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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: Freight train derailment at Heworth, Tyne and Wear, 23 October 2014

I write to provide an update¹ on the action taken in respect of recommendations 2, 3, 4 and 5 addressed to ORR in the above report, published on 24 September 2015.

The annex to this letter provides details of the action taken regarding these recommendations. I had previously reported to you that the status of all four recommendations was 'insufficient response'. The status of recommendations 2 and 4 is now '**implementation on-going**'. The status of recommendations 3 and 5 is '**progressing**'.

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 27 April 2017.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Oliver Stewart', written in a cursive style.

Oliver Stewart

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

Recommendation 2

The intent of this recommendation is to reduce the possibility of new track defects developing at Heworth, which could cause a derailment.

Network Rail should investigate why water is not draining from the track bed in the vicinity of where the train derailed (between 99 miles 220 yards and 99 miles 264 yards on the Down Sunderland line between Pelaw and Newcastle) and implement measures to control the risk of excess water affecting the track's vertical geometry. Such measures could include ballast cleaning, remedial work to improve the effectiveness of the installed track drainage, through to a renewal of the track.

ORR decision

1. Network Rail has investigated the condition of the track bed at the incident location and found the root cause of the poor asset condition to be the lack of an outfall for the drainage system. ORR is content that Network Rail has an appropriate time-bound plan in place to address the issues identified.
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
 - is taking action to implement it by 30 April 2017

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

Previously reported to RAIB

3. On 4 August 2016 ORR reported that Network Rail had not responded to the recommendation and that the status of the recommendation was 'Insufficient response'.

Update

4. On 21 January 2017 Network Rail provided the following response:

The initial investigations into the condition of the track bed at Heworth revealed that:

1. *The drainage system that serves the area of derailment extends from LEN3/098.1216 to 099.0780*
2. *According to the 2012 Integrated Drainage Project data in Ellipse, the system consists of 136 assets*

3. *The fall of the system is from east to west (from low to high mileage)*
4. *No off track drainage is present in the area: no crest or slope drains are connected to the track drainage system. The drainage system serves the trackbed exclusively*
5. *The system appears NOT to have an outfall. This is the root cause of the failure of the drainage system*
6. *The logical outfall for the system is a 900mm ID sewer the runs beneath the railway at LEN3/099.0780 (approximately). This sewer is owned by Northumbrian Water and is not in CARRS and is not recorded in the Hazard Directory. No other culverts, pipes or drains run beneath the railway in the area served by this drainage system*
7. *Recent work by Works Delivery was not recorded in Ellipse.*

An order has been placed with a supplier to conduct the following survey and remedial works by February 2017:

1. *Survey drainage system from 098.1200 to 099.0780 and confirm position of outfall*
2. *Confirm suitability and status of outfall and confirm whether we have documented right of discharge.*
2. *Enter asset condition and confirmed system configuration into Ellipse*
3. *Jet and prove system from 099.0780 (outfall) to 098.1216 (commencement of system)*
4. *Repair any damage found during survey.*

Recommendation 3

The intent of this recommendation is to reduce the risk of derailment in the Newcastle Track Section Manager area due to track defects that are not repaired after being found by the inspection regime.

Network Rail should review the condition of the track assets in the area covered by the Newcastle Track Section Manager against the records on its system for maintaining its track assets (Ellipse). The aim of the review should be to identify track defects requiring maintenance action which are either not recorded on Ellipse, do not have a planned date for repair, or have not been correctly prioritised for repair. Once identified, these defects should be recorded on Ellipse, prioritised and given a date for repair.

ORR decision

5. Network Rail has carried out a review to identify track defects requiring maintenance in the Newcastle TME area. ORR has asked Network Rail to provide confirmation that track defects requiring maintenance action are recorded in Ellipse, have been correctly prioritised and give a date for repair.

6. 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, but ORR has yet to be provided with a detailed plan or timescales for completion.

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

Previously reported to RAIB

7. On 4 August 2016 ORR reported that Network Rail had not responded to the recommendation and that the status of the recommendation was 'Insufficient response'.

Update

8. On 21 January 2017 Network Rail provided the following response:

The TME now runs a fortnightly 1/8th by 1/8th review for both the Newcastle TME and Morpeth TME areas which is attended by the track SMs and planners. The review aims to identify track defects requiring maintenance action which are either not recorded on Ellipse, do not have a planned date for repair, or have not been correctly prioritised for repair.

