatigue and reduce these as far as is reasonably practicable.

TOL's fatigue control measures are based on TOL's standards and limits on working hours, breaks, shift exchanges and exceedances (referred to as breaches by TOL). These are recorded in SM0003. Recommendation 1 from TOL's audit of their FRMS identified that those responsible for making shift exchanges should consider fatigue implications in addition to checking compliance with TOL's standards and limits. ORR's Good Practice Guidelines – Fatigue Factors, states that fatigue factors, in addition to numerical limits, should be considered in the management of changes to driver's hours of work, including shift exchanges (**Management Action 04**).

TOL's standards and limits are communicated as follows:

- Lesson Plan TLP 0005 – Drivers' Hours - this lesson plan is delivered as part of the driver's basic training.

Comment [Office13]: The ORR guidance lists 8 factors that are thought to contribute to staff fatigue; TOL can evidence consideration of these factors within their FRMS design.

Review of recommendation possibly reword to ask TOL for the evidence that can be provided by TOL

Recommendation 7 from TOL's audit of their FRMS identified that an assessment of staff that regularly work overtime should be made to determine if other control measures should be implemented to safeguard against fatigue. TOL should also consider analysing other data available from monitoring for fatigue implications. This analysis should also be used to review and update the FRMS (Management Action 06).

Compliance to TOL's working hours standards and limits is measured as a Key Performance Indicator (KPI). This is reported to the Management Safety Meeting. A review is carried out of randomly selected time sheets for compliance to TOL's standards and limits (see section 3.5 of this report).

Comment [Office14]: TOL use other data sources to monitor the effectiveness of the FRMS – an example of this is investigating whether fatigue is an underlying cause of safety and operational incidents. Causation is discussed at monthly safety management forums and an appropriate course of action agreed with the HOS.

2.0 Education and Training

2.1 Basic Fatigue Awareness

What was the outcome of the TOL audit and the rec could ask for evidence of other data that has been used.

Is the additional data used by TOL used to update FRMS, if not amend rec is so then evidence closes rec

=====

Formal refresher training is not in place. Refreshment of the fatigue management arrangements is provided by briefings given to remind drivers of the fatigue management arrangements and their responsibilities (as evidenced in section 1.2 of this report).

Comment [Office15]: All tram drivers undertake formal competence assessment at biennial intervals – fitness for duty and the factors that influence this are discussed and documented as part of this recertification process.

The CMS process normally carried an element of annual driver refresher however that's not what's stated in your comments box. The competence assessment process is carried out as observations of performance. Is there a period of "Classroom training giving to drivers on a periodic basis? If so there will be a course syllabus showing Fatigue mgt and a CMS record

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2.2 Fatigue Training for Management and Supervisors

ORR's guidance – Managing Rail Staff Fatigue - Section 5.39 – states that where people have responsibilities for managing fatigue, there should be adequate competence management arrangements in place to ensure that they acquire and retain the appropriate fatigue knowledge and skills. This will be particularly important for supervisors and managers of staff carrying out safety critical work, and staff who devise and amend rosters. ORR's guidance – Managing Rail Staff Fatigue - Section 5.65 – also states that basic awareness of how to recognise fatigue in others is especially important for staff responsible for carrying out fitness for duty checks and for those responsible for ensuring staff remain fit for duty throughout their shifts.

Recommendations 1 and 2 from TOL's audit of their own FRMS identified that not all employees have sufficient knowledge of the factors that increase fatigue (specifically those carrying out briefings and checking compliance when shifts are exchanged). TOL should review their fatigue awareness training for managers and supervisors to ensure it includes factors that increase fatigue and how to recognise fatigue in others (**Management Action 05**).

Comment [Office16]: All managers and supervisors have been briefed on the factors that are thought to cause fatigue. Evidence to that effect was provided to and acknowledged by the auditor. Those responsible for system design and operation are familiar with the ORR guidance – evidence to this effect was also acknowledged by the auditor at the time of audit.

2.3 Training in Roster Design

ORR's guidance – Managing Rail Staff Fatigue - Section 6.17 – states that it is vital that staff who devise working patterns receive training in roster design and the implications for fatigue. It could not be evidenced that TOL's roster designer had received training in minimising fatigue in roster design (**See Management Action 05**).

Comment [Office17]: TOL's roster designer was trained by TfL in 1989 and has some 28 years experience in the role. A recent TfL audit of TOL scheduling practices have confirmed there are no areas of concern and that the roster is efficient and suitable for controlling fatigue.

