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16 March 2021

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

Dear Andrew,

RAIB Report: Runaway of a maintenance train near Markinch, Fife on 17 October 2017

I write to provide an update¹ on the action taken in respect of recommendation 2 addressed to ORR in the above report, published on 11 January 2018.

The annex to this letter provides details of actions taken in response to the recommendation and the status decided by ORR. The status of recommendation 2 is **'Implemented'**.

We do not propose to take any further action in respect of the recommendation, 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 17 March 2021.

Yours sincerely,



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 prevent runaway of other short formation trains following collisions with objects or debris on the track.

Network Rail should assess the risk of runaway on other short formation trains that operate on its infrastructure, such as On-Track Machines, as a result of a total loss of the air braking systems due to impact from objects and debris that might reasonably be encountered on the track. It should implement any necessary measures to mitigate the risk of runaway. This recommendation may also apply to other infrastructure managers and railway undertakings who own and/or operate similar short formation trains.

ORR decision

1. Network Rail have carried out an assessment of the risk of runaway of other short formation trains, made up of six vehicles or fewer. The assessment identified no fleets requiring further mitigation.
2. Network Rail provided the closure statement for this recommendation in May 2019. However in order to reach a conclusion that the risk assessment methodology used by Network Rail was suitable and sufficient it was necessary for us to exchange further correspondence and discuss progress at regular liaison meetings.
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
 - has taken action to implement it

Status: Implemented.

Previously reported to RAIB

4. On 10 January 2019 ORR reported that we had asked Network Rail to explain in more detail the process that informed the conclusion to exclude vehicles from the requirements of recommendation 2. A meeting to discuss this, along with the issues identified around recommendation 1 would be arranged. We would also discuss with Network Rail how any measures taken in relation to this recommendation will apply to other contractors operating similar MPV-type rolling stock or other similar equipment operating on Network Rail controlled infrastructure.

Update

5. On 14 May 2019 Network Rail provided the closure statement and risk assessment documents:



6. Network Rail state in summary the following:

Risk reviews have been undertaken for all Network Rail trains deemed to run in short formations, that being any consist of 6 or less vehicles. The risk reviews considered if any braking systems on other NR On-track Machines were vulnerable to the same system failure as that experienced at Markinch. Three exclusion criteria were identified (i.e. reasons which the machine would not present a risk):

a) The distributor release is not in a prone position on the underframe. This is to determine if the distributor release is in a position which could potentially expose it to unintended actuation i.e. translating laterally across the underside of the vehicle.

b) It is locomotive hauled in mainline operation Therefore the consist would always have one vehicle with a distributor which is not underframe mounted and would not suffer a total loss of braking)

c) It operates on the mainline in a fixed formation with more than six vehicles in the consist, therefore not a short formation and unlikely for all distributors to be pulled by a single tree strike.

The risk review was led by the Principal Engineering Manager, Principal Engineering Team, Supply Chain Operations. Information of specific fleets was provided by the responsible Fleet Engineering Managers. The fleet review commenced in late February and was quickly able to exclude the majority of NR vehicles. A small number of vehicles (specifically Ballast tampers and regulators) required further evidence to fully exclude them. This was centred around physical design, location and protection of the distributor release mechanisms on these vehicles. It is believed by the Principal Engineering Manager the combination of these factors affords sufficient protection for them not to be considered at risk. The recommendation is therefore closed.

Previously reported to RAIB

Recommendation 2

The intent of this recommendation is to prevent runaway of other short formation trains following collisions with objects or debris on the track.

Network Rail should assess the risk of runaway on other short formation trains that operate on its infrastructure, such as On-Track Machines, as a result of a total loss of the air braking systems due to impact from objects and debris that might reasonably be encountered on the track. It should implement any necessary measures to mitigate the risk of runaway. This recommendation may also apply to other infrastructure managers and railway undertakings who own and/or operate similar short formation trains.

ORR decision

1. We have asked Network Rail to explain in more detail the process that informed the conclusion to exclude vehicles from the requirements of recommendation 2. A meeting to discuss this, along with the issues identified around recommendation 1 will be arranged.
2. We will also discuss with Network Rail how any measures taken in relation to this recommendation will apply to other contractors operating similar MPV-type rolling stock or other similar equipment operating on Network Rail controlled infrastructure.
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, but have not yet provided a full explanation for the actions being taken and a time-bound plan for the project.

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

Information in support of ORR decision

4. On 11 September 2018 provided the following initial response:

Risk reviews have been undertaken for all Network Rail trains deemed to run in short formations, that being any consist of 6 or less vehicles.

The risk reviews considered if any braking systems on other NR On-track Machines were vulnerable to the same system failure as that experienced at Markinch.

Three exclusion criteria were identified (i.e. reasons which the machine would not present a risk):

 - a) *The distributor release is not in a prone position on the underframe*

This is to determine if the distributor release is in a position which could potentially expose it to unintended actuation i.e. translating laterally across the underside of the vehicle.

b) It is locomotive hauled in mainline operation

Therefore the consist would always have one vehicle with a distributor which is not underframe mounted and would not suffer a total loss of braking)

c) It operates on the mainline in a fixed formation with more than six vehicles in the consist

Therefore not a short formation and unlikely for all distributors to be pulled by a single tree strike.

The risk review was led by the Principal Engineering Manager, Principal Engineering Team, Supply Chain Operations.

Information of specific fleets was provided by the responsible Fleet Engineering Managers.

The fleet review commenced in late February and was quickly able to exclude the majority of NR vehicles. A small number of vehicles (specifically Ballast tampers and regulators) required further evidence to fully exclude them. This was centred around physical design, location and protection of the distributor release mechanisms on these vehicles. It is believed by the Principal Engineering Manager the combination of these factors affords sufficient protection for them not to be considered at risk.

The recommendation is therefore closed.