

**Oliver Stewart**  
**RAIB Recommendation Handling Manager**

6 August 2025



Mr Andy Lewis  
Deputy Chief Inspector of Rail Accidents

Dear Andy,

**RAIB Report: Pushchair trapped in tram doors and dragged, Nottingham on 15 December 2017**

I write to provide an update<sup>1</sup> on the action taken in respect of recommendation 2 addressed to ORR in the above report, published on 10 September 2018.

The annex to this letter provides details of actions taken in response to the recommendation 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.

Yours sincerely,

Oliver Stewart

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

## Recommendation 2

*This recommendation is intended to increase Nottingham Trams' understanding of tram risk and the effectiveness of the mitigation measures on which it relies. It is possible that increased understanding of risk from low frequency, high consequence events could be assisted by Nottingham Trams working with the light rail industry body being set up in response to the RAIB's recommendation arising from the Sandilands accident (paragraph 107).*

Nottingham Trams Limited should review its risk assessment process with a view to:

- improving the means by which it considers learning from other parts of the tramway and railway industries;
- giving explicit and detailed consideration of the ways in which identified mitigation measures can fail, and the consequences when this happens; and
- effectively evaluating the safety impact of changes to design and/or operational procedures.

Nottingham Trams should then implement the identified changes and update its existing tram operation risk assessments in accordance with the enhanced procedures (paragraphs 98, 99 and 101)

## ORR decision

1. Nottingham Trams Ltd (NTL) has adopted the LRSSB tram safety risk model and Tram Accident and Incident Reporting System (TAIR) as a means of improving understanding of the risks associated with tram operations. As an example of identifying which risk mitigation measures can fail and the consequence of that failure, NTL has conducted a bowtie risk assessment of a passenger boarding or alighting from a tram.

2. Additionally, the ORR tram team have, over the last couple of years, provided advice to Nottingham Trams on their risk assessment process and the risk assessments produced. Following feedback, Nottingham Trams have revised their risk assessment process, streamlining it and taking into account data's from TAIR and the risk model outputs. We have seen a number of examples of revised risk assessments that give us confidence Nottingham Trams have a reasonable process that produces suitable and sufficient risk assessments.

3. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Nottingham Trams Ltd has:

- taken the recommendation into consideration; and
- has taken action to close it.

**Status: Closed.**

## Previously reported to RAIB

4. On 14 August 2019 ORR reported the following:

NTL have to change Safety Procedure: Risk Assessments SP/HSE/0009 issue 002 to detail the method by which risk assessments are reviewed and if necessary modified by taking into account industry learning.

Successful adoption of the LRSSB Tram Safety Risk Model should provide explicit and detailed consideration of the ways in which identified mitigation measures can fail, and the consequences when this happens. We have asked NTL to confirm when this is in place.

NTL will evaluate the safety impact of changes to design and/or operational procedures through introduction of Quality Procedure: Request for Change QP/ENG/GEN/0013 issue 4.

## Update

5. On 16 July 2021 Nottingham Trams provided the following update:

### **Recommendation 2**

*Point 14 NTL engages closely with LRSSB representatives. TAIR has been adopted in its entirety and NTL QHSE is working with LRSSB (Mark Ashmore) to fully utilise the Tram Safety Risk Model and Bowtie principles. Item closed. Further note, Interim Head of QHSE holds an MSc in Risk Management and is familiar with Bowtie risk assessment methodologies and will provide training to QHSE team members.*

*In addition to the aforementioned please find attached an updated table of responses and programme to modify Incentro trams with rear-view CCTV to replicate the Citadis tram.*



ORR



Updated

Recommendation 2: Programme June 2021

6. Nottingham Trams have completed the Bowtie Risk assessment (attached):



LRTHE.031 Passenger  
Incident whilst Boarding

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Nottingham Trams should then implement the identified changes and update its existing tram operation risk assessments in accordance with the enhanced procedures (paragraphs 98, 99 and 101)

### ORR decision

1. NTL have to change Safety Procedure: Risk Assessments SP/HSE/0009 issue 002 to detail the method by which risk assessments are reviewed and if necessary modified by taking into account industry learning.
2. Successful adoption of the LRSSB Tram Safety Risk Model should provide explicit and detailed consideration of the ways in which identified mitigation measures can fail, and the consequences when this happens. We have asked NTL to confirm when this is in place.
3. NTL will evaluate the safety impact of changes to design and/or operational procedures through introduction of Quality Procedure: Request for Change QP/ENG/GEN/0013 issue 4.
4. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Nottingham Trams has:
  - taken the recommendation into consideration; and
  - is taking action to implement it

**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

5. 20 December 2018 Nottingham Trams provided the following initial response:

*Rec 2 (a) - NTL currently monitors all RAIB Investigations and the recommendations from comparable operations are assessed and actioned where appropriate. The scope of the assessment will be broadened and mainline recommendations will be considered in more detail. - Closed*

*Rec 2 (b) - Include in risk assessment reviews. - Closed*

*The Light Rail SRM precursor model and bow-tie accident modelling, when completed, will complement this. - Open*

*Rec 2 (c) - Design changes are currently evaluated for impact on operational procedures via the engineering change process. – N/A*

*Review NTL risk assessment Sep '18 process. – Closed*

6. On 27 March 2019, Nottingham Trams provided the following update:

*We access a wide range of sources to ensure we capture relevant safety and operational best practice whether this is from accident investigations UK, Europe and worldwide or by sharing operational best practice.*

*Examples are:*

- NTL are very active within UK Tram having representatives on the Operational, Engineering and Heads of Safety working groups. These are continually reviewing current performance and incidents, sharing and developing best practice, and supporting industry investigations and development programmes (e.g. developing NMU crossing guidance and assessment processes).*
- NTL are part of the Keolis group having operations worldwide. Keolis promote best practice sharing and utilize knowledge management and sharing platforms that provide the ability to publish best practice, access technical experts elsewhere in group and raise topics for discussion. Keolis hold national and international conferences for safety, engineering and operations to provide opportunities for face-to-face discussions and work on common issues.*