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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 of a freight train near Langworth, Lincolnshire on 30 June 2015

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 24 June 2016.

The annex to this letter provides details of the action taken regarding the recommendations. The status of recommendations 1 & 3 is **'Implemented'**.

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 on 8 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

The intent of this recommendation is for Network Rail to improve the reliability and accuracy of the stress free temperatures recorded in its database of rail stresses as a key element of its strategy for the prevention of track buckles.

Network Rail should:

a. review its guidance to maintainers on the circumstances in which:

- a re-measurement of stress free temperature; or
- the re-stressing of rails to a stress free temperature of 27oC, is considered appropriate.

The review should include an assessment of whether sufficient account is taken of factors not explicitly covered by the standard currently, such as the difficulty of maintaining stress in short sections of plain line between abutting switch toes or the nature of any maintenance work carried out, which can affect the buckling resistance of vulnerable track; and

b. develop a programme to deliver any actions arising from the review, including amendments to standards and early rebriefing of track maintenance staff, to meet the intent of the recommendation

ORR decision

1. Network Rail have reviewed the guidance around rail stressing, reiterating the importance of stress recording and CRT management.

2. We identified an issue regarding maintaining stress in short lengths of plain line between abutting switch toes, or the nature of any maintenance work being carried out which can affect the buckling resistance of vulnerable track, which is being managed through briefing, a Track Worker Information sheet and information in TRK 001 module 14.

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
- taken action to implement it.

Status: Implemented.

Previously reported to RAIB

4. On 6 November 2017 ORR reported the following:

Network Rail's initial response refers to a review of materials covering hot weather preparation and a review of the use of Rail Stress to manage records of Stress Free Temperature (SFT). These two pieces of work were due to be completed by 30

September 2016 and 30 November 2016 respectively, but Network Rail have not yet confirmed this.

As well as confirmation that both of the reviews have been completed and the outcomes, we've asked Network Rail to confirm if the update included publishing and briefing modified documents.

Update

5. On 5 March 2020 at an ORR Quarterly Liaison Meeting, with Network Rail Professional Head of Track we discussed the recommendation, the briefing provided to Network Rail track staff, TWI and information in TRK 001 module 14, along with stressing competence requirements. We agreed these were sufficient to cover the outstanding issues from the closure statement. It was agreed the recommendation had been addressed so far as reasonably practicable.

Recommendation 3

The intent of this recommendation is to ensure that there are sufficient resources available to Lincoln depot to manage the risks from track buckling.

Network Rail should review the Ellipse track maintenance workbank for the area covered by its Lincoln depot to ascertain the adequacy of resources to prepare the track for hot weather, taking account of the overall workload and the level of resources assessed as required in its 'Phase 2BC' reorganisation, and then implement a plan to manage any shortfall

ORR decision

6. Network Rail has independently reviewed the Elipse track maintenance workbank for the Lincoln Delivery Unit and concluded that resource levels are adequate, based on the small backlog of work and prioritisation and reprioritisation being done correctly.

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
- taken action to implement it.

Status: Implemented.

Previously reported to RAIB

8. On 6 October 2017 ORR reported that we considered Network Rail's initial response to recommendation 3 to be insufficient, as it did not address the key question posed by the recommendation, which was to review the adequacy of resources and to produce a plan to address any shortfall. We wrote to Network Rail

on 8 December 2016 requesting they resubmit their response. Network Rail provided a more detailed work plan to address recommendation 3 on 7 March 2017, which was due to be completed by the end of March 2017. We asked Network Rail to confirm completion.

Update

9. On 22 January 2019 Network Rail provided the following closure statement:

Closure Statement - Langworth.docx

10. Network Rail state in summary the following:

This statement applies to both Recommendations (3 & 4). An independent review of the Ellipse workbank has been conducted for Lincoln DU. This has found that Ellipse records are consistent with the asset condition and that reprioritisation is being carried out in accordance with the Ellipse Handbook. The review found instances where priority codes in ellipse were incorrect due to the wrong track category being applied. This has now been corrected. It should be noted that Lincoln DU has a very low level of ellipse backlog for Track and at 21/12/18 is at 0.2% of workbank. Therefore, as backlog is low and prioritisation and reprioritisation is being undertaken correctly, this indicates that the resource levels are adequate.

