Oliver Stewart
RAIB Recommendation Handling Manager

23 July 2025

Mr Andy Lewis
Deputy Chief Inspector of Rail Accidents

Dear Andy,

RAIB Report: Freight train derailment at Sheffield station on 11 November 2020

I write to provide an update[1] on the action taken in respect of recommendations 1 & 3 addressed to ORR in the above report, published on 5 October 2021.

The annex to this letter provides details of actions taken in response to the recommendations and the status decided by ORR. The status of recommendations 1 & 3 is **'Closed'.**

We do not propose to take any further action in respect of the recommendations, 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

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

Recommendation 1

The intent of this recommendation is to improve the management of derailment risk at locations where that risk is high.

Network Rail should review its processes for the application of site-specific derailment risk assessments, such as those implemented by track work instruction TWI 3G130, and make and brief any necessary changes so that they are fully and consistently implemented by track maintenance staff.

ORR decision

1. Network Rail established a working group to undertake a remit of work to implement changes aligned with the recommendation. This resulted in TWI3G130 being removed and superseded by a new L3 standard – NR/L3/TRK/9025 – Track Risk Register issued on 1 March 2025. Included within the new standard is a risk assessment tool (TEF3316), which provides a risk ranking to Track Maintenance Engineer (TME) and Section Managers (SM) of risks of an unusual nature.

2. NR/L2/TRK/001 Module 02 has been updated to provide assurance to the new standard, outlining the responsibility of Infrastructure Maintenance Engineers (awareness of geographical location of responsibility and transfer of knowledge to TME's) and TME (transfer of knowledge to newly appointed SM's). A briefing note for staff is included within the NR/L3/TRK/9025 standard.

3. 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 close it.

Status: Closed.

Previously reported to RAIB

4. On 8 August 2022 ORR reported the following:

Network Rail is reviewing the derailment risk assessment aspects of track work instruction TWI 3G130 and relevant Level 2 standards with the aim of identifying opportunities to improve and standardise risk assessment processes, thus increasing the likelihood that locations where derailment risk is high are identified.

To improve the consistency of recording and visibility of TME risks, Network Rail is taking steps to improve the analysis and reporting of engineering verification findings, including establishing a National Track Risk Register. The track national controls framework will be updated, including agreed remits for projects to update

standards, competence and training. A Post Implementation Review will be done to assess the effectiveness of changes to the national control framework.

Update

5. On 15 April 2025 Network Rail provided the following closure statement:

[N238-10] Sheffield Rec 1.pdf

Recommendation 3

The intent of this recommendation is to align standards and practice for the use of check rails.

Network Rail should review, and update and brief as necessary, its standards and processes relating to the fitment of check rails to clarify their applicability, or otherwise, to tight track radius locations inside switches and crossings as a means of managing derailment risk

ORR decision

6. Network Rail has undertaken a review of standards relating to the fitment of check rails. NR/L2/TRK/2102 was tightened in 2015 to mandate check rails on all new installations with a <200m radius. This has been applied to new S&C designs since c.2012. The review also found that while check rails are mandated on tight radius plain-line track (generally considered to be <200m), the applicability of this requirement has been historically open to interpretation within S&C. As a result, some standard designs include extended check rails <200m, while others do not.

7. Network Rail introduced a new standard (NR/L3/TRK/9025) which contains requirement for the management of higher-risk track assets. The document formalises the requirements of a track risk register to manage higher risk or unusual track assets.

8. Standard NR/L2/TRK/001 has been updated to reflect instructions where screws are replaced on <300m curves, they have to be replaced rather than reused. This mitigates against partially compromised/fatigued screws being put back into service.

9. Network Rail also carried out Vehicle Track Dynamic Analysis to look at the forces applied to the track. The analysis did not support retrospective fitment of check rails.

10. 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 close it.

Status: Closed.

Previously reported to RAIB

11. On 8 August 2022 ORR reported the following:

Network Rail has provided a plan to work towards harmonising standards relating to check rails in S&C. Network Rail also want to improve understanding of derailment mitigation (such as check rails) where practical for gauge-spread susceptible layouts.

As with recommendation 2, we asked Network Rail to advise if a post implementation review of the changes would be undertaken with regards to this recommendation. They advised that for any standards amended by the review being carried out will be subject to PIR as this forms part of the standards update process.

Update

12. Network Rail provided the following closure statement dated 24 April 2025 and supporting document:


[N239-12] Sheffield Station Rec 3.docx


[N239-12] Sheffield Station Rec 3 Checkra

Previously reported to RAIB

Recommendation 1

The intent of this recommendation is to improve the management of derailment risk at locations where that risk is high.

Network Rail should review its processes for the application of site-specific derailment risk assessments, such as those implemented by track work instruction TWI 3G130, and make and brief any necessary changes so that they are fully and consistently implemented by track maintenance staff.

ORR decision

1. Network Rail is reviewing the derailment risk assessment aspects of track work instruction TWI 3G130 and relevant Level 2 standards with the aim of identifying opportunities to improve and standardise risk assessment processes, thus increasing the likelihood that locations where derailment risk is high are identified.

