Oliver Stewart
RAIB Recommendation Handling Manager

8 August 2022

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

Dear Andy,

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

I write to report[1] on the consideration given and action taken in respect of the recommendations 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, 2, 3 & 4 is **'Implementation on-going'.**

ORR will advise RAIB when further information is available regarding actions being taken to address these recommendations.

We will publish this response on the ORR website on 9 August 2022.

Yours sincerely,

Oliver Stewart

Initial consideration by ORR

1.   All 4 recommendations were addressed to ORR when the report was published on 5 October 2021.

2.   After considering the recommendations ORR passed all 4 recommendations to Network Rail asking them to consider and where appropriate act upon them and advise ORR of its conclusions. The consideration given to each recommendation is included below.

3.   ORR also brought recommendation 3 to the attention of other infrastructure managers as it was concluded that that there are equally important lessons for them. ORR did not ask these organisations to provide a reply.

4.   This annex identifies the correspondence with end implementers on which ORR's decision has been based.

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

5.   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.

6.   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.

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 June 2024.

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. 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 2

The intent of this recommendation is to improve the implementation of safety-critical track maintenance activities.

Network Rail should review its arrangements for how safety-critical changes to the management of track maintenance are incorporated into its processes and procedures, including consideration of management assurance of compliance. In particular, this review should include consideration of how Network Rail determines whether such changes should be implemented as standards or as guidance. Network Rail should make and brief any revisions necessary to facilitate appropriate, consistent and effective implementation of such safety-critical changes

ORR decision

9.   Network Rail has provided a time-bound plan for a review of how safety-critical changes are incorporated into its processes and procedures. We support the decision to broaden the scope of the recommendation to cover other disciplines as well as track.

10.   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 this would not be subject to a PIR as it is process change rather than changes to standards.

11.   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

12.   On 20 April 2022 Network Rail provided the following action plan:

Action Plan
Please provide milestones with dates
During NRRP (when this recommendation was first reviewed) it was decided to initially broaden the scope (not just focus on track), as this risk exists across all disciplines. 1. Review NR/L2/CSG/STP001, including the NR standards remit form and SSG standards 2. management process. This is to understand whether there is an opportunity to enhance this framework to provide more information to standard steering groups (SSG) and standard working group leads on how to categorise proposed new content using the existing RAG definitions. October 2022 3. Review processes for converting new standard content into Level 1 and Level 2 assurance question sets, to timescales aligned to the compliance date for a revised standard. October 2022 4. Review processes for taking lessons learned from Level 1 and Level 2 assurance activity and converting these outputs into future risk control framework improvement plans. October 2022 5. Produce an action plan as appropriate from the three review activities above, implement changes to processes for updating standards and the associated assurance of requirements. April 2023

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

13. 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.

14. 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.

15. 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

16. 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).

Recommendation 4

The intent of this recommendation is to improve the ability of track maintenance staff to detect changes in track geometry.

Network Rail should review, and change as necessary, the format of the data produced by its MPV track recording unit, geometry recording trolleys and other measurement systems, and analysis tools, so that track maintenance staff can routinely and easily identify fault locations and perform trend analysis of track geometry (paragraphs 125b and 127a). This recommendation reinforces recommendation 1 from RAIB's investigation into the freight train derailment at Willesden High Level junction on 6 May 2019, and could be incorporated into the work resulting from it

ORR decision

17.   Network Rail has provided a plan setting out how data from the MPV track recording unit and manual geometry recording equipment will be made available in a more usable format. Training for identifying track degradation from data produced by MPV and manual equipment will also be reviewed.

18.   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 2023.

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

Information in support of ORR decision

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

Action Plan
Please provide milestones with dates

Multi-Purpose Vehicle (MPV)
A new easy to follow track trace to be introduced which will simplify identification and location of issues found by the MPV (March 2022).

Network Rail's Insight Decision Support Tool (DST) has been developed to allow frontline staff to analyse track geometry data, to monitor deterioration of the asset and guide where work is required to be undertaken. The Insight project is an iterative process, with clearly defined work streams. However, as an addition, Network Rail is now looking to allow data from the MPV to be ingested into the Insight tool as part of the project. A plan to complete this work, including cost estimates and timescales for implementation of the proposed enhancement will be prepared (September 2022).

Manual Geometry Recording Equipment
Software to allow Amber recorder data, to produce a trace, for the patrolled site, as well as the ability to load faults into the company geometry management system (TIGER), will be developed and rolled out across NR Delivery Units (September 2022).

This is an interim enhancement, the intention (once the data format has been aligned), is that this data will also be loaded into the Insight DST with the ability to load previous inspections, to allow monitoring of manually inspection site deterioration. The Insight DST development programme will be reviewed and a plan to complete this second enhancement, including cost estimates and timescales for implementation of the updates, will be prepared (September 2022).

Delivery Unit Technical Teams
Linked to this Recommendation and in further support of improving track geometry risk management, Network Rail is creating a Manual Geometry Measurement training module, covering preparatory work, inspection, and post-inspection evaluation of the data. This training will enhance the current knowledge about track system degradation of Deliver Unit Technical Team staff who conduct manual track geometry measurement (December 2022).

Post Implementation Review
A Post Implementation Review (PIR) will be carried out to assess effectiveness of the changes made (June 2023).

Evidence required to support closure of recommendation

1. MPV enhanced new trace available.
2. MPV data available within Insight DST.
3. Manual geometry software available.
4. Manual geometry data available in Insight DST.
5. Delivery Unit Technical Team training module published and available for delegates to book onto.
6. A documented PIR and lessons learned.