Previously reported to RAIB

Recommendation 1

The intent of this recommendation is for Network Rail to improve the reliability and accuracy of the stress free temperatures recorded in its database of rail stresses as a key element of its strategy for the prevention of track buckles.

Network Rail should:

a. review its guidance to maintainers on the circumstances in which:

- a re-measurement of stress free temperature; or
- the re-stressing of rails to a stress free temperature of 27oC, is considered appropriate.

The review should include an assessment of whether sufficient account is taken of factors not explicitly covered by the standard currently, such as the difficulty of maintaining stress in short sections of plain line between abutting switch toes or the nature of any maintenance work carried out, which can affect the buckling resistance of vulnerable track; and

b. develop a programme to deliver any actions arising from the review, including amendments to standards and early rebriefing of track maintenance staff, to meet the intent of the recommendation

ORR decision

1. Network Rail's initial response refers to a review of materials covering hot weather preparation and a review of the use of RailStress to manage records of Stress Free Temperature (SFT). These two pieces of work were due to be completed by 30 September 2016 and 30 November 2016 respectively, but Network Rail have not yet confirmed this.

2. As well as confirmation that both of the reviews have been completed and the outcomes, we've asked Network Rail to confirm if the update included publishing and briefing modified documents.

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, subject to completion of their time-bound plan

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

Information in support of ORR decision

4. On 2 November 2016 Network Rail provided the following initial response:

To satisfy this recommendation Network Rail will review all current hot weather management controls and guidance to identify any gaps in requirements. Where gaps are identified the existing controls will be revised and changes re-briefed.

The recommendation will be addressed through the following stages:

1. *Review materials covering hot weather preparation, including specific assessment of the content covering re-measurement of stress free temperature (SFT), re-stressing and factors which increase the difficulty of maintaining the required rail stress. Materials to be reviewed will include:*
   a. *Network Rail standards (NR/L2/TRK/2102, NR/L2/TRK/001, NR/L2/TRK/3011, NR/L3/TRK/3011, NR/L3/TRK/3012)*
   b. *Business Critical Rules controls (Track Buckle Bow Tie, Means of Control)*
   c. *Track Work Information sheets:*
      NR/GN/TRK/7001/TWI2G002, 2G017, 2P013
      NR/GN/TRK/7001/TWI3G026, 3G031, 3P013, 3P017
   d. *TME training course*
   e. *Other guidance material, e.g. Hot Weather Blue Book (ref 8000/1)*

   Target completion date: 30 Sept 2016

2. *Review the use of the RailStress to manage records of SFT and identify opportunities to improve the reliability and accuracy of these records.*

   Target completion date: 30 Nov 2016

3. *If necessary based on the findings from step 1 and 2, update, publish and brief modified documents to all those carrying out hot weather management.*

   Target completion date: 30 Sept 2017

The action plan is to include a period after completion of step 3 for production, review and sign-off of the closure statement.

Overall target completion date: 30 November 2017

Recommendation 3

The intent of this recommendation is to ensure that there are sufficient resources available to Lincoln depot to manage the risks from track buckling.

Network Rail should review the Ellipse track maintenance workbank for the area covered by its Lincoln depot to ascertain the adequacy of resources to prepare the

track for hot weather, taking account of the overall workload and the level of resources assessed as required in its 'Phase 2BC' reorganisation, and then implement a plan to manage any shortfall

ORR decision

5. We considered Network Rail's initial response to recommendation 3 to be insufficient, as it did not address the key question posed by the recommendation, which was to review the adequacy of resources and to produce a plan to address any shortfall. We wrote to Network Rail on 8 December 2016 requesting they resubmit their response, taking the following actions to answer the recommendation fully:

I. Define all of the activities the Track Maintenance function has to manage & deliver. This should be presented in the form as list of activities e.g. Inspections, reactive work orders, etc.
II. Each of these defined activities will be quantified with respect to work hours, equipment, resources (e.g. funding, manpower, capability etc.). The principle is to define the total work commitment for each of activity.
III. Complete a 'Gap Analysis' between demand and capability to identify shortfalls.
IV. Produce a robust plan to manage these shortfalls, ensuring that risks are appropriately controlled.
V. Put in place a means for monitoring the effectiveness of the management of Track Maintenance activities.

