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17 October 2013

Ms Carolyn Griffiths
Chief Inspector of Rail Accidents
Rail Accident Investigation Branch
Block A, 2nd Floor
Dukes Court
Dukes Street
Woking GU21 5BH

Dear Carolyn,

Derailment at Windsor and Eton Riverside, 11 October 2009

I write to provide an update¹ on the consideration given and action taken in respect of recommendations 1, 2 and 3 addressed to ORR in the above report, published on 4 August 2010.

The annex to this letter provides details of the consideration given/action taken in respect of these recommendations which have been implemented.

We do not propose to take any further action in respect of these recommendations unless we become aware that any of the information provided becomes inaccurate, in which case I will write to you again².

We expect to publish this response on the ORR website on 31 October 2013

Yours Sincerely

Chris O'Doherty

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

² In accordance with Regulation 12(2)(c)

Recommendation 1

The purpose of this recommendation is to improve the skills of all staff involved in track inspection (including managers and supervisors) in identifying excessive dynamic gauge widening. Taken in conjunction with their existing competence in identifying chair shuffle the enhanced skills should increase the ability and confidence of staff in deciding if a dynamic derailment risk is evident.

Network Rail should revise its current competency training programme for all staff involved in track inspection to include reference to the visual identification of abnormal running band and its relationship with chair shuffle and wide gauge as an indication of dynamic gauge problems and potential risk of derailment.

Brief Summary on what was previously reported to RAIB on 10 February 2011

1. ORR has noted Network Rail's intention to undertake a review and concluded that we need to have sight of and consider the results of the review. We therefore wrote to Network Rail on 11 November 2010 asking for sight of the outcomes of the review including reasoning, conclusions and evidence to support Network Rail's position in respect of implementing the recommendation.
2. Network Rail confirmed on 26 November 2010 it would provide this information to ORR by 31 May 2011. We therefore expect to be able to provide an update to RAIB by 30 September 2011, following evaluation of any information received.

Update

3. Network Rail provided an update on 3 June 2011 advising that:

Network Rail has undertaken a review of its content and delivery of current competency training modules associated with track inspection to understand where this might be improved in respect of the importance of the correct identification of abnormal running band and the underlying causes.

The review has considered the current track patrolling training package and has concluded that there may be benefit in arranging for some additions to be made within the 'track gauge' and 'sleepers' sections NR/C&TM/TTF/06 sections 5.3 & 5.10 of the training material.

This will be progressed with support from Network Rail Training Delivery Specialists taking due recognition of similar guidance provided within the 'Track Geometry 1' course (NR/C&TM/TTF/04 sections 11) about rail wear and running band (in relation to gauge).

This work was confirmed at Network Rail's Content Review Group (CRG) for Track and will be progressed within the current target completion date of March 2012.

Network Rail provided an update on 3 June 2011 advising that:

The revised training modules have been completed and signed off. Implementation of the revised modules is being progressed for roll out in August 2012 for new course attendees. Existing competence holders will be covered by briefing material linked to Assessment in The Line (AiTL) process and question sets.

ORR Decision

4. After reviewing information received from Network Rail, 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.

ORR will write to RAIB again if it becomes aware that the information above is inaccurate.

Status: *Implemented*

Recommendation 2

The purpose of this recommendation is for Network Rail to consider how potentially vulnerable parts of the network that are not covered by track recording vehicles can be subject to dynamic gauge measurement

Network Rail should develop a proposal for the periodic measurement of dynamic gauge at potentially vulnerable locations not covered by a track recording vehicle, and implement the identified measures as appropriate.

Brief Summary on what was previously reported to RAIB on 10 February 2011

5. ORR has noted Network Rail's intention to undertake a review and concluded that we needed to have sight of and consider the results of the review. We therefore wrote to network Rail on 15 November 2010 asking for sight of the outcomes of the review including reasoning, conclusions and evidence to support Network Rail's position in respect of implementing the recommendation.

