

## Recommendation(s) Status: Fatal collision between a tram and a pedestrian near Saughton tram stop, 11 September 2018




This report is based on information provided to the RAIB by the relevant safety authority or public body.

The status of implementation of the recommendations, as reported to us, has been divided into eight categories:

### Key to Recommendation Status

<b>Implemented:</b>	All actions to deliver the recommendation have been completed.
<b>Implemented by alternative means:</b>	The intent of the recommendation has been satisfied in a way that was not identified by the RAIB during the investigation.
<b>Implementation ongoing:</b>	Work to deliver the intent of the recommendation has been agreed and is in the process of being delivered.
<b>Insufficient response:</b>	The end implementer has failed to provide a response; or has provided a response that does not adequately satisfy ORR that sufficient action is being taken to properly consider and address a recommendation.
<b>Progressing:</b>	The relevant safety authority has yet to be satisfied that an appropriate plan, with timescales, is in place to implement the recommendation; and work is in progress to provide this.
<b>Non-implementation:</b>	Regulation 12(2)(b)(iii) = recommendation considered and no implementation action to be taken.
<b>Other Public Body or Authority</b>	The recommendation is also addressed to another public body or authority.
<b>Awaiting response:</b>	Awaiting initial report from the relevant safety authority or public body on the status of the recommendation.

RAIB concerns on actions taken by organisations in response to recommendations are reflected in this report and are indicated by one of the following:

-  The red triangle shows recommendations where the RAIB has concerns that no actions have been taken in response to a recommendation.
-  The blue triangle shows recommendations where the RAIB has concerns that the actions taken, or proposed, are inappropriate or insufficient to address the risk identified during the investigation.
-  The white triangle shows recommendations where the RAIB notes substantive actions have been reported, but the RAIB still has concerns.

Note: The tables which follow, report the status of recommendations on 31 December 2015. In some other cases the end implementer has already sent information to the relevant safety authority about the actions it has taken, or proposes to take and the safety authority is considering whether it is satisfied that those actions and the associated timescales are accepted.

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>1            11/09/2018    09/2019</p> <p>Fatal collision between a tram and a pedestrian nr Saughton tram stop</p> <p>Status: Implemented</p>	<p>The intent of this recommendation is to improve the audible warnings provided to pedestrians by trams in Edinburgh (paragraph 55).</p> <p>Edinburgh Trams Limited should:</p> <p>a) increase the audibility of its tram warning horns so that they provide effective warning of approaching trams to pedestrians, in particular at foot crossings on off-track sections of its network. The warning horns should be clearly discernible above the background noise at relevant locations and take into consideration sighting distances and line speeds; and</p> <p>b) develop, document, brief and train instructions in which situations it expects its drivers to use the horn as an audible warning.</p> <p>This recommendation may apply to other UK tram operators.</p>	<p>ORR has reported that Edinburgh Trams Limited has reported that it has completed actions taken in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>2            11/09/2018    09/2019</p> <p>Fatal collision between a tram and a pedestrian nr Saughton tram stop</p> <p>Status: Implemented</p>	<p>The intent of this recommendation is to improve the safety of pedestrian crossings on off-street sections where trams run at relatively high speeds (paragraph 75).</p> <p>Edinburgh Trams Limited should:</p> <p>a) undertake risk assessments of all of its pedestrian crossings on off-street sections and identify any necessary control measures. The assessment should include consideration of the crossing layout, sighting distances, line speed, tram braking distances and the audibility of the tram warning horns. Control measures for consideration should include the following safety features:</p> <ul style="list-style-type: none"> <li>• improved demarcation of the crossing; and</li> <li>• barriers, chicanes, or similar, to turn pedestrians' direction of travel, just before crossing, to face oncoming trams on the nearest track.</li> </ul> <p>b) develop and implement a procedure for monitoring that the control measures identified remain valid.</p>	<p>ORR has reported that Edinburgh Trams Limited has reported that it has completed actions taken in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

**Number/ Date/ Report No/  
Inv Title / Current Status**

**Safety Recommendation**

**Summary of current status (based on ORR's report to  
RAIB)**

3            11/09/2018    09/2019  
  
Fatal collision between a tram and a  
pedestrian nr Saughton tram stop  
  
Status: Implemented

The intent of this recommendation is to establish improved industry guidance for the audibility of warning horns and bells fitted to current and future UK trams (paragraph 85).  
  
The Light Rail Safety and Standards Board (LRSSB) should develop the guidance for audible warnings devices on both current and future UK trams, so that they provide effective warning of approaching trams.  
The guidance should define a process so that each tram operator can establish appropriate sound pressure levels and frequencies for warnings that are clearly discernible above background noise  
and which take into consideration sighting distances, tram braking characteristics and line speeds.

ORR has reported that the Light Rail Safety Standards Board has reported that it has completed actions taken in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.

4            11/09/2018    09/2019  
  
Fatal collision between a tram and a  
pedestrian nr Saughton tram stop  
  
Status: Implemented

The intent of this recommendation is to improve current industry guidance for pedestrian level crossings on UK tram systems, by including lessons from this accident and previous similar accidents (paragraph 75).  
  
The Light Rail Safety and Standards Board (LRSSB) should update and improve the current industry guidance for the design, layout and management of off-street pedestrian level crossings on UK tram systems contained in 'Tramway Principles and Guidance', January 2018. The new guidance should consider lessons from this and previous similar tramway accidents. It should as a minimum include guidance on routine risk assessments of crossings, taking into account sighting distances, line speed, tram braking characteristics and the audibility of warning horns.

ORR has reported that the Light Rail Safety Standards Board has reported that it has completed actions taken in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.