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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

Train passed over Lydney level crossing with crossing barriers raised

I write to report¹ on the consideration given and action taken in respect of the recommendations addressed to ORR in the above report, published on 15 December 2011.

The annex to this letter provides details of the consideration given/action taken in respect of all three recommendations where recommendation 1 has been implemented and recommendations 2 and 3 are in progress.

We do not propose to take any further action in respect of recommendation 1 unless we become aware of an inaccuracy in which case I will write to you again. We expect to update you on recommendations 2 and 3 by the end of February 2013.

We expect to publish this response on the ORR website on 3 December 2012

Yours Sincerely

Chris O'Doherty



INVESTOR IN PEOPLE

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

Initial consideration by ORR

1. All three recommendations from the report were addressed to ORR when the report was published on 15 December 2011.
2. After considering the report and recommendations ORR passed all three recommendations to Network Rail asking it to consider and where appropriate act upon them and advise ORR of its conclusions. The consideration given to each recommendation is included below.

Recommendation 1

This recommendation is intended to provide crossing and signal box instructions and training material which reflect equipment, routine operating practices and procedures required during degraded working.

Network Rail should modify procedures so that:

- a. routine reviews and updating of signal and crossing box instructions include verification, by engineering staff, that the instructions are compatible with the equipment provided;
- b. there is clear guidance on the information to be contained in all box instructions;
- c. training material is reviewed, and updated as necessary, concurrently with the associated box instructions; and
- d. reviews of box instructions and associated training material should be subject to checking, at least on a sample basis.

Actions taken or being taken to address the recommendation

3. In its response of 22 March 2012 Network Rail informed ORR it will *carry out a review to consider modifying its procedures:*

- *so that when signal and crossing box instructions are routinely reviewed or updated, the relevant engineering staff within the Route are consulted to confirm that any key/unique features in relation to operation of the equipment have been captured.*
- *to require that there is clear guidance on the information to be contained within signal and crossing box instructions; the relevant training material is reviewed whenever changes are made; and checks of box instructions and training material are conducted on a sample basis.*

The review is to be started in March 2012 by the Operations Principles and Standards Team with the intention that any draft proposals for change will be complete by the end of April 2012 - to take to the National Operations Group to consider relevant changes to the Operations Manual. These changes would be put in place as soon as practicable afterwards, with the whole work stream complete by December 2012 with the reissue of the various documents.

4. ORR wrote to Network Rail on 1 May 2012 requesting sight of the proposals and the relevant changes to the Operations Manual. A further response from Network Rail was received on 16 August 2012

A review of Operations Manual procedure NR/L3/OCS/041/2-03 – Preparation and Distribution of Local Instructions has taken place and the following updates made:

- *New section 'Changes to Operating Equipment at Signalling Locations'. When changes occur to local operating equipment the requirement is clarified regarding the need to amend local instructions and training material if appropriate.*
- *RACI chart updated to include responsibilities of the Operations Manager to liaise with the Route Asset Engineer following any updates to Operating Equipment.*
- *Section 8 – The requirement for Operations Manager to check local operating instructions has been changed so that the check will be undertaken on an annual basis.*
- *With regards to providing clear guidance on the information to be contained within signal and crossing box instructions, Network Operations have reviewed this and attempted several times to compile such a list without success. It is the opinion of Network Operations that trying to provide a generic list for what is a local instruction, is a contradiction to the principle of local instructions.*

The approval of S&SD Executive Committee on 03/09/12 is awaited to publish the updated Operations Manual procedure in December 2012, during the Standards Moratorium.

ORR decision

5. ORR in reviewing the responses and considering the documents provided by Network Rail concluded that in accordance with the Railway (Accident Investigation and Reporting) Regulations 2005, it has:

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

ORR does not therefore propose to take any further action unless we become aware that the information reported above is inaccurate in which case we will write to RAIB again

Status: *Implemented*

Recommendation 2

The intent of this recommendation is that, when accepting documentary evidence that an individual (such as a crossing keeper) has dealt with particular situations in a competent manner, a sample of these situations should be reviewed to ensure that the individual actually acted appropriately.

