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4 December 2020

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

Dear Andrew,

RAIB Report: Near-miss at Llandovery level crossing, Carmarthenshire on 6 June 2013

I write to provide an update[1] on the action taken in respect of recommendation 5 addressed to ORR in the above report, published on 15 May 2014.

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 5 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 7 December 2020.

Yours sincerely,

Oliver Stewart

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

Recommendation 5

The intent of this recommendation is to reduce the risk of error at train crew operated level crossings by providing positive indications of the status of those crossings.

Network Rail should review the current arrangements for providing an indication to the train driver of the status of the crossing at Llandovery. This should include consideration of the practicability of providing an active indication when the crossing is still open to road traffic (e.g. a flashing red light). This review should then be extended to other train crew operated level crossings of a similar design.

ORR decision

1. Network Rail reviewed the existing arrangements for indicating to train drivers the status of Llandovery level crossing. Network Rail considered providing a red flashing light at Llandovery and at all train crew operated crossings, but found it was not suitable. At Llandovery, TPWS will be fitted to the level crossing STOP boards as part of its planned upgrade to reduce the likelihood of a SPAD at this crossing.

2. The upgrades at Llandovery were delayed from an original target date of December 2019, they are now underway and will be completed by the end of December 2020.

3. Network Rail will need to consider if any other train crew operated crossings would need the addition of TPWS to prevent SPADs when reviewing arrangements at them.

4. Network Rail had initially proposed taking no action at Llandovery level crossing, but we did not think the decision was justified, so were not prepared to report to RAIB a status of ‘non-implementation’ for the recommendation.

5. 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

6. On 14 August 2014, Network Rail provided the following information:

Network Rail will review the current arrangements for providing an indication to the train driver of the status of the crossing at Llandovery. This will include the consideration of providing an active indication of when Landovery crossing is still open to road traffic. This review will involve the necessary stakeholders including the Operations Risk Advisor (ORA), technical experts, Asset Management, the ORR and

the wider Train Operating Companies (TOC) and Freight Operating Companies (FOG) community to ensure all risks are assessed and the appropriate solution is proposed. The review will be complete by 31 December 2014 and will propose recommendations for implementation. A further assessment of the completion date will be undertaken once the recommendations have been made.

In parallel with the work on Landovery crossing, Network Rail will undertake an exercise to ascertain the likelihood of similar risks arising at other TMOB sites where poor sighting of the Stop Board and flashing white light indication contribute to the risk of a train passing these without authority. The assessment of Llandovery will input into a Cost Benefit Analysis of any proposed mitigations on the estate of fourteen Train Crew Operated Barrier (TMOB) crossings. The Cost Benefit Analysis work will be complete by 30 March 2015. The outcome of this Cost Benefit Analysis will then determine any further action, and closure date for this work will then be determined if action is deemed necessary.

Timescales: Route: Review to be completed by 31 December 2014
National: Review to be completed by 30 March 2015
Implementation date to be determined

7. On 26 September 2014, ORR wrote to Network Rail requesting a plan for any further actions with timescales for completion. On 16 February 2015, Network Rail provided an update stating that:

The national action plan has not been implemented due to resources on higher priority Business Critical Rules Programme work, some of which will benefit the action plan. In particular, the critical controls for design feasibility will cover the opportunities that may arise for improving the mitigations for train stopping positions close to level crossings, in line with the requirements published in NB 123. It is now proposed to implement action in conjunction with revised governance for level crossing principles within Network Rail, and start this from April2016, with the aim of establishing any feasible solutions for train crew operated crossings by end of August 2016. Delaying this work is not seen as having a measurable impact on safety of train crew operated barriers.

Timescale: 31 August 2016

Update

8. Following a timescale extension, Network Rail provided the following closure statement and supporting evidence on 20 January 2017:


RAIB Llandovery Rec 5 Closure Support Do


RAIB Llandovery Rec 5 signed closure.pdf


R664 IDM Minutes Final Draft.pptx

9. Network Rail state the following in summary:

Network Rail has considered Recommendation Number 5 and concluded it is not appropriate to change the default arrangements of controls and

indications provided at Trainman Operated Manual Barrier level crossings (TMOB).