3.0 Fatigue Risk Assessment and Managing the Risks

ORR's guidance – Managing Rail Staff Fatigue - Stage 2 – states that controllers of safety critical work should identify, set and adhere to appropriate standards for working hours and working patterns, observing any relevant working time limits that apply. The standards and limits set should take into account recognised national industry good practice guidance applying to

The auditor is only asking for a review which gives TOL the ability to answer this in full by a recommendation, there is an area of difference between the auditor and TOL one is referring to training and the other is referring to briefing. The ORR is only interested in

they acquire and retain the appropriate fatigue knowledge and skills. This will be particularly important for supervisors and managers of staff carrying out safety critical work, and staff who devise and amend rosters. ORR's guidance

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3.1 Standards and Limits

TOL's standards and limits for working hours were evidenced as considering:

- ORR's guidance – Managing Rail Staff Fatigue Section 6.20 – detailing the criteria to which numerical limits should be applied.
- Limiting overtime with respect to not exceeding the maximum permitted hours without authorisation.

Comment [Office18]: TOL's standards and limits for working hours are more stringent than those identified as being acceptable within bus and rail.

Noted and probably a discussion point for our next meeting.

=====

Potential fatigue due to variances, shift exchanges and overtime is controlled with respect to TOL's standards and limits. [The Control Room staff are not trained in recognising other fatigue causal factors or fatigue in others (See Management Action 05). The process by which the Controllers (located within the Control Room) manage variances and exceedances is not documented. This is being reviewed as part of TOL's full review of their FRMS (Management Action 07). The duty Control Room Manager was interviewed to evidence that the controls relating to TOL's standards and limits are understood and actioned as follows:

- Overtime is checked to be within TOL's standards and limits and recorded on the overtime sheet. Any variances leading to the need for overtime are recorded on the variance sheet.

Comment [Office19]: All control room staff have been briefed on fatigue and the factors that bring on it's onset.

Comment [Office20]: The auditor discussed how fatigue would be managed with controllers during the audit and confirmed he was satisfied that these staff members understand their responsibilities for managing fatigue. This can be clearly evidenced in the comments made by the auditor below.

The auditor requests a review of training (training request for control room staff) where TOL state briefings are in place

Discussion point Understanding Vs documented audit trail

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3.3 Provision of Breaks

ORR's guidance – Managing Rail Staff Fatigue - Section 6.57 – states that controllers of safety critical work should make arrangements for workers to take breaks during periods of duty.

Drivers' breaks are set within the timetabling. This was evidenced on the Duty Cards which detail the timetabling, and associated rest periods, for the routes driven within the roster. Where breaks do not take place at the designated time, or are reduced in length, the Control Room will make mutually agreed adjustments to accommodate additional break time elsewhere in the shift. This is not documented. Section 10 of TOL's audit of their FRMS recommends that guidelines on driver breaks are devised and agreed (**See Management Action 07**). SM0003 Clause 10 – Provision of Breaks – details the length and frequency of breaks. The number of occurrences where this clause is not met is not monitored or analysed (**See Management Action 06**).

Comment [Office21]: The reason this is not monitored is because system design prevents it.

3.4 Roster Design

Should a system be devised to capture this requirement / data and be presented as part answer to rec 6

3.4 Roster Design

ORR's guidance – Managing Rail Staff Fatigue - Appendix A – states that working patterns should be designed to incorporate good fatigue management principles and recommends that an assessment is carried out on the proposed pattern using a fatigue assessment tool. TOL's base rosters established in 2016 were evidenced as being analysed using the HSE Fatigue and Risk Index tool. Section 8 of TOL's audit of their own FRMS identified that rosters are assessed using the HSE Fatigue Index but no formal risk assessment of the roster had been carried out for factors that exacerbate fatigue. ORR's Good practice guidelines – Fatigue Factors, and industry good

this is not intended to be a system design prevents it.

TfL RESTRICTED

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Fatigue Management in Tram Operations Limited - TOL (IA 17 780)

practice, should be considered in addition to applying the HSE Fatigue Risk Index Tool to the roster design (**Management Action 03**).

3.5 Time Sheet Review

SM0003 - Clause 13 – states that time sheets will be randomly selected to review for compliance to the standards and limits on a periodic basis. This is

Comment [Office22]: See previous comment on roster design – although not formally documented in a risk assessment all of the fatigue factors in ORR's good practice guide can be evidenced in the roster design.