Network Rail should review and, if necessary, amend and/or augment existing processes so that, when documentary evidence is used to verify safety-critical competencies of operations staff, appropriate evidence (such as voice recordings) is examined for at least a proportion of the events covered by these documents.

Actions taken or being taken to address the recommendation

6. In its response of 22 March 2012 Network Rail informed ORR that

The new Signaller competence process now incorporates the assessment of safety critical communication rather than it being a separate operations manual procedure. The new process is now risk based, therefore the assessor is expected to assess specific communications rather than pick any safety critical communication, so, in the case of a location like Lydney, the assessor has to listen to sufficient safety critical communications concerning the operation of the level crossing to deem competence.

ORR decision

7. ORR in reviewing the response from Network Rail has concluded that the response only addresses the issue of safety critical communications but the recommendation asks that Network Rail address all existing competencies.

Status: In progress ORR will update RAIB by 28 February 2013.

Recommendation 3

The intent of this recommendation is that, for both normal and degraded operating modes, signals protecting new and upgraded MCB crossings should return to danger if the crossing barriers are raised significantly above the fully lowered position.

Network Rail should modify its standards and design practice so that signals protecting new MCB level crossings, and signals protecting MCB crossings upgraded in future, always show a stop aspect when the barriers are raised significantly above the fully lowered position.

Actions taken or being taken to address the recommendation

8. In its response of 22 March 2012 Network Rail informed ORR:

This recommendation is rejected on the basis that all new MCB level crossings are required to be fitted with approach locking controls and therefore the amendment of standards is not considered necessary.

For a conventional MCB, barriers cannot be raised by the signaller (or crossing keeper) unless the signals are at red and free of approach locking. Signals over the level crossings cannot clear unless the detection proves the barriers down, but this control is usually overridden once the signals have cleared to prevent CAT B SPADs.

Lydney, as it was at the time of the incident, was a unique site. The crossing keeper - who had no direct control of the protecting signals other than by an emergency replacement switch, - mistakenly manually pumped up the barriers as a train was approaching. Where normal controls exist, the signaller (or crossing keeper) would not have been able to raise the barriers by his level crossing controls unless the approach locking on the signals had timed out.

There is no record of similar incidents on conventional MCB installations elsewhere. Lydney is being upgraded to a conventional MCB as part of the Newport Area Signalling Renewal phase 2 project during Spring 2012, that will prevent the crossing keeper making a similar error in the future.

9. ORR wrote to Network Rail on 1 May 2012 requesting Network Rail give the recommendation further thought and suggesting that to achieve the feature recommended by RAIB i.e. 'signals should return to danger if the crossing barriers are raised significantly above the lowered position' we would expect there to be a switch, probably at the 45 degree point on barrier movement and that this could be introduced without too much difficulty on new designs.

10. Network Rail provided further information 6 September 2012:

Further significant consultation amongst the signal engineers on this recommendation has taken place, however Network Rail still do not support it. The installation at Lydney was a one-off, and the deficiencies have now been corrected. This means that the circumstances of the Lydney incident cannot be repeated there, and other installations work with more comprehensive controls.

A control as suggested was rejected by Network Rail because of the possibility of SPADs. The recommended feature suggested (of continuously proving the barriers down in the signals) is believed to have been in some very early crossings, but was quickly changed to the present "detection at time of signal clearance" - after experience of the public lifting the barriers sufficient to break detection and put signals back to red. "Detection at time of signal clearance" has not caused any issues at conventionally wired crossings that we are aware of, but in that time it will have saved an unknown number of SPAD's.

As regards saying that a control should be applied when the barrier is lifted substantially, the signal engineers have agreed that there is no justification for this. The Lydney installation was unique, and the weakness that made it unique has now been corrected. Looking back in history, the occurrences of a 'Lydney' type error have never before led to a similar incident at similar sites. The consensus agreement is that there is no justification for such a control.

ORR decision

11. ORR is considering Network Rail's position regarding non implementation and will meet with Network Rail to consider the issue. We will update RAIB in February 2013.

Status: *In progress* – ORR to update RAIB by 28 February 2013