The reasons for this conclusion are:
1. Network Rail has concluded with RSSB to examine the risk associated with DCI indications as used on other types of level crossings and confirmed that with this control the risk is controlled so far as is reasonably practicable. See RSSB presentation dated 14 August 2015.
2. Network Rail has reviewed the requirements and arrangements for meaning and presentation of indications to drivers at TMOB crossings. After careful consideration of these and alternatives it is concluded that there is no measurable benefit likely to be derived from altering the present default arrangements.
3. Whilst Network Rail recognises that particular site circumstances may warrant additional measures (as in the case of the site at Llandovery), the measures to be adopted should not include addition of indications other than the flashing white light.

10. As part of the Level Crossing Order process for Llandovery level crossing, ORR discussed the recommendation with Network Rail. The actions taken by Network Rail are considered appropriate to implement the recommendation. The outcome of the review is summarized as follows:

Llandovery is a four barrier Manually Controlled Train crew operated Barrier Crossing – (MCB-TOB) supervised from Pantyffynnon Signal Box. The project comprises of the renewal of MCB-TOB utilising modern equipment.

Llandovery MCB-TOB is located on the Central Wales line which runs from Llanelli in the south to Craven Arms in the north where it joins the railway from Hereford to Shrewsbury. Llandovery MCB-TOB is located on ELR: VOT at 29miles 26ch. The Central Wales Line is a single track 'No Signaller Token Remote' (NSTR) area with remote loops at Pantyffynnon, Llandeilo, Llandovery, Llanwrtyd, Llandrindod Wells and Knighton. The maximum line speed is 45mph. There is a permanent speed restriction of 15mph over Llandovery area.

Lineside equipment is provided to enable the Train Driver to initiate the level crossing sequence. On approach to the level crossing, a reflective stop board with instructions to train drivers to 'operate the level crossing and obtain Driver's white light' is provided. On Down approach to Llandovery, where there isn't a platform, a driver cab wire is positioned at cab height adjacent to the respective stop board. An additional Drivers control unit is also provided. A Driver's control unit is provided for both Up Direction moves associated with Platforms 2 and 1. When the barriers are correctly lowered, a white light on the stop board will flash to provide a proceed indication to the driver. The barriers will automatically raise once the train has traversed the crossing. An elevated barrier up (BU) indicator exists approximately ¼ mile on the exit side of the crossing. When illuminated this indicator displays the letters 'BU' to signify that the barriers have risen behind a train which has passed clear of the crossing.

In addition to the level crossing stop boards, there are stop boards with point TPWS indicators close to the Block section limit points. Failure of the white lights, crossing

equipment or 'BU' indicator is reported to the Pantyffynnon signaller by the Train Driver or Guard.

Current operation:

Down direction approach: On approach to the crossing, the train drivers will stop at the level crossing stop board and operate either the drivers cab wire or press and hold the lower button in the drivers control unit to initiate the barrier lower sequence. Upon receiving a flashing white light on the stop board the drivers will pass the stop board and proceed over the crossing. The barriers will automatically raise behind the train. Upon reaching the platform 1, the train drivers exchange tokens for the next section and upon observing Barriers Up indication and the indications on the TPWS Stop boards, will proceed onto the next block section. Instructions to the drivers are that if they don't get Barriers Up indication, they are required to raise the barriers by either operating the raise button in the Drivers control unit or do it manually.

Up direction approach: On reaching the platform, the train drivers will stop at the level crossing stop board. When the train is ready to leave, the train driver will exchange the tokens and obtain the token for the next section and will then press and hold the lower button in the drivers control unit to initiate the barrier lower sequence. Upon receiving the flashing white light on the level crossing stop board, the train drivers will depart from the platform if they are in possession of section token. The barriers will raise behind the train. Train drivers are required to observe the TPWS Stop board indications and follow the instructions thereby to continue their journey.