Observation in Duty Schedules have visited TOL and reviewed current rosters

Future work to risk assess?

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3.6 Managing the Fatigue Risk of Actual Hours Worked

The recording of actual hours worked, and the controlling of variances and exceedances, is detailed in sections 1.4 and 3.2 of this report. The actual hours worked are controlled with respect to TOL's standards and limits, other fatigue factors are not considered. A sample of actual hours worked, including variances, is not evaluated using a fatigue risk tool (**Management Action 02**).

Comment [Office23]: There is no requirement to do so – evidence has been provided that variances in working hours are checked and well managed by other means.

3.7 Consideration of Travelling Time in Fatigue Management

ORR's guidance – Managing Rail Staff Fatigue - Section 8.7 – states that

Discussion point

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3.7 Consideration of Travelling Time in Fatigue Management

ORR's guidance – Managing Rail Staff Fatigue - Section 8.7 – states that fatigue management systems should include arrangements for assessing and controlling risks from travel time.

Driver travel time is considered in the recruitment process by recruiting drivers who live within a 1 hour commute of the depot. This ensures that if a maximum allowable 12 hour shift is worked, combined with 2 hours travelling to and from work, a 10 hour rest period is achieved.

Drivers are required to notify TOL of any changes of address, this requirement is included in ALO 0030 – New Employee Induction Checklist. The nature and duration of changes to a driver's travel time is not fatigue risk assessed (See Management Action 02).

3.8 Managing Changes to Employees Circumstances

ORR's guidance – Managing Rail Staff Fatigue - Section 6.77 – states that safety critical workers should be made aware of the procedures to be followed if they consider that there are circumstances, such as significant life events or medical conditions, which may cause them to either be or become so fatigued that health and safety could be significantly affected.

requirement to do so – evidence has been provided that variances in working hours are checked and well managed by other means.

Comment [Office24]: This assumes a minimum turn around time of 12 hours – TOL rosters provide a planned minimum turnaround time of 16 hours giving at least 14 hours rest after travelling time is taken into account.

Comment [Office25]: It was explained to the auditor that on notification of a change of address, the individual's line manager would have a discussion with the individual as part of normal good management practice, this discussion would cover travelling time and any necessary reasonable adjustments – evidence to support this claim is available to the auditor if required.

Good practice of 14 hours rest
Rec 2 looks at driver education

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Reporting changes to employee circumstances, with the exception of home address, is not included in ALO 0030 – New Employee Induction Checklist, or TFM 0011 - Safety Responsibility Statement. There is no documented process for drivers to report changes in circumstances (See Management Action 07) or for those changes to be fatigue risk assessed (See Management Action 02).

3.9 Managing the Risk of Fatigue when booking on and off Shifts

ORR's guidance – Managing Rail Staff Fatigue - Sections 5.64 and 5.65 – state that companies should have fitness for duty checking arrangements to ensure that staff reporting for safety critical work are not suffering, or likely to suffer during their shift, from fatigue. This checking should be carried out face to face by staff with awareness in recognising fatigue.

The requirement for employees not to book on if fatigued is included in the driver induction and Lesson Plan 5 of their training. This requirement was

Comment [Office26]: TOL operate a supervised booking on procedure whereby the fitness and welfare of every driver is established before undertaking safety critical work, all employees have the opportunity to discuss welfare issues with their manager either informally when booking on for duty or formally at a pre-arranged meeting if required. TOL also provide access to 2 confidential support services for employees that feel they are not adequately supported through normal channels.

The auditor looks for documentation where TOL explain that they are good in this area.

Discussion on documentation availability / training

3.9 Managing the Risk of Fatigue when booking on and off Shifts

ORR's guidance – Managing Rail Staff Fatigue - Sections 5.64 and 5.65 – state that companies should have fitness for duty checking arrangements to ensure that staff reporting for safety critical work are not suffering, or likely to suffer during their shift, from fatigue. This checking should be carried out face to face by staff with awareness in recognising fatigue.

The requirement for employees not to book on if fatigued is included in the driver induction and Lesson Plan 5 of their training. This requirement was also included in the briefing – Safety Critical Work, Fatigue – dated 8 December 2016, see section 1.2 of this report.

