

Oliver Stewart
Senior Executive, RAIB Relationship and
Recommendation Handling

Telephone 020 7282 3864

E-mail oliver.stewart@orr.gsi.gov.uk

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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 near Gloucester, 15 October 2013

I write to provide an update¹ on the action taken in respect of recommendation 3 addressed to ORR in the above report, published on 9 October 2014.

The annex to this letter provides details of the action taken regarding this recommendation, the status of which is now '**Implemented**'. We do not propose to take any further action in respect of this recommendation, unless we become aware that any of the information provided becomes inaccurate, in which case I will write to you again.

We will publish this response on the ORR website on 12 April 2016.

Yours sincerely,

Oliver Stewart

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

1. All 7 recommendations were addressed to ORR when the report was published on 9 October 2014.
2. ORR wrote to RAIB on 7 October 2015 to report recommendation 1 as 'implemented'; recommendations 2, 3, 4 and 5 as 'implementation on-going'; and recommendations 6 and 7 as 'in-progress'.

Recommendation 3

The intent of the recommendation is to enable maintenance staff to know if their repair work has been sufficiently effective to correct the reported track geometry defect.

Network Rail should provide its maintenance staff with a method of measuring repairs to vertical track geometry which provides early confirmation that the repairs undertaken have been effective.

ORR decision

1. Network Rail has taken steps to enable maintenance staff to know if their repair work has been effective by reviewing current guidance and how it is briefed to staff. They have reviewed the relevant track standard (NR/L2/TRK/001 mod 11 Issue7 Inspections and minimum actions) and concluded it did not contain sufficient information on the corrective measures to manage cyclic top. Network Rail has therefore issued a letter of instruction (LOI) with information on how to assess the effectiveness of track repairs.
2. Network Rail also changed the section of the Track Work Information sheet (TWI) on how to manage cyclic top, covering how to conduct and ascertain the effectiveness of repairs, particularly concerning track on steel sleepers (that were in use at Gloucester). This information is supplemented by the existing more specific guidance for steel sleepers (TIW 2P035). The new TWIs were formally included in the March 2016 standards brief issued on 5 February 2016.
3. Network Rail provided clarification on 11 November 2015 that enabling tampers to measure cyclic top is not appropriate, as tamper geometry measurement is not compatible with UK Track Geometry Recording measurement, so would not yield the same quantified result. While Network Rail does not consider the technical and commercial differences to be insurmountable, the cost benefit ratio is low. Furthermore, re-deployment of the tamper after the repair's settlement period would be necessary to verify effectiveness of the repair. Network Rail consider such re-deployment to not be the best effective use of this finite resource when the existing level and void meter method is cost effective.
4. Having reviewed the response from Network Rail, ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations, it has:
 - taken the recommendation into consideration; and

- taken action to implement it.

Status: Implemented.

Previously reported to RAIB

5. On 7 October 2015 ORR reported to RAIB that it was content with the action Network Rail was taking in respect of recommendation 3 as it would enable maintenance staff to assess whether their cyclic top repair work has been successful. ORR was also seeking clarification from Network Rail as to whether they have considered the potential for their track geometry equipment fitted to their tamper fleet to be capable of locating and assessing repair effectiveness, and if so the need for guidance on this issue.

Update

8. On 8 February 2016 Network Rail provided a closure statement containing the following information:

Network Rail, Chief Track & Lineside Engineer (CTLE) has considered the intent of this recommendation by reviewing the following:-

1. *The adequacy of current guidance within Network Rail standards*
2. *The adequacy of the current track working information sheets (TWI) pertinent to cyclic top*

In summary, the standard, NR/L2/TRK/001 mod 11 Issue 7, Track geometry – Inspections and minimum actions; did not provide sufficient instruction & guidelines on the corrective measures to undertake to manage cyclic top.

