

## Recommendation(s) Status: Collapse of the OHL near to Jewellery Quarter Tram Stop, Midland Metro




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 six 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>In-progress:</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>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 latest report from the relevant safety authority or public body)
<p>1            20/04/2011    21/2012</p> <p>Collapse of the OHL near to Jewellery Quarter Tram Stop, Midland Metro</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to prevent damage to tensioned components within the Midland Metro OLE system which may result in their failure.</p> <p>National Express Midland Metro should determine the minimum mechanical clearance necessary around tensioned components within the OLE system to prevent contact that may damage them. It should introduce controls to prevent smaller clearances than this minimum from either being introduced into the system or developing during operational service and not being detected (paragraphs 128b, 129d, 130c and 130d).</p>	<p>National Express Midland Metro has reported that it has taken actions in response to this recommendation. Office of Rail Regulation (ORR) proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>2            20/04/2011    21/2012</p> <p>Collapse of the OHL near to Jewellery Quarter Tram Stop, Midland Metro</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to ensure that persons holding responsibility for directing work on the OLE on the Midland Metro and/or for passing it as being fit for service have access to up-to-date and relevant information regarding its correct installation and configuration.</p> <p>National Express Midland Metro should ensure that staff within its organisation that hold responsibility for supervising work on the OLE and/or for passing it as being fit for service have access to the information needed for them to confirm its correct installation and configuration. This information should be up-to-date and accurate and would typically include items such as manuals, drawings or other supporting documents. This information should be made available to any third-parties undertaking similar duties (paragraph 130a).</p>	<p>National Express Midland Metro has reported that it has taken actions in response to this recommendation. Office of Rail Regulation (ORR) proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>3            20/04/2011    21/2012</p> <p>Collapse of the OHL near to Jewellery Quarter Tram Stop, Midland Metro</p> <p>Status: Implemented by alternative means</p>	<p>The purpose of this recommendation is to ensure that the mechanism(s) by which operating loads are able to deform the twin track bracket arm assembly at 18512 pole are identified and addressed.</p> <p>National Express Midland Metro should determine how the operating loads within the OLE are able to cause the type of deformation observed in the twin track bracket arm assembly at 18512 pole in July 2011. It should identify and implement appropriate measures to remove the causes of this deformation (paragraphs 128c and 129c).</p>	<p>ORR reports that National Express Midland Metro had initially commissioned Brecknell Willis to carry out an assessment of loadings of the arrangement. However, a more fundamental approach was adopted to redesign the tension lengths and to replace the overlap at pole 18512 with a mid-point anchor to remove the high radial loading incurred as a result of the alignment of the 'run-in' and 'run-out' cables. This modification would serve to minimise deformation of cantilever arms. On February 2014, National Express Midland Metro confirmed that the tension lengths at pole 18512 had been redesigned and the overlap has been replaced with a mid-point anchor.</p>
<p>4            20/04/2011    21/2012</p> <p>Collapse of the OHL near to Jewellery Quarter Tram Stop, Midland Metro</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to ensure that the ability of bracket foot assemblies to rotate freely is not restricted by contact between pole bracket clevises and clevis covers.</p> <p>National Express Midland Metro should inspect the tensioned section of the OLE to ensure that there is clearance between the</p>	<p>National Express Midland Metro has reported that it has taken actions in response to this recommendation. Office of Rail Regulation (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 latest report  
from the relevant safety authority or public body)**

clevises of OLE pole brackets and the clevis covers of bracket foot assemblies sufficient to allow these assemblies to rotate freely around pole bracket pins. Any inadequate clearances identified should be rectified (paragraph 129a).

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5            20/04/2011    21/2012  
Collapse of the OHL near to Jewellery Quarter  
Tram Stop, Midland Metro  
Status: Implemented

The purpose of this recommendation is to ensure that National Express Midland Metro identifies OLE components that may affect the safe operation of the tramway and controls any changes made to them.

National Express Midland Metro should identify those OLE components which may affect the safe operation of the tramway. It should review the current processes and practices intended to control changes to these components and implement any actions required to ensure that effective change control is exercised in the future (paragraphs 129a and 131a).

National Express Midland Metro has reported that it has taken actions in response to this recommendation. Office of Rail Regulation (ORR) proposes to take no further action unless they become aware that the information provided becomes inaccurate.

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6            20/04/2011    21/2012  
Collapse of the OHL near to Jewellery Quarter  
Tram Stop, Midland Metro  
Status: Implemented

The purpose of this recommendation is to ensure that any risks created by a driver becoming incapacitated during an incident are assessed and that appropriate mitigation measures are adopted by National Express Midland Metro.

National Express Midland Metro should assess what, if any, risks would be created by a driver becoming incapacitated during an incident. It should identify and implement appropriate measures to manage any identified risks, such as additional training for CSRs (paragraph 131b).

ORR reports that National Express Midland Metro has:

- Introduced training and management for the 'Primary member of staff at the scene';
- Revised the procedure for dealing with incidents, to include the above.
- Issued instructions regarding the carrying of necessary equipment at all times whilst on board a tram.

ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.

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7            20/04/2011    21/2012  
Collapse of the OHL near to Jewellery Quarter  
Tram Stop, Midland Metro  
Status: Implemented

The purpose of this recommendation is to ensure that the mandatory competencies of drivers and CSRs are assessed and that those found critical to the safe operation of the Midland Metro are subject to a competence management system that ensures they are achieved and maintained.

National Express Midland Metro should review the current mandatory competences held by drivers and CSRs in order to identify those which are essential to the safe operation of the Midland Metro. It should identify and implement appropriate measures to ensure that all such competences are maintained (paragraph 131d).

National Express Midland Metro has reported that it has taken actions in response to this recommendation. Office of Rail Regulation (ORR) proposes to take no further action unless they become aware that the information provided becomes inaccurate.