Drivers sign on at the Control Room where the controllers monitor their fitness for work including fatigue. The controllers are not trained in recognising the symptoms of fatigue (See Management Action 05).

Control Room staff were interviewed to determine what they would do if a driver appeared unfit for work. It was stated that they would firstly speak to the driver, and if deemed unfit to work they would be signed off as sick, sent home and their roster re-assigned. This process, including review of the reasons for fatigue, how to manage the individual, escalation (if necessary) and ensuring the safety of the individual in returning home is not documented (See Management Action 07).

3.10 The use of Fatigue Risk Assessment Tools

ORR's guidance – Managing Rail Staff Fatigue - Section 5.32 – states that the FRMS should outline how fatigue risk assessments are to be carried out who

support face booking on procedures whereby the fitness and welfare of every driver is established before undertaking safety critical work, all employees have the opportunity to discuss welfare issues with their manager either informally when booking on for duty or formally at a pre-arranged meeting if required. TOL also provide access to 2 confidential support services for employees that feel they are not adequately supported through normal channels.

Comment [Office27]: All controllers have been briefed on fatigue as previously stated and acknowledged by the auditor.

Comment [Office28]: The process is well understood by those that use it, evidence to that effect was gathered by the auditor through interview and confirmed to be sufficient at the time of audit.

The auditor looks towards training where TOL look at briefing
The auditor looks towards documentation where TOL look towards a good understanding

Discussion point

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TOL has no formal process for determining when a fatigue risk analysis should be carried out. For example FOM 003 – Unauthorised SPAS Event Report - was evidenced as confirming if the working limits had been exceeded but does not consider any other fatigue risk factors. **(See Management Action 02).**

Comment [Office29]: TOL's investigation procedure requires the investigator to identify root causation and where appropriate make recommendations for improvement.

Drivers on late shifts are allocated to tram preparation duties for the later part of their shift. For this reason TOL does not consider drivers working late shifts, either permanently or on rotation, should be considered as night workers and therefore subject to fatigue risk assessment. For comparison purposes LU considers any driver completing 3 rostered hours between 11pm and 6am on a regular basis to be classified as night workers. Working Time Regulations and industry good practice should be reviewed to determine if

late shift workers, particularly those on permanent late shifts, should be classified as night shift workers **(Management Action 08).**

3.11 Fatigue Related Medical Fitness for Work

ORR's guidance – Managing Rail Staff Fatigue - Section 6.6 – states that Regulation 24(1) (a) of ROGS requires controllers of safety critical work to ensure that people carrying out such work have been assessed as fit for that work, and Regulation 24(1) (d) requires them to have in place arrangements for monitoring the ongoing fitness of such staff. These fitness assessments and monitoring arrangements should take potential risks from fatigue into

Comment [Office30]: TOL have reviewed their rosters against Working Time Regulations and believe that their drivers are not night workers. This was explained during the audit. The train preparation example referred to in the report was not introduced to avoid night working. It was a proactive measure taken by the company to manage fatigue risk to drivers following consultation with staff safety representatives.

Should there be a more formal way of highlighting when a Fatigue Risk Analysis should be carried out

Working time regs have been reviewed so this partly answers the mgt action

SM0008 – Fitness Standards (Safety Critical Work) - Clause 3.2 - defines the frequency at which in-service medicals, following the initial medical, are carried out. SM0008 - Appendix A – Medical Standards – details minimum medical fitness requirements for drivers including checks for alerted levels of consciousness and that those drivers with sleep apnea are deemed unfit for duty until treatment is successful. Medicals are completed by Maitland Medical Services.

Late shift drivers, particularly permanent late shift drivers, are not considered by TOL as night shift workers and therefore not subject to a medical appropriate for night shift workers (See Management Action 08).

Comment [Office31]: TOL have reviewed their rosters against Working Time Regulations and believe that these drivers are not night workers.

ALO0030 – New Employee Induction Checklist – includes reporting the use of prescription and over the counter medicines to the company. Control Room staff were interviewed to determine what they would do if a driver reports they are taking medication. It was stated that the medication is checked against a permitted medications list issued by Maitland Medical Services. If the medication is not on the permitted list the driver is either told not to take the medication or stood down. If a driver is stood down Maitland Medical Services are e-mailed with details of the medication to determine if the driver is fit for duty. The procedure for reporting medications, and the subsequent actions, is not documented (See Management Action 07).