6. Network Rail provided a more detailed work plan to address update response to recommendations 3 and 4 on 7 March 2017, which were due to be completed by the end of March 2017. We have asked Network Rail to confirm completion.

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;
- but has not yet confirmed completion of the actions associated with the recommendation

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

Information in support of ORR decision

6. On 2 November 2016 Network Rail provided the following initial response: *Recommendations 3 and 4 will be addressed by the following action plan:*

Network Rail will undertake a review of the Ellipse track maintenance workbank for the area covered by the Lincoln depot, specifically considering items of work that have been cancelled or re-prioritised around switches and

crossings, and particularly those which have an impact on hot weather resilience i.e. painting of rails around switches and crossings, boxing in ballast, ballast drops, etc.

A selection of sites will be chosen, sites which have undergone recent intervention, such as tamping, lifting and packing etc. and a thorough check will be carried out to see that the SFT post work has been assessed and applied correctly.

A selection of switches and crossings in the Lincoln area will be inspected to validate that on-site conditions, specifically around ballast profiles, match the local teams understanding of its SFT and hot weather risk.

Additionally, the review will establish what briefing and learning has been undertaken on the Lincoln TME area and on East Midlands as a whole following this incident, including how the teams are now checking the effectiveness of the holding arrangements of clamp plates in breather switches.

The outcome of the review will be evaluated and will determine any further actions.

7. Network Rail provided a further update on 7 March 2017:
The RAM team undertook an independent review of Hot Weather Management on TME Lincoln area in August 2016.

Recommendations arising from that review have been progressed by the local team and I can advise that:

- *There is a strong correlation between the CRT register and hot weather critical items in Ellipse. There was a discrepancy of only 4 noted on 7th February. The TME is addressing the delta.*
- *The RA21 (ellipse hot weather) code is now widely used by the TME Lincoln team. This has been independently validated by the Route OTME.*
- *A local RACI guide has been created by the acting IME to confirm accountabilities in the section teams.*
- *In addition to the MST driven inspections in Ellipse, the TME is carrying out additional site based adjustment switch assurance. So far, 18 out of 78 have been completed, with the remainder committed to prior to the end of March.*

In addition

- *RA21 coding has been adopted across the EM Area and its use is being independently validated by the RAM team.*

- *All TME's on EM have confirmed that they plan to complete their hot weather prep before 1/5/17. Any remaining items will be recorded on the CRT register.*

Next steps

- *An off line validation of the adjustment switch register will be undertaken using track recording data, specifically reviewing the CWR / jointed rail interface on Lincoln TME area. This will then be cross checked with ellipse.*
- *A sample 'end to end' validation check will be undertaken by the RAM team on Lincoln TME area. This will validate on site conditions to those reported in the TEF and ultimately ellipse.*
- *All track inspectors on East Mids will receive a hot weather management brief.*
- *All TME's will undertake a 10% verification of their adjustment switches.*

Unless stated otherwise, these actions will be complete by 31/3/17.

Also, the RAM team have produced a graphical report which considers the key track quality indicators on Lincoln TME area over the last 42 months, which is attached to this email. It shows that in terms of management of these key outputs:

Wrong Side Failures

L2 twists

L2 cyclic top

Repeat L2 twists

Repeat L2 cyclic top faults

GTG and PTG

Broken rail and serious defects.

In summary PTG and GTG are no cause for concern (and are both better than the EM average), although have slightly deteriorated recently. This is attributed to the GNGE route 'bedding in' following its recent enhancement works. Serious rail defects are much lower than in previous years. CAT I, A and B instances (and repeats) remain in single figures. Backlog on Lincoln TME currently stands at 29. EM Area is on target for being removed from the ORR Escalator for L2 fault management.

I remain on plan to provide a full response to the recommendations by 31st March. I have a further review scheduled for next week with the IMDM, IME and RAM. I will advise following that review, if I need to request an extension.

Annex B