Consequently a letter of Instruction NR/BS/LI/350 was issued on 01/06/2015. This LOI provided a specific additional clause that would address

5 Additional requirements to NR/L2/TRK/001/mod11 (section 6)

Do not remove the ESR applied for cyclic top faults until:

- Remedial action to correct the fault has been undertaken
- and**
- the site has been open to traffic for the minimum period in the table below
- and**
- an assessment on the effectiveness of the repairs has been undertaken (by an Authorised Person, in accordance with NR/L2/TRK/001/mod13):

Minimum period that an ESR remains in place after remedial action (to correct the cyclic top fault) has been completed

Track Category	Minimum Period
1A, 1, 2 and 3	7 days
4, 5 and 6	14 days

An assessment through the full extent of the cyclic top site (the recorded mileage plus a minimum of 110 yards before the start of the recorded mileage) of the effectiveness of all completed repairs can be undertaken using one of the following methods:

1. A new geometry recording by a train-mounted measuring system capable of capturing cyclic top.
2. A visual assessment in daylight, observing the track under dynamic loading, supplemented by the placement of void meters at the locations which have been repaired by manual maintenance and at any remaining dips.

This measure allows maintenance teams to confirm cyclic top faults have been removed by the repairs carried out and will reduce the occurrence of repeat faults

Th

The above changes have also been incorporated into an update of the Track Work Information Sheet TWI3T028 How to manage cyclic top. Further details are provided in this TWI concerning how to conduct and ascertain the effectiveness of repairs as well as special considerations concerning steel sleeper track. The updated TWI is attached for information and is programmed to be briefed out in the December 2015 Quarterly Governance & Standards Briefing.

Summary

The considered response of the Chief Engineer [Track & Lineside] is that the above provision for the recommendation is sufficiently addressed. The intent of this recommendation has been met and therefore considered CLOSED

The above changes have also been incorporated into an update of the Track Work Information Sheet TWI3T028 How to manage cyclic top. Further details are provided in this TWI concerning how to conduct and ascertain the effectiveness of repairs as well as special considerations concerning steel sleeper track. The updated TWI is attached for information and is programmed to be briefed out in the December 2015 Quarterly Governance & Standards Briefing.

Previously reported to RAIB on 7 October 2015 regarding recommendation 3

The intent of the recommendation is to enable maintenance staff to know if their repair work has been sufficiently effective to correct the reported track geometry defect.

Network Rail should provide its maintenance staff with a method of measuring repairs to vertical track geometry which provides early confirmation that the repairs undertaken have been effective.

Steps taken or being taken to address the recommendation

1. Network Rail wrote to ORR on 19 February 2015 and 12 June 2015 providing the following information:

This recommendation is closely linked to carrying out an effective repair (Rec 2b) and the requirement for assessing vertical geometry after work has been completed (Rec 2c).

If the Track Work Information sheet (for Rec 2b) option is chosen, this will provide guidance on how the fault can be measured, both before and after repairs have been undertaken to provide evidence of a (positive) change in the vertical geometry. This will contribute to the information gathered to consider the removal of a speed (Rec 2c).

As per 2b reference to LOI 350 & in conjunction with TWI 3T028 'How to Manage Cyclic Top'.

LOI 350

An assessment through the full extent of the cyclic top site (the recorded mileage plus a minimum of 110 yards before the start of the recorded mileage) of the effectiveness of all completed repairs can be undertaken using one of the following methods:

- 1. A new geometry recording by a train-mounted measuring system capable of capturing cyclic top.*
- 2. A visual assessment in daylight, observing the track under dynamic loading, supplemented by the placement of void meters at the locations which have been repaired by manual maintenance and at any remaining dips.*

This measure allows maintenance teams to confirm cyclic top faults have been removed by the repairs carried out and will reduce the occurrence of repeat faults

TWI 3T028

Monitoring

The effectiveness of the repair may not be measurable until the next run of the Track Recording Vehicle. Do not wait for this to happen. Watch the behaviour of the rolling stock and monitor the track closely until you are satisfied that the problem has been solved.

If a speed restriction has been imposed, remove it only when you are confident that the repairs are holding the track to the requirements laid down

in Network Rail Company Specifications. Remember – any speed restriction can only be raised by a person with the necessary competence to do so.

2. NR stated that timescale for implementation was by 30 November 2015.

ORR decision

3. Noting that Network Rail's response to this recommendation is closely linked to recommendation 2, ORR is content with the reported progress and that Network Rail's proposed actions has the capability to enable maintenance staff to assess whether their repair work has been successful.

4. We have however sought clarification from Network Rail as to whether they have considered the potential for their track geometry equipment fitted to their tamper fleet is capable of locating and assessing repair effectiveness, and if so the need for guidance on this issue.

5. ORR, in reviewing the information received from Network Rail has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it has:

- taken the recommendation into consideration; and
- is taking action to implement it by 30 November 2015.

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