Comment [Office32]: The procedure is documented however the procedure could not be located at the time of audit as it was being amended – practical application of the process was discussed with controllers at the time of audit and agreed by the auditor as being embedded and well understood.

4.0 Fatigue Reporting

4.1 Process for Staff to Report Fatigue Related Issues

ORR's guidance – Managing Rail Staff Fatigue - Sections 5.38 and 5.75 – states that there should be open, easy to use channels of communication for

Both points are part answers to the recs
Procedure now available and Working Time regs reviewed

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TOL's completion of the FRMS checklist in Appendix F of the ORR guidance recognised that employees use more informal routes to report fatigue issues, for example talking to their manager. The procedure for recording and managing these reports is not documented (See Management Action 07).

5.0 Physical Environment

TOL advised that TfL provide the rolling stock and as such they consider the design of the cab, and its associated impact on fatigue risk, to be TfL's responsibility in the first instance. HSE document HSG48 - Reducing Error and Influencing Behaviour - refers to the combined effect of the individual,

Comment [Office33]: Verbal concerns raised by staff to managers are dealt with at the lowest possible level in the first instance – usually resulting in a safety conversation between the individuals concerned. Records of such reports (pre-dating the audit) are available within staff personal files, these can be made available for examination by the auditor.

In my experience there will always be the staff member who chooses the informal route to report, is there a formal route process that is documented
Yes please for evidence of previous reports

QP 0005 – Document Control - Clause 4.1.3 - states that TOL documentation shall be reviewed every 2 years or earlier if part of an incident investigation. The last recorded review of SM0003 was in June 2014. SM0003 does not include a statement to undertake a review of the FRMS when the effectiveness of the arrangements is in doubt (See Management Action 01).

TOL Integrated Audit Schedule 2017 - was evidenced as including an audit of TOL's Safety Management System. Items to be covered in this audit are based on TOL's Risk Profile and discussions with the Head of Safety. This was evidenced as including compliance to ROGS.

Comment [Office35]: The FRMS is based on the principle that foreseeable risk is designed out before work that may result in an individual becoming fatigued is undertaken – control is established through regular system of monitoring and review with appropriate management action taken to manage risk to an acceptable level. TOL believe that the nature of the controls already embedded in the system are proportionate and well managed.

SM0003 now updated (when will it be released?) and should it reflect a time frame of minimum FRMS review

APPENDIX 1: MANAGEMENT ACTIONS

Ref.	Description	Report Paragraph	Management Action	Comments moving forward
01	SM 0003 – Safety Critical Employees – Management of Fatigue - does not clearly detail the roles and responsibilities for those employees involved in managing fatigue, or include a statement to undertake a review of the FRMS when the effectiveness of the arrangements is in doubt.	1.1 6.0	These requirements should be included in the revised SM 0003 being developed as part of TOL's full review of its Fatigue Risk Management System.	
02	TOL has no formal process for determining when a fatigue risk analysis should be carried out including: <ul style="list-style-type: none"> • Post Incident. • Sampling actual hours worked. • Risk assessing changes to travel time. • Risk assessing changes to driver's circumstances. 	3.6 3.7 3.8 3.10	TOL's FRMS should outline how fatigue risk assessments are to be carried out, who should carry them out, and under what circumstances they should be completed.	
03	ORR's Good practice guidelines – Fatigue Factors, and industry good practice, are not considered in addition to applying the HSE Fatigue Risk Index Tool to the roster design.	3.4	ORR's Good practice guidelines – Fatigue Factors, and industry good practice - should be considered in the roster design.	
04	TOL's fatigue control measures set limits on working hours, breaks, shift exchanges and exceedances. ORR's Good practice guidelines – Fatigue Factors, in addition to numerical limits, are not considered in the management of changes to driver's hours of work, including shift exchanges.	1.2	ORR's Good practice guidelines – Fatigue Factors, in addition to numerical limits, should be considered in the management of changes to driver's hours of work, including shift exchanges.	
05	TOL's fatigue awareness training does not include: <ul style="list-style-type: none"> • Personal assessment of fatigue risk. • Training for management and supervision on the factors that increase fatigue. • Training for Control Room staff in recognising fatigue in drivers when booking on. • Training in minimising fatigue in the roster design. 	2.2 2.3 3.2 3.9	TOL's training should be reviewed to ensure that drivers are competent in recognising fatigue risk in themselves, and that those responsible for authorising overtime, exceedances and shift exchanges are competent in recognising fatigue risk in others. Training should be provided in minimising fatigue in the roster design.	