2. To improve the consistency of recording and visibility of TME risks, Network Rail is taking steps to improve the analysis and reporting of engineering verification findings, including establishing a National Track Risk Register. The track national controls framework will be updated, including agreed remits for projects to update standards, competence and training. A Post Implementation Review will be done to assess the effectiveness of changes to the national control framework.

3. 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
- Is taking action to implement it by June 2024.

Status: Implementation ongoing. **ORR will advise RAIB when actions to address this recommendation have been completed.**

Information in support of ORR decision

4. On 20 December 2021 Network Rail provided the following action plan:

Action Plan
Please provide milestones with dates
The proposed action plan is: 1. Review TWI 3G130 in the context of recent derailments to identify opportunities to improve and standardise the risk assessment process and how this is applied (April 2022). 2. Review requirements in Level 2 standards (e.g. NR/L2/TRK/001, NR/L2/TRK/053, NR/L2/TRK/1054) for risk assessment of track and S&C assets to identify opportunities to improve and standardise the risk assessment process and how this is applied (April 2022).

	3. Complete the in-flight 2021/22 Engineering Verification (EV) into how Track Maintenance Engineers (TMEs) assess and manage their highest risk assets, including analysis and reporting of EV findings (May 2022). 4. Develop a proposal for a standardised TME Risk Register, based on the findings from actions 1, 2 and 3. This will include a review of the IT solutions which will enable national roll out (June 2022). 5. Update the track and S&C national controls framework as required, including publication and briefing of new standards, creation and publication of new training material, implementation of a national TME Risk Register, and updates to all relevant Level 1 and Level 2 assurance question sets (Sept 2023). 6. Post Implementation Review (PIR) of national control framework changes to assess effectiveness of the changes made (June 2024).
Evidence required to support closure of recommendation	
	1. Report summarising the results of the review of existing track standards (actions 1 and 2). 2. Report summarising the results and actions arising from the TME Top Risks EV (action 3). 3. Documented proposal for a standard TME Risk Register template (action 4). 4. Updated materials for the track national controls framework, including agreed remits for projects to update standards, competence and training (action 5). 5. Documented finalised TME Risk Register template and IT-enabled solution (action 5). 6. A documented PIR and lessons learned.

Recommendation 3

The intent of this recommendation is to align standards and practice for the use of check rails.

Network Rail should review, and update and brief as necessary, its standards and processes relating to the fitment of check rails to clarify their applicability, or otherwise, to tight track radius locations inside switches and crossings as a means of managing derailment risk

ORR decision

5. Network Rail has provided a plan to work towards harmonising standards relating to check rails in S&C. Network Rail also want to improve understanding of derailment mitigation (such as check rails) where practical for gauge-spread susceptible layouts.

6. As with recommendation 2, we asked Network Rail to advise if a post implementation review of the changes would be undertaken with regards to this recommendation. They advised that for any standards amended by the review being carried out will be subject to PIR as this forms part of the standards update process.

7. 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
- Is taking action to implement it by April 2023.

Status: Implementation ongoing. **ORR will advise RAIB when actions to address this recommendation have been completed.**

Information in support of ORR decision

8. On 20 December 2021 Network Rail provided the following action plan:

Action Plan
Please provide milestones with dates
The proposed action plan is: 1. Documentation / literature review: a. Review relevant Network Rail, Railway Group Standards, Euronorms and UIC standards for alignment on check rail provision. b. Review published limits / thresholds for check rail inclusion to determine adequacy of level of derailment protection. c. Review standard drawing designs for appropriate provision of check rails as standard for tight radius turnouts. d. Review responses to Special Inspection Notice 139 and note any follow up actions or trends to consider effectiveness. Any deficiencies or conflicts shall be presented to Track Standards and Controls Group for acceptance. Updates shall be remitted and timescales aligned to complexity of change(s) required (June 2022). 2. Carry out modelling to identify the expected load case(s) for derailment mitigation. This will consider both flange climb (design intent of check rail) and gauge-spread resistance. Loading is likely to be similar to flangeback loading on flange-climb / tight radius curves – this will be validated. This modelling will consider effects of varying wheel sizes in addition to track parameters (radius, degree of gauge spread, fastening integrity). The outcome of the modelling will be an improved understanding of the role of the check rail in gauge-spread scenarios and its contribution to lateral resistance (December 2022). 3. Update standards and/or drawings as necessary and brief via standards cascade process. The process will align with the action owner for RAIB Sheffield Recommendation 1 to determine if mandating TWI 3G130 would further mitigate derailment risk. If required this would be discharged through updates to NR/L2/TRK/2102 and NR/L2/TRK/001 as appropriate. Changes are anticipated to be minor (April 2023).
Evidence required to support closure of recommendation
1. Report summarising the results of the review of existing track standards and literature (action 1). 2. Report summarising the results from modelling analysis of check rail loading (action 2). 3. Updated materials for the track national controls framework, including agreed remits for projects to update standards, competence and training (action 3).