6. Network Rail confirmed on the 26 November 2010 it would provide this information by 31 August 2011.

Update

7. Network Rail provided an update on 17 August 2011 advising that:

At a review workshop held in April 2011 involving representatives from Track Engineering and Railway Systems it was agreed that current management and technical requirements as specified by Network Rail company standards are sufficient for the management of dynamic gauge at potentially vulnerable locations not covered by a track recording vehicle. Furthermore, the consequential risk posed at these locations is not considered significant as a consequence of their track category assessment.

The review also concluded that the underlying issue was non-compliance with company standards and that if action had been taken in accordance with specified minimum actions derailment risk would have been mitigated.

Nevertheless, the review confirmed the importance of consideration of dynamic gauge measurement and proposed the following actions that may improve management of gauge in such vulnerable locations:

- *Reminder to Track Maintenance Engineers (TME) of the risk of 'gauge spread' – addressed at Track Maintenance Engineering conference on track geometry management on 7th July 2011;*

- *Inclusion of dynamic gauge measurement and gauge spread risk in the developing Track Maintenance Engineer (TME) training and competency course (linked to Windsor & Eton Recommendation 1) - this work was confirmed at Network Rail's Content Review Group (CRG) for Track and will be progressed within the current target completion date of March 2012;*
- *Investigation into the practicability of direct measurement of dynamic gauge at slow speed using current TRU fleet [Track Recording Unit fleet]– the issue is that the associated safety case for the laser equipment on the fleet does not allow measurement and recording below circa 9 mph. This is being investigated by the Track Engineering Technology Management Team and the (external) assessment was completed July 2011; the impact of the report is being assessed;*
- *The Railway Systems team has been requested to model the effect of gauge variations - initial output expected September 2011.*
- *In conclusion, Network Rail has considered the management of dynamic gauge and the control measures in place to mitigate gauge spread which it is felt are sufficient within company standards. Nevertheless, in line with its approach of continuous improvement, actions have been proposed to further understand dynamic gauge measurement theory and practice. It is therefore considered that the intent of this recommendation has been met.*

8. On 9 February 2012 ORR wrote to Network Rail requesting an update on progress being made to investigate the practicability of direct measurement of gauge using the current TRU fleet at below 9 mph was being investigated and modelling of the effect of gauge variation. Network Rail provided an update on 5 June 2012 advising that:

As stated under Wigan North Western Recommendation 4 above, the gauge variation modelling work is not considered to be a high priority. Nevertheless, Network Rail's Railway Systems Engineering team expect to be able to carry out modelling to improve understanding of gauge variation threshold levels and actions by the end of 2012. Network Rail will share the results of the modelling work with ORR once it has been completed.

A review workshop was held in April 2011 involving representatives from Track Engineering and Railway Systems. It was agreed that current management and technical requirements specified by Network Rail company standards are sufficient to manage dynamic gauge at potentially vulnerable locations not covered by a track recording vehicle." A closure statement has been prepared for signing off by the Functional Director.

Network Rail believes that the technology improvements that are currently being made to the systems on its Track Recording Vehicle fleet will enable the recording of gauge at speeds lower than 9 mph.

The results of the initial trials are expected shortly and Network Rail will share the results of the initial trials with ORR once they have been completed.

9. At meeting on 16 October 2012 Network Rail advised that the slower speed operation of Balfour Beatty Track 2 system that includes the measurement of dynamic gauge at slower speed is in final stages of validation.

10. Network Rail provided an update on 8 February 2013 advising that:

In theory the gauge system can measure down to 0 mph, however the operational speed of the gauge system is limited by the safety case of the low speed cut-off of the lasers, which is 8-9 mph.

To date Network Rail has been concentrating on emulating the current system and therefore Balfour Beatty has not focussed its resources on assessing the possible minimum low speed capability of alignment.

The new Track Geometry Measurement system (TrueTrak) has been successfully installed on two Track Recording Vehicles and has a lower cut –off speed of 7 mph. These vehicles have just entered into production service and have not yet operated for a sufficient amount of time to demonstrate the delivery of additional gauge data. It is anticipated that the results of the lower cut –off speed will be available by the end of the 1st quarter 2013/14 (this will require Asset Information to monitor and evaluate the extent of additional data captured).