The IME is scheduled to attend one 1/8 by 1/8 per period for each TME to understand the risk associated with each section and the controls in place/support required for each TME. From August the RME has also been attending the 1/8 review.

This comprises a review of each line using HD footage and the workbank in Ellipse to correctly identify and prioritise the workbank.

This provides a detailed review and assessment of the planned work and enables the team to fully understand the condition of their asset.

Part of the output from the 1/8 review is the population of the potential TSR register to build up and provide knowledge and actions around the areas of risk.

In addition to the 1/8 by 1/8 review the IME now chairs a 4 weekly track risk review meeting with the TME Newcastle, TME Morpeth and RAM Representative.

The purpose of this meeting is to review any unmitigated risks within each area and identify areas of support/funding required for each engineer.

Any issues requiring escalation from this meeting are then taken forward to the monthly Route Reliability and Compliance meeting with the AD, IMDM.

The IME self-assurance documentation has been amended to include additional checks on the following:

Additional checks on reviews on repeat rough ride locations, repeat super red 1/8ths and repeat track geometry faults.

The SM/TME/Technical self-assurance process is being amended to review if the VPE & Super Reds are being managed in accordance with the standard

The 1/8 review is attended periodically by the IME to allow a review of the process and to meet DU self-assurance requirements on the management of track geometry.

The effectiveness of this regime will be measured through the additional ATME post at Newcastle carrying out monthly technical light touch assurance (to maintain focus on technical compliance in key areas). This would measure compliance to some key items such as Super red inspections, L2 management, 053, 054, loss of rail section.

The Additional ATME will provide assistance to reduce the VPE/Super Red inspections that are currently in backlog.

9. On 15 March 2017 ORR asked Network Rail if they could provide confirmation that from the review track defects requiring maintenance action have been identified; that they are recorded in Ellipse; and have been correctly prioritised and give a date for repair.

Recommendation 4

The intent of this recommendation is to reduce the risk of derailment due to track assets not being maintained by better understanding the reasons for the problems found in this investigation.

Network Rail should investigate why its track assets within the area covered by the Newcastle Track Maintenance Engineer consistently have the highest numbers of

reportable track geometry defects and sections of track in the super-red category on LNE Route. The investigation should include consideration of:

- the number of staff needed to maintain the track assets in the Newcastle Track Section Manager area, so that both reactive and planned volumes of preventative maintenance activities are delivered;
- the effect that changes to safe systems of work used by the track maintenance teams has had on the time spent working on the track;
- the effect that the introduction of PLPR within the track inspection regime has had on increasing the track maintenance workload;
- the types and numbers of track assets in the Newcastle Track Maintenance Engineer's area, their age, and their condition, in comparison to the other Track Maintenance Engineer areas on LNE Route; and
- the effect that any other factors have had in contributing to the high number of track asset defects.

Based on the findings of the above investigation, Network Rail should determine what the appropriate target values are for the numbers of reportable track geometry defects and sections of track in the super-red category in the Newcastle Track Maintenance Engineer area. Network Rail should then take action to improve the maintenance of the track assets in this area to a level that allows these targets to be met.

ORR decision

10. ORR has asked Network Rail to confirm if they have determined appropriate target values for reportable track geometry defects and 'super red eighths'.

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 31 March 2017.

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

Previously reported to RAIB

12. The Network Rail response refers to the national target of a 50% reduction in level 2 twist faults by the end of 2016-17, but is silent on super red eighths. ORR has asked Network Rail to confirm the target (in percentage and number) for level 2 twist faults for the Newcastle Track Maintenance Engineer area; over what duration this target has to be achieved; and the action that has been taken to improve maintenance of the track assets in this area to a level that allows these targets to be

met. ORR also asked Network Rail to confirm the target level for portions of track categorised as super red eighth, and timescale to achieve that target.

