

Oliver Stewart
RAIB Recommendation Handling Manager



1 February 2023

Mr Andy Lewis
Deputy Chief Inspector of Rail Accidents

Dear Andy,

RAIB Report: Passenger injury at Ashton-under-Lyne tram stop on 12 March 2019

I write to provide an update¹ on the action taken in respect of recommendation 2 addressed to ORR in the above report, published on 28 November 2019.

The annex to this letter provides details of actions taken in response to the recommendations and the status decided by ORR. The status of recommendation 2 is **'Closed'**.

We do not propose to take any further action in respect of the recommendation, unless we become aware that any of the information provided has become inaccurate, in which case I will write to you again.

We will publish this response on the ORR website on 2 February 2023.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Oliver Stewart', written in a cursive style.

Oliver Stewart

¹ In accordance with Regulation 12(2)(b) of the Railways (Accident Investigation and Reporting) Regulations 2005

Recommendation 2

The intent of this recommendation is for tram drivers to have improved visibility of any passengers near trams at tram stops.

KAM should:

(a) carry out a review of the lighting conditions at tram stops to identify any local lighting conditions, taking into account backgrounds, which may make it difficult for tram drivers to see passengers in close proximity to the tram, particularly during night-time operations.

(b) implement the findings of the review, in conjunction with TfGM, to improve the visibility of passengers at the platform-tram interface (e.g. by improving platform lighting and/or tram CCTV systems).

This recommendation may apply to other light rail operators in the UK.

ORR decision

1. KAM and TfGM have jointly considered the issue of lighting conditions at platforms as part of a wider review of PTI risk on the Manchester Metrolink tram network. In 2020, KAM and TfGM formed a multi-disciplinary working group, focussed on reducing PTI incidents. One of the factors considered was lighting conditions, with tram drivers asked to identify stops where this may be an issue.
2. Of the tram stops reviewed, no major issues with lighting were identified. However, the review did identify that the accumulation of dirt on external sideway CCTV camera lenses reduces their effectiveness, particularly in darker conditions. This has been addressed through the introduction of an enhanced cleaning regime.
3. The risk of platform lighting and visibility issue is a standing agenda item for the KAM/TfGM PTI working group.
4. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, KAM has:
 - taken the recommendation into consideration; and
 - has taken action to implement it

Status: Closed.

Previously reported to RAIB

5. On 27 November 2020 ORR reported the following:

Our review of the initial response from KAM concluded that the recommendation had not been properly addressed as KAM had focussed on compliance with the 50 Lux

standard, rather than review lighting conditions at tram stops which may make it difficult for drivers to see passengers in close proximity to the tram.

KAM have since provided an update stating they will carrying out a review of tram stops where there may be a risk of local lighting conditions impacting a driver's ability to see passengers in close proximity to the tram, which is expected to be completed by the end of 2020.

Update

6. On 21 July 2021 Keolis Amey Metrolink and Transport for Greater Manchester provided the following joint update:

In early 2020, a joint KAM and TfGM cross-functional working group was formed, focussing on the reduction of platform tram interface (PTI) incidents on the Metrolink network. The remit of the working group, which comprises H&S team members (both KAM and TfGM), workforce health and safety representatives, driver team managers, engineers and customer operations team members, is to review PTI incidents and identify opportunities to learn and improve existing risk controls taking into account best practice and innovations from across the industry.

Via the PTI Working Group, KAM LRV Drivers were engaged in relation to recommendation 2, and requested to identify areas of the network at which lighting conditions may contribute to a PTI incident similar to that occurring at Ashton stop. A number of locations were proposed on the Altrincham and Bury lines which were subject to further review and assessment.

An additional risk highlighted by the LRV Driver community, with the potential to be a contributory cause of PTI incidents was the accumulation of dirt / carbon on the external CCTV lenses which it was felt impaired visibility, particularly during hours of darkness. Upon further investigation it was identified that the build-up of the dirt / carbon was on the inside of the lens and therefore was not adequately cleaned through the existing cleaning regime.

On 30th November 2020, during darkness hours, a joint KAM and TfGM working party, including members of the HSQE Team, TfGM Engineering Manager and LRV Driver H&S representative visited the locations proposed by the LRV Drivers to review the risks arising from lighting conditions.

A double unit consisting of LRVs 3010/3014 was used in undertaking an assessment at each location. The double unit was brought into the platform, and a person(s) in dark clothing positioned close to each set of doors. The LRV Driver's view of the person via the side view CCTV monitor was assessed by both the LRV Driver and another group member. LUX levels were also recorded at each location at a height of approximately 1m above the platform edge tactile paving.

To better understand the risk arising from unclean sideview CCTV lenses, the lenses of LRV3010 were dismantled and thoroughly cleaned prior to undertaking the assessment. Set 3014 sideview CCTV lens was left uncleaned to enable comparison.