ORR Decision

11. ORR has concluded that Network Rail has considered how *potentially vulnerable parts of the network that are not covered by track recording vehicles can be subject to dynamic gauge measurement*³.

12. Network Rail concluded that: *...the underlying issue was non-compliance with company standards and that if action had been taken in accordance with specified minimum actions derailment risk would have been mitigated... and that ...the consequential risk posed at these locations is not considered significant as a consequence of their track category assessment.*

13. However, *Network Rail has introduced a new Track Geometry Measurement system (TrueTrak) which has been successfully installed on two Track Recording Vehicles, with a lower cut –off speed of 7 mph. These vehicles have just entered into production service and have not yet operated for a sufficient amount of time to demonstrate the delivery of additional gauge data.*

14. After reviewing information received from Network Rail and 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.

15. ORR will be meeting with Network Rail to discuss the outcomes of the trials and will write to RAIB again if it becomes aware that the information above is inaccurate.

Status: Implemented – *Network Rail is managing the risks by alternative means.*

Recommendation 3

The purpose of this recommendation is to ensure that Network Rail auditors are aware of findings from previous relevant audits to determine whether appropriate

³ Extract from RAIB report paragraph 86: Network Rail standard NR/L2/TRK/001 (Section 11.4.2) mandates that track measurements are taken at all locations except on lines with permitted speeds of less than 20 mph (32 km/h). The standard stipulates that manual methods of recording the track geometry in other areas should be implemented and approved by the Principal Maintenance Support Engineer.

action has been taken and to enable them to understand the reasons why issues have recurred after they had been reported as closed

Network Rail should ensure that its procedures for planning audits are amended to include a requirement for those undertaking audits of infrastructure maintenance activities to include as an input to the development of the audit plan a review of the findings from previous relevant audits and action taken, irrespective of whether the associated action is open or closed.

Brief Summary on what was previously reported to RAIB on 10 February 2011

16. ORR is concerned that Network Rail believes that it is unable to ensure that its own procedures are amended. However, we noted Network Rail's intention to implement a change to the maintenance delivery unit audit process, and we wrote to Network Rail on 15 November 2010 and on 3 December 2010 requesting confirmation that the change was implemented.

17. On 9 December 2010 Network Rail advised ORR that:

The Network Rail Procedure NR/L3/MTC/MG043 "National Core Audit Programme (NCAP) Maintenance Delivery Units" is being re-written. It will be re-issued in March 2011 to include this requirement to brief auditors on previous audit findings from the same Delivery Unit prior to the audit.

Update

18. On 15 March 2011 we wrote to Network Rail asking if the action was complete and if this was not the case when it expected the action to be completed by.

19. Network Rail provided an update on 13 July 2011 advising that:

Network Rail Procedure NR/L3/MTC/MG043 "National Core Audit Programme (NCAP) Maintenance Delivery Units" has not yet been rewritten, as the content will be influenced by changes to the overarching Network Rail Safety Assurance Framework standard that are currently being drafted.

However, as an interim measure, in April 2011 the Lead Auditors guidance for undertaking Delivery Unit (DU) Audits was updated, requiring them to present previous NCRs [Non Conformance Report] to the IMDM [Infrastructure Maintenance Delivery Manager] and to the Technical Auditors. Appropriate briefing of this change was made to Lead Auditors and their teams.

20. Network Rail provided a further update on 17 August 2011 advising that:

The Standard Network Rail Procedure NR/L3/MTC/MG043 "National Core Audit Programme (NCAP) Maintenance Delivery Units" will be republished at the same time as the Network Rail Assurance Framework Standard NR/L2/ASR/036. The latter standard is being revised to take account of improvements to the Safety Compliance Framework, changes relating to the Devolution programme and the forthcoming requirements of the EU Common Safety Method on Monitoring.

The proposed date for publication is March 2012.