06	<p>Data available from monitoring, for example overtime and exceedances, is not analysed, communicated, trended or used to review and update the FRMS.</p> <p>The number of occasions where breaks are moved or not taken is not monitored.</p>	<p>1.4</p> <p>3.3</p>	<p>The process to ensure data from monitoring, and other sources, is used to review and update the FRMS should be considered.</p>	
07	<p>The following procedures are not formally documented:</p> <ul style="list-style-type: none"> • The Control Room's management of variances, exceedances and changes to breaks. • Reporting driver's changes in circumstances. • The process when drivers are deemed unfit for work due to fatigue. • The procedure for reporting medications, and the subsequent actions. <p>The procedure for recording and managing fatigue reporting by staff.</p>	<p>3.2</p> <p>3.3</p> <p>3.8</p> <p>3.9</p> <p>3.11</p> <p>4.1</p>	<p>TOL's FRMS should be reviewed to ensure that the processes for managing and reporting fatigue are documented. The procedure for reporting medications, and the subsequent actions should be documented.</p>	
08	<p>For fatigue risk assessment, and medical fitness for work purposes, TOL does not consider late shift workers, particularly those on permanent late shifts, to be night workers.</p>	<p>3.10</p> <p>3.11</p>	<p>Working Time Regulations and industry good practice should be considered to determine if late shift workers, particularly those on permanent late shifts, should be classified as night shift workers.</p>	
09	<p>TOL does not fatigue risk assess the driving environment as they consider the design of the cab, and its associated impact on fatigue risk, to be TfL's responsibility.</p>	<p>5.0</p>	<p>The arrangements for including the design of the cab, and its associated impact on fatigue risk, within the FRMS should be formalised.</p>	

21 September 2017

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Dear Rory

Internal Audit Report: Management of Fatigue and Tram Operations Limited

I understand from Andy Wallace that TfL's auditors will take no further account of TOL's submissions on the draft TfL Internal Audit Report ("the Report") contained primarily in Andy's letter to you of 22 August 2017.

That is disappointing as our submissions were provided to you in good faith as we understood the draft report to be materially inaccurate in places and potentially misleading in others – matters which are plainly relevant to a bilateral audit process. Our preference at all stages of the audit process has been to work with TfL on a process of our shared goal of the continuous improvement of Croydon Tramlink. Additionally, as we are all aware, this is a particularly sensitive period of time and we feel that there is an obligation on all stakeholders to ongoing investigations not to be making representations or statements which cannot be sustained.

Nevertheless, I wanted to thank you and the TfL auditors for taking the time that they did to review TOL's management processes. We are pleased to note that the Report did not find any substantive fatigue concerns or issues at TOL and considers the fatigue management system to be effective. We work hard with TfL, the unions and others to ensure that our drivers are well supported including through the rostering process and we know that our fatigue arrangements compare very well against those in heavy rail and bus sectors.

The Report makes a number of recommendations in respect of the technical aspects of TOL's system of fatigue management which may potentially improve them. As the Report notes, a number of these had in fact already been identified by our own prior fatigue audit in May. A number of the identified issues have already been or are being addressed. Where this is the case, we are disappointed that this has not been noted in the TfL audit since it was our understanding that the TfL audit was intended to assess the current system and effectiveness.

Many of the recommendations relate to the perception that certain practices have not been documented to the satisfaction of the auditors. As Andy explained, in many of these cases the evidence is that the practices are all in place albeit that they may not have been formally documented or documented within the places that the auditor would like them to be. Andy has, on a number of occasions, showed the auditors this evidence, offered to provide further evidence or invited the auditors to attend the depot to demonstrate to them the existing practices are in place. Should the TfL auditors wish to take up this offer/invitation, they need only contact Andy. In the meantime, we do of course take all audit recommendations seriously and will consider the way that matters are formally documented in the areas that TfL identify.

For completeness, I append a copy of the TfL audit recommendations table annotated with TOL's actions and comments as at this point in time.

Notwithstanding, the points touched on above, there do however remain a number of statements in the Report which, as they are worded, can only be inaccurate and I wanted to highlight those below so that they might be taken into account for the final version:

1 Communication of SM 0003 (Paragraph 1.1)

It is incorrect to say that SM 0003 "*is not formally communicated*". TOL's method of formally communicating documents is through its electronic document control system (XDMS). All employees with direct responsibilities under TOL's procedures (including under SM 0003) have access to the XDMS, and are emailed whenever a new or updated document is uploaded in accordance with TOL's document management processes.