The assessment found that LUX levels were adequate at each location and no background lighting issues were identified. However, it was found that visibility through the uncleaned sideview CCTV lens of LRV 3014 was much reduced when compared to that of LRV 3010.

Based on the findings of assessment, KAM have amended existing D1 LRV maintenance exam to include the removal and cleaning of the external sideview camera lenses and the cleaning regime has been enhanced to ensure the camera lenses were adequately cleaned on a regular basis.

The risk of platform lighting and visibility issue is now a standing agenda item for the Platform Tram Interface Working Group.

Since the introduction of the enhanced maintenance and cleaning regimes there have been no further reports of issues from LRV Drivers.

We now consider that we have implemented recommendation 2 of the RAIB report and will continue to monitor via the PTI Working Group.

7. On 21 December 2022 Keolis Amey Metrolink and Transport for Greater Manchester provided the following further joint update:

I've attached an overview of the action taken by KAM and TfGM to address recommendation 2 of the RAIB report into a passenger accident at Ashton tram stop.



Platform Lighting
Review Report.docx

In summary, we consulted our LRV Driver Health and Safety representatives with regards to tram stops on the network where there was a perceived issue with lighting conditions that may result in a driver having difficulty in seeing a person in close proximity to a tram. The Driver reps reached out to the wider Metrolink driver community to identify the locations that would then be selected for further assessment. In total a 10% sample of stops (10/100) were identified and assessed by a team consisting of TfGM, KAM H&S team members and H&S reps. This assessment considered lighting levels and the driver's ability to see a person(s) close to the platform edge via the cab CCTV.

Previously reported to RAIB

Recommendation 2

The intent of this recommendation is for tram drivers to have improved visibility of any passengers near trams at tram stops.

KAM should:

(a) carry out a review of the lighting conditions at tram stops to identify any local lighting conditions, taking into account backgrounds, which may make it difficult for tram drivers to see passengers in close proximity to the tram, particularly during night-time operations.

(b) implement the findings of the review, in conjunction with TfGM, to improve the visibility of passengers at the platform-tram interface (e.g. by improving platform lighting and/or tram CCTV systems).

This recommendation may apply to other light rail operators in the UK.

ORR decision

1. Our review of the initial response from KAM concluded that the recommendation had not been properly addressed as KAM had focussed on compliance with the 50 Lux standard, rather than review lighting conditions at tram stops which may make it difficult for drivers to see passengers in close proximity to the tram.
2. KAM have since provided an update stating they will carrying out a review of tram stops where there may be a risk of local lighting conditions impacting a driver's ability to see passengers in close proximity to the tram, which is expected to be completed by the end of 2020.
3. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, KAM has:
 - taken the recommendation into consideration; and
 - is taking action to implement it, but ORR has yet to be provided with a timebound plan.

Status: *Progressing*. ORR will advise RAIB when further information is available regarding actions being taken to address this recommendation.

Information in support of ORR decision

4. On 24 February 2020 Keolis Amey Metrolink provided the following initial response:

The Design & Construction Specification for Tram Stop Lighting is that:

a) during operational hours, platforms and ramps shall be lit to a minimum of 50 Lux maintained average illuminance in accordance with RSP2 and good practice

and with a uniformity factor of 0.5. Outside of operational hours platforms and ramps shall be lit to a minimum of 25 Lux maintained average illuminance and with a uniformity factor of 0.5. Other areas of TPL Stops shall be lit to a minimum of 25 Lux maintained average illuminance and with a uniformity factor of 0.5

As part of KAM's contractual obligation with TfGM to maintain lighting assets to this Standard a programme of planned maintenance has been established. The programme will review the condition of all such assets and illumination levels on a 2-year cycle against this Standard. The Ashton-under-Lyne tram stop will be the first in this programme, commencing February 2020.

Additionally, as tram side mounted CCTV cameras are a safety critical device, we are assessing the efficacy of increasing the cleaning frequency of these items.

5. On 17 September 2020 Keolis Amey Metrolink and Transport for Greater Manchester provided the following joint update:

With regard to recommendation 2, following receipt of the RAIB's report and recommendations, KAM undertook a review of the lighting levels at a number of stops across the network to assess compliance with the Design & Construction Specification for Tram Stop Lighting.

With hindsight, it is apparent that the intention of this recommendation had not been fully understood and the actions taken did not adequately address the recommendation. We therefore propose to undertake a further study of tram stops where there may be a risk of local lighting conditions impacting a driver's ability to see passengers in close proximity to the tram. We aim to complete this review before the end of the year and will work collaboratively to address any significant findings. We propose to write to you early in the new year to provide a progress update.