The guidance to Maintenance Auditors is now in place and is being adhered to. It requires them to present previous NCRs to the IMDM [Infrastructure Maintenance Delivery Manager] and to the technical auditors.

Timescale to fully implement: March 2012.

21. ORR met with Network Rail, on the 3 September 2013 and on 11 September 2013, and was shown evidence that Network Rail auditors at both corporate audit level and Infrastructure Maintenance Function Audit level are made aware of findings from previous audits to determine whether appropriate action has been taken and understand reoccurrences.

22. At the 11 September 2013 meeting Network Rail explained that:

The Maintenance Lead Auditor sends copies of previous relevant audit reports to all parties involved in an audit. When this information has been received the Lead Auditor arranges a Pre-Audit meeting (this meeting is held 6 weeks prior to commencement of the audit) for which the attendees are generally the IMDM, IME, P&A Engineer, Compliance Advisor (MCAA) and Audit team (the IMDM does however have the flexibility to bring other parties (due to the continual changes to DU structure)).

At this meeting 'the agenda' mentions the need to review any open NCRs and to discuss the process to be undertaken for any Repeat NCRs found.

This agenda is used for all Maintenance audits conducted. However, this is not currently a mandatory agenda within either the NR/L3/MTC/MG0043 & NR/SP/ASR/036 standards due to the current moratorium preventing changes being made to standards.

The audit then commences and any Non compliances identified are raised accordingly and accepted by the IMDM and the audit report is produced showing any identified 'Repeat NCRs'.

In addition to this, the SSDE Quarterly Safety Report is also produced by the Audit Manager which further seeks to trend the Delivery Units performance with the previous year's audits.

Whilst repeat NCRs are not looked upon favourably Network Rail does recognise that these are sometimes caused by influences outside the DU's control and therefore to try and prevent NCRs being raised again and again a five step process in place:

1) TNC/Derogation Process: *The Delivery Unit can apply for a national Temporary Non-Compliance or Derogation through either the RAM team or Maintenance Compliance Assurance Advisors (MCAA) to protect NCRs being raised for known non-compliance for which there is an Action Plan detailing how compliance will be reached at a given date in time and listing any mitigation measures in place based on risk evaluation.*

2) MCAA Route Reviews: *In addition to this, the MCAAs on each route undertake reviews of on-going compliance against known NCRs by undertaking interim reviews as demonstrated below or passing on details of identified non-compliance to other Delivery Units on their route to try and prevent further additional NCRs on the same subject needing to be raised.*

3) Root Cause Analyses Audit: *The Audit Team have also begun to undertake Root Cause Analyses Audits to ascertain the reasons why a non-compliance has occurred repeatedly. The aim is to try and prevent the non-compliance remaining in the business. These audits evaluate the reasons why a problem exists using the following headings as reason for causation of non-compliance:*

- *Policy, Governance and Leadership*

- *Organising for Control and Communication*
- *Co-operation Competence & Development*
- *Planning & Implementing Risk Controls*
- *With a number of sub section headings within.*

4) Health Checks: *Additionally the team have also been asked to undertake Health Checks directly to provide IMDMs with a guide to how compliant a DU area is when staff changes are implemented, to enable changes to be made in advance of any formal audit being completed, as demonstrated in the attached file which demonstrates a mature organisation prepared to accept and correct non-compliances.*

5) National NCR Process: *National NCRs are also raised when a non-compliance is identified that cannot be addressed solely within maintenance to enable non-compliances to be raised on other departments. These issues are then either dealt with using the Maintenance Audit organisation or passed to the S&SD or Internal audit organisation to address as appropriate.*

ORR Decision

23. Whilst the underlying standards have not been changed, due to the current freeze on standards change as a consequence of the move to Business Critical Rules. ORR is satisfied that Network Rail's working level instructions to its auditors have been changed and are being followed, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, has:

- taken the recommendation into consideration; and
- has taken action to implement it.

ORR will write to RAIB again if it becomes aware that the information above is inaccurate.

Status: *Implemented*