Update

13. On 21 January 2017 Network Rail provided the following response:

Network Rail have investigated why its track assets within the area covered by the Newcastle Track Maintenance Engineer consistently have the highest numbers of reportable track geometry defects and sections of track in the super-red category on LNE Route. The investigation considered:

- *the number of staff needed to maintain the track assets in the Newcastle Track Section Manager area, so that both reactive and planned volumes of preventative maintenance activities are delivered;*
- *the effect that changes to safe systems of work used by the track maintenance teams has had on the time spent working on the track;*
- *the effect that the introduction of PLPR within the track inspection regime has had on increasing the track maintenance workload;*
- *the types and numbers of track assets in the Newcastle Track Maintenance Engineer's area, their age, and their condition, in comparison to the other Track Maintenance Engineer areas on LNE Route; and*
- *the effect that any other factors have had in contributing to the high number of track asset defects.*

Network Rail's Head of Track has set a target of a 50% reduction in Level 2 Twist faults by end of 2016-17 throughout the business.

The LNE AD North Area has established a plan that delivers this in stages. First is to remove Repeat L3 faults – that is 36 hour twist, gauge and Cat I cyclic, target 4 months. Then to remove all remaining L3 faults, target 6 months. Then a 50% reduction in repeat L2 twist faults and 50% reduction in L2 twist total.

Recommendation 5

The intent of this recommendation is to reduce the risk of derailment due to track assets not being maintained by better management through auditing and monitoring procedures.

Network Rail should investigate why its management arrangements allowed non-compliances to processes for track asset maintenance to go undetected in the area covered by the Newcastle Track Maintenance Engineer, which correspondingly had the highest numbers of reportable track geometry defects and eighth of a mile sections of track in the super-red category when compared to other areas. The investigation should include consideration of:

- why its audit and self-assurance framework did not identify the full extent of the non-compliances to processes found by the RAIB;
- why its reporting and monitoring processes did not trigger earlier action by senior management within the Route to resolve the persistent problems affecting the track assets in the Newcastle Track Maintenance Engineer area; and
- whether there are other Track Maintenance Engineer areas, like the one at Newcastle, with persistent non-compliances to processes that are affecting the maintenance of its track assets.

Based on the findings of its investigation, Network Rail should take action to improve the management arrangements at Route level that audit, monitor and review the performance of a local area to highlight non-compliances which are resulting in persistent deficiencies with the maintenance of its track assets.

ORR decision

14. We believe the deep dive review will help Network Rail address this recommendation and welcome recognition that work beyond that review needs to be done in the Newcastle TME area to ensure that the review findings remain valid at that location, whilst taking account of any local factors.

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, but ORR has yet to be provided with a timebound plan.

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

Previously reported to RAIB

16. On 4 August 2016 ORR reported that Network Rail had not responded to the recommendation and that the status of the recommendation was 'Insufficient response'.

Update

17. On 21 January 2017 Network Rail provided the following response:

Network Rail has remitted a 'Deep Dive Review' into the effectiveness of its level 1 assurance arrangements. As part of this review Network Rail will seek to determine why the management arrangements allowed non-compliances to

processes for track asset maintenance to go undetected in the area covered by the Newcastle Track Maintenance Engineer leading to the derailment at Heworth.

The review will identify any local reviews or investigations into derailments, their consideration of the effectiveness of the assurance arrangements, the improvements that have been made at Newcastle DU within the scope of this review, the effectiveness of these improvements and how these have been shared with the route and beyond.

The review will then independently assess the following in relation to the incident and Newcastle DU:

- a) the reporting and monitoring processes;*
- b) the self-assurance arrangements;*
- c) the audit arrangements.*

To determine:

what was planned;

what was delivered;

whether the outputs highlighted the issue;

the effectiveness of the management response; and

what improvement is required to enable these arrangements to be effective.

The review will determine what improvements are required to Network Rail's monitoring, self-assurance and audit arrangements, agree these at an appropriate governance meeting and implement the agreed improvements.

Separate to the 'deep dive review' a review of data available nationally will be undertaken to determine whether it is capable of highlighting whether similar situations exist in other TME areas/DUs.

19. ORR is confident that the deep dive review will help Network Rail identify how to address this recommendation. Network Rail's response referred to a timescale date of 28 February 2017 which had now passed. We asked Network Rail to provide timescales for the following activities:

- The independent review of the arrangements in Newcastle DU – when complete, and findings provided
- When any identified improvements will be agreed – when known, and details provided
- When those improvements will be implemented

The final paragraph of the response states:

Separate to the 'deep dive review' a review of data available nationally will be undertaken to determine whether it is capable of highlighting whether similar situations exist in other TME areas/DUs.

20. We asked Network Rail to provide further information of this work and timescales for completion.