Changes to current operation after renewal of the crossing:

i) *Barrier Up indicators will be recovered. BU indicators are normally not lit and in the event of a failure of the indicator, there is a fair chance of train drivers continuing their journey with the barriers still left lowered behind a train. Instead a crossing reset timer will be provided to reset the crossing and raise the barriers automatically behind a train once the train has cleared the crossing.*

ii) *Drivers control unit will not have a raise button. With the removal of BU indicators and removal of driver's responsibility to make sure that the barriers have raised behind the train, the purpose of this button is redundant. A local control unit (LCU) with Lower, Raise and Stop functionality will be provided for use in case of failures and other engineering works.*

iii) *Train Stop TPWS equipment (TSS) will be fitted for the Level crossing stop boards. This is in line with RAIB recommendation to NR to improve the train control measures so that a repeat of SPAD incident does not happen again due to operator's error. The TPWS is to prevent a train passing the level crossing stop board without initiating the crossing lower sequence.*

Other changes:

i) *A pedestrian Redman standing signal will be provided for Platform 2 exit. On all other corners the pedestrian approach is straight on facing the RTLs. Audible warning on near side RTLs will be renewed.*
ii) *RTL on the petrol station corner – ZO corner will be of Narrow profile as authorised by Welsh government.*
iii) *A hatched Yellow box road marking will be provided over the crossing to minimise the risk of vehicles stopping over the crossing and associated 'Keep crossing clear' road signs will be fitted on the RTLs.*
iv) *Road markings will be renewed to modern standards as agreed with local authority and are shown on the Ground plan.*

Non compliances to Llandovery RAIB recommendations:

The following 2 RAIB recommendations are not being addressed.

i) *Provision of active indication to train drivers regarding the state of level crossing by using a flashing Red indicator on a DCI: The Stop Board provides an absolute limit of movement authority until such time as the instructions on the board have been followed. As such, the flashing red light is not a limit of movement authority but an indicator which if provided will devalue the authority of a Stop board which got the same status similar to that of a Stop signal displaying Red.*
ii) *Combining the stop boards for the level crossing and the block limit point TPWS stop boards: This applies to platform 2 approach and will adversely affect the operational flexibility of the loop length when operating longer trains.*

Previously reported to RAIB

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Steps taken or being taken to address the recommendation

1. On 14 August 2014, Network Rail provided the following information:

Network Rail will review the current arrangements for providing an indication to the train driver of the status of the crossing at Llandovery. This will include the consideration of providing an active indication of when Landovery crossing is still open to road traffic. This review will involve the necessary stakeholders including the Operations Risk Advisor (ORA), technical experts, Asset Management, the ORR and the wider Train Operating Companies (TOC) and Freight Operating Companies (FOG) community to ensure all risks are assessed and the appropriate solution is proposed. The review will be complete by 31 December 2014 and will propose recommendations for implementation. A further assessment of the completion date will be undertaken once the recommendations have been made.

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2. On 26 September 2014, ORR wrote to Network Rail requesting a plan for any further actions with timescales for completion. On 16 February 2015, Network Rail provided an update stating that:

The national action plan has not been implemented due to resources on higher priority Business Critical Rules Programme work, some of which will benefit the action plan. In particular, the critical controls for design feasibility will cover the opportunities that may arise for improving the mitigations for train stopping positions

close to level crossings, in line with the requirements published in NB 123. It is now proposed to implement action in conjunction with revised governance for level crossing principles within Network Rail, and start this from April2016, with the aim of establishing any feasible solutions for train crew operated crossings by end of

August 2016. Delaying this work is not seen as having a measurable impact on safety of train crew operated barriers.

Timescale: 31 August 2016

ORR decision

3. ORR, having reviewed the responses from Network Rail has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations it has:

- taken the recommendation into consideration; and
- is taking action to implement it with completion by 31 August 2016

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