2 Refresher training for drivers on fatigue awareness (Paragraph 2.1)

The Report suggests that "*Formal refresher training is not in place*". All tram drivers are subject to annual appraisals and safety discussions after initial training. Fatigue is specifically covered at the appraisal. Form APF 0018, used by the assessors for drivers' annual appraisals, includes a prompt for the assessor to consider fatigue, sleep, and personal factors to ensure this issue is covered

3 Training in roster design (Paragraph 2.3)

The Report suggests that there is no evidence that TOL's roster designer had received training in minimising fatigue in roster design which suggests a lack competence. TOL's rosters have all been designed by Andy Gray, who was trained by TfL in 1989 and has approximately 28 years' experience of roster design for TOL as well as being a qualified tram driver himself. Andy retired recently but has remained to carry out some roster design work as a consultant. Once that work is complete, TOL will be outsourcing future roster design work to other fully qualified consultants. Following a recent TfL audit of TOL's scheduling practices, auditor Stuart Wilson confirmed that there were no areas of concern and that the roster was efficient and suitable for controlling fatigue

4 The use of fatigue risk assessment tools (Paragraph 3.10)

The Report states "*FOM 003 – Unauthorised SPAS Event Report - was evidenced as confirming if the working limits had been exceeded but does not consider any other fatigue risk factors*".

FOM 003 does not explicitly name other fatigue risk factors. However, it is only a form to support TOL's accident reporting and investigation process set out more fully in SM 0001, which requires the investigator to identify the root cause of an incident and, where appropriate, make recommendations for improvement. Where the root cause is suspected to be fatigue, a full investigation of factors beyond the working time parameters would take place.

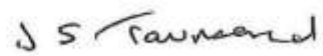
5 Fatigue-related medical fitness for work (3.11)

The Report concludes that "*The procedure for reporting medications, and the subsequent actions, is not documented*".

The procedure is in fact documented, although the latest version of the procedure could not be provided at the time of the audit as it was being updated by our occupational health provider. In its absence, TfL's auditor was nevertheless able to discuss the application of the process with controllers at the time of the audit, and agreed that the process was embedded and well understood. The Maitland Medical note on its Medicines Information Service can be provided if the auditor wishes to see it.

I trust that these errors will be picked up in the draft Report. I look forward to hearing from you.

Yours faithfully

A handwritten signature in black ink that reads "J S Townsend". The signature is written in a cursive style with a large initial "J" and "S".

Jackie Townsend

Interim Managing Director

Enc. *TfL Audit recommendations table*

Ref.	Description	Report Paragraph	Management Action	Owner / Date	TOL comment
01	SM 0003 – Safety Critical Employees – Management of Fatigue - does not clearly detail the roles and responsibilities for those employees involved in managing fatigue, or include a statement to undertake a review of the FRMS when the effectiveness of the arrangements is in doubt.	1.1 6.0	These requirements should be included in the revised SM 0003 being developed as part of TOL's full review of its Fatigue Risk Management System.	Andrew Wallace Oct 17	TOL's view remains that roles and responsibilities were clear in SM0003, however TOL's updated SM 0003 procedure will, once published, close out this recommendation by adding further clarification. A draft is with Clockwork Research for review and comment. Once published, it will be formally communicated within TOL in the usual way (see paragraph 1 above)
02	TOL has no formal process for determining when a fatigue risk analysis should be carried out including: <ul style="list-style-type: none"> • Post Incident. • Sampling actual hours worked. • Risk assessing changes to travel time. • Risk assessing changes to driver's circumstances. 	3.6 3.7 3.8 3.10	TOL's FRMS should outline how fatigue risk assessments are to be carried out, who should carry them out, and under what circumstances they should be completed.	AW Oct 17	TOL's evidence is that these practices already existed and were being implemented at TOL even if not documented. TOL is developing an updated fatigue management policy incorporating existing audit findings and Clockwork Research's gap analysis of the current FRMS. This will be formally communicated within TOL in the usual way (see paragraph 1 above) once written and issued via the XDMS system.

