

Oliver Stewart
Senior Executive, RAIB Relationship and
Recommendation Handling

Telephone 020 7282 3864

E-mail oliver.stewart@orr.gov.uk

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Mr Andrew Hall
Deputy Chief Inspector of Rail Accidents
Cullen House
Berkshire Copse Rd
Aldershot
Hampshire GU11 2HP

Dear Andrew,

RAIB Report: Derailment at Liverpool Street station, London on 23 January 2013

I write to provide an update¹ on the action taken in respect of recommendation 1 addressed to ORR in the above report, published on 11 December 2014.

The annex to this letter provides details of the action taken regarding the recommendation. The status of recommendation 1 is '**Implemented**'.

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 15 June 2020.

Yours sincerely,

Oliver Stewart

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

Recommendation 1

This recommendation is intended to reduce the risk of derailment arising from the performance of non-standard track assets by establishing an appropriate and independently checked inspection regime.

Network Rail should improve its management systems so that both the identification of all non-standard track assets, and the associated inspection regimes intended to manage any enhanced risk of derailment, are recorded and independently checked. The scope of these inspection regimes should include mechanisms for identifying indications of possible gauge widening and, where necessary, assessing dynamic track gauge.

ORR decision

1. Network Rail reviewed its track management system and found it be sufficiently robust. However, shortcomings were identified with different interpretations of standards, so a Track Work Information sheet (TWI) has been produced aimed at standardising the approach to identifying higher or unusual risk assets and suggesting possible suitable mitigations. Network Rail have now confirmed that the TWI has been briefed to TME and RAM (track) in each route.
2. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail has:
 - taken the recommendation into consideration; and
 - has taken action to implement it.

Status: Implemented.

Previously reported to RAIB

3. ORR reported on 9 December 2015 that Network Rail was taking action to implement it but this was subject to progress with implementation of the Business Critical Rules (BCR) programme and no timebound plan for this had been provided.

Update

4. On 7 July 2016 Network Rail provided the following closure statement:



20160707 Liverpool
Street 1 Closure Stat

5. Network Rail state the following:

This recommendation sought to provide a management system that improves the identification of track assets with enhanced risk of derailment, where assets are in some way non-standard or operate in an aggressive environment, to risk assess them and implement appropriate mitigations if required.

The considered response of the Chief Track & Lineside Engineer is that the current track management systems laid out in the standards and means of control are sufficiently robust with respect to the management of inspection plans and the additional risks and requirements associated with locations with high or unusual risk of derailment.

Pertinent documents/clauses are detailed in Appendices C, D & E, as follows:

C) Means of Control (MoC) NR-MOC-TRK-005275 'Use asset data to create and review maintenance and asset management plans';

D) NR/L2/TRK/001 'Inspection and Maintenance of Permanent Way' (Issue 9; September 2015); and

E) NR/L2/TRK/001/mod02 'Track Inspection' (Issue 7; September 2015).

However, the interpretation and application of these controls have not been consistently applied across the routes. To remedy this, a Track Work Information Sheet (TWI) has been produced and briefed to standardise the approach to identifying higher or unusual risk assets and suggesting possible suitable mitigations. TWI 3G130 'How to determine higher or unusual risk of derailment in track assets' was briefed at the March 2016 Quarterly Track & Lineside Governance and Safety Briefing in Milton Keynes. This was then cascaded to Track Maintenance Engineers (TMEs) and Section Managers in the routes via the Route Asset Manager (RAM [Track]). The TWI formally introduced the Track Risk Register (TRR) an example of which is shown in Appendix A. A summary and the briefing notes for TWI 3G130 can be found in Appendix F.

In addition to the introduction of the new TWI, Dynamic Inspection (DI) has been successfully introduced to circa 50 locations including Liverpool Street Station, by the introduction of the Multi-Purpose Vehicle (MPV) in the S&C DI Programme. These locations have each been identified and nominated by the relevant RAM [Track] in consultation with their TME as higher risk locations that previously had no dynamic inspection regime. This has greatly enhanced the geometry management of our station throats and complex layouts by making geometry faults in high risk infrastructure more evident, so proactive remedial work can be undertaken. Examples of the MPV outputs can be found in Appendix B. It is considered that the introduction of TWI 3G130 has given the required practical guidance to the current standards framework, which identifies higher risk assets to allow consistent application of the requirements. Therefore, the intent of this recommendation has been addressed and can therefore be CLOSED.

Previously reported to RAIB

Recommendation 1

This recommendation is intended to reduce the risk of derailment arising from the performance of non-standard track assets by establishing an appropriate and independently checked inspection regime.

Network Rail should improve its management systems so that both the identification of all non-standard track assets, and the associated inspection regimes intended to manage any enhanced risk of derailment, are recorded and independently checked. The scope of these inspection regimes should include mechanisms for identifying indications of possible gauge widening and, where necessary, assessing dynamic track gauge.

ORR decision

1. ORR, in reviewing the information received from Network Rail has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it has:

- taken the recommendation into consideration; and
- is taking action to implement it but this is subject to progress with implementation of the Business Critical Rules (BCR) programme and no timebound plan for this has been provided.

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

Information in support of ORR's decision

2. In its response of 27 April 2015, Network Rail provided the following information:

Network Rail will look to provide guidance on:

- *what factors should be taken into account when determining if there is a 'non-standard site with an increased risk of derailment' which could include track design, track use and environmental factors;*
- *identifying whether some of the risks can be eliminated;*
- *where risks cannot be eliminated, what additional or enhanced inspection regimes should be implemented on these sites; and*
- *the scope of the inspection regimes to include mechanisms for identifying indications of possible gauge widening, and where necessary, accessing dynamic track gauge.*

These elements will be included in the proposed Track Maintenance Engineer course (see Rec 2 response).

The guidance would be applied by the TME and reviewed/checked by the RAM [Track].

Network Rail will identify an appropriate system (existing or new) in which this information is recorded and retained.

3. In an e mail on 8 June 2015, Network Rail provided the following additional information:

Within the framework of the current Standards structure it is evident that some assets due to design, operating context or environmental reasons pose a greater or unusual risk of derailment. To identify and mitigate the risk the following approach will be taken:-

- *The first task has been to identify the factors that combine to make a location a higher risk e.g.*
 - *Tight Radius*
 - *Inspected in Darkness*
 - *Non-standard design*
 - *Subject to accelerated wear or corrosion*
 - *Similar flexure turnout*
 - *Etc...*
- *Put these factors into a scoring regime to identify locations that may require additional mitigation against derailment.*
- *Adjust the scoring regime to highlight 1 or 2% of assets with highest risk, calibrate the scoring regime against previous derailments (due to track infrastructure) to ensure these locations would be identified.*
- *Send the scoring regime out to the routes for validation.*
- *Identify a national database (most likely Ellipse) of validated locations.*
- *Produce a periodic review criteria for each of the locations identified and validated, so local engineers can assess the risk and eliminate or reduce the risk profile of these locations through mitigation.*
- *Record the decisions made and mitigation introduced in a suitable location (most likely Ellipse).*