Ref.	Description	Report Paragraph	Management Action	Owner / Date	TOL comment
03	ORR's Good practice guidelines – Fatigue Factors, and industry good practice, are not considered in addition to applying the HSE Fatigue Risk Index Tool to the roster design.	3.4	ORR's Good practice guidelines – Fatigue Factors, and industry good practice - should be considered in the roster design.	Steve Duckering Sept 17	ORR's good practice guidelines on Fatigue Factors are already considered in TOL's current roster design. This has already been evidenced to the auditors. TOL will consider the potential benefits of documenting this process formally within its FRMS review process.
04	TOL's fatigue control measures set limits on working hours, breaks, shift exchanges and exceedances. ORR's Good practice guidelines – Fatigue Factors, in addition to numerical limits, are not considered in the management of changes to driver's hours of work, including shift exchanges.	1.2	ORR's Good practice guidelines – Fatigue Factors, in addition to numerical limits, should be considered in the management of changes to driver's hours of work, including shift exchanges.	SD Sept 17	Similar to recommendation 3, ORR's good practice guidelines on Fatigue Factors are already considered in TOL's fatigue control measures for the management of changes to drivers' hours of work. TOL will consider the potential benefits of documenting this process formally within its FRMS review process.
05	TOL's fatigue awareness training does not include: <ul style="list-style-type: none"> • Personal assessment of fatigue risk. • Training for management and supervision on the factors that increase fatigue. • Training for Control Room staff in recognising fatigue in drivers when booking on. • Training in minimising fatigue in the roster design. 	2.2 2.3 3.2 3.9	TOL's training should be reviewed to ensure that drivers are competent in recognising fatigue risk in themselves, and that those responsible for authorising overtime, exceedances and shift exchanges are competent in recognising fatigue risk in others. Training should be provided in minimising fatigue in the roster design.	SD Sept 17	TOL's existing training and briefing mechanisms already address the factors highlighted in the recommendation, and have been discussed with the auditors at the time of the audit. Aspects such as roster design have already been previously approved by TfL auditors as effective. TOL will consider the potential benefits of documenting this process formally within its FRMS review process.

Ref.	Description	Report Paragraph	Management Action	Owner / Date	TOL comment
06	Data available from monitoring, for example overtime and exceedances, is not analysed, communicated, trended or used to review and update the FRMS. The number of occasions where breaks are moved or not taken is not monitored.	1.4 3.3	The process to ensure data from monitoring, and other sources, is used to review and update the FRMS should be considered.	AW Nov 17	TOL is currently developing terms of reference for a Fatigue Safety Action Group, which will consider ways to improve monitoring of fatigue using, among other sources, the information sources identified by the auditor.
07	The following procedures are not formally documented: <ul style="list-style-type: none"> The Control Room's management of variances, exceedances and changes to breaks. Reporting driver's changes in circumstances. The process when drivers are deemed unfit for work due to fatigue. The procedure for reporting medications, and the subsequent actions. The procedure for recording and managing fatigue reporting by staff.	3.2 3.3 3.8 3.9 3.11 4.1	TOL's FRMS should be reviewed to ensure that the processes for managing and reporting fatigue are documented. The procedure for reporting medications, and the subsequent actions should be documented.	AW Oct 17	These procedures are already well documented within TOL's Safety Management System in TOL's view. In line with TOL's usual ongoing review and development of its FRMS, it is considering whether any changes to current documentation should be made to enhance the clarity of the procedures.
08	For fatigue risk assessment, and medical fitness for work purposes, TOL does not consider late shift workers, particularly those on permanent late shifts, to be night workers.	3.10 3.11	Working Time Regulations and industry good practice should be considered to determine if late shift workers, particularly those on permanent late shifts, should be classified as night shift workers.	SD Sept 17	As confirmed to the auditor at the time of the audit, this assessment has already been undertaken and TOL has confirmed that its late shift workers, permanent or otherwise, are correctly not classified as night shift workers.

Ref.	Description	Report Paragraph	Management Action	Owner / Date	TOL comment
09	TOL does not fatigue risk assess the driving environment as they consider the design of the cab, and its associated impact on fatigue risk, to be TfL's responsibility.	5.0	The arrangements for including the design of the cab, and its associated impact on fatigue risk, within the FRMS should be formalised.	AW Sept 17	TOL supports London Trams (as the asset owner of the stock) in any work they undertake to improve the driver's working environment including through the raising of any issues through the Modifications Panel. In addition, TOL would welcome commissioning by LT of a formal risk assessment by an expert in human factors and ergonomics to support this process.