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14 February 2013

Ms Carolyn Griffiths
Chief Inspector of Rail Accidents
Rail Accident Investigation Branch
Cullen House
Berkshire Copse Rd
Aldershot
Hampshire GU11 2HP

Dear Carolyn,

Fatal accident at Mexico footpath crossing (near Penzance), 3 October 2011

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 20 June 2012.

The annex to this letter provides details of the consideration given/action taken in respect of each recommendation where:

- Recommendations 1, 4 and 5 have been implemented². We therefore do not propose to take any further action in respect of these recommendations unless we become aware that any of the information provided becomes inaccurate, in which case we will write to you again; and
- Recommendation 2 and 3 are in the process of being implemented³. We expect to update you on progress by July 2013.

We expect to publish this response on the ORR website on 8 March 2013.

Yours Sincerely

Chris O'Doherty

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

² In accordance with Regulation 12(2)(b)(i)

³ In accordance with Regulation 12(2)(b)(ii)

Initial Consideration by ORR

1. All 5 recommendations contained in the report were addressed to ORR when RAIB published its report on 20 June 2012. After considering the report / recommendations, on 17 August 2012, ORR passed
 - Recommendations 1, 3 and 5 to Network Rail;
 - Recommendation 2 to RSSB; and
 - Recommendation 4 to First Great Western Ltd; asking them to consider and where appropriate act upon them.
2. Details of consideration given and any action taken, in respect of these recommendations are provided below.

Recommendation 1

The intent of this recommendation is for Network Rail to improve safety for all users at Mexico footpath crossing by considering whether improvements can be made to sighting for pedestrians at the crossing and also by considering whether it is possible to move the whistle boards closer to the crossing, taking account of factors that affect audibility (such as local topography) and any other effects that might arise from changing the location of the whistle boards.

Taking account of the deficiency in sighting time for vulnerable users, Network Rail should:

- a. Consider whether improvements can be made to sighting towards the east for pedestrians on the south side of Mexico footpath crossing (paragraph 128a).
- b. Determine the optimum position of the whistle boards at Mexico footpath crossing and make any required adjustments. The assessment should identify a better location for the boards that will improve the audibility of train horns at the crossing, taking account of the need to provide adequate warning for all users and including consideration of any local factors which may have a bearing on the decision (paragraphs 129a, 129b and 129c).

Details of steps taken or being taken to implement the recommendation

3. Network Rail in its initial response on 6 September 2012 advised that:

Part a)

Consideration has been given as to whether improvements can be made to sighting towards the east for pedestrians on the south side of Mexico footpath crossing. Neither the signal nor the location cases completely obscure train fronts, and they only partially obscure them for a maximum of one or two seconds. The view is that the low level of risk caused does not justify the likely £50-100k cost of mitigation.

Signalling renewal is expected within ten years and it is considered that it will be more cost-effective for these to be dealt with by that project. It should be noted that from the point at which the train fronts become completely visible, sighting time exceeds traverse time and therefore Mexico is already compliant as a passive crossing.

Part b)

Consideration has been given to moving the whistle board positions further in, but it would bring them closer to residential areas and the view is that it would be more likely to attract public complaints.

Regular users will be accustomed to the current warning time and shortening it could become a risk in itself.

The relationship with nearby speed signs and signals has also been considered and it is considered that moving the whistle boards could complicate this.

Train horns are considered audible under normal conditions and, as at any similar location where changeable conditions can reasonably be expected, the public need to take extra care to check that no train is approaching. The ability to distinguish readily that the horn is coming from a train is considered a much more relevant factor, especially at sites such as this.

ORR Decision

4. After reviewing information received from Network Rail, 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.

ORR does not propose to take any further action in relation to this recommendation unless we become aware of an inaccuracy in what we have reported, in which case we will write again to RAIB.

Status: *Implemented*

Recommendation 2

The intent of this recommendation is for RSSB to consider what additional data needs to be captured within SMIS to allow a full evaluation of risk at level crossings and to use it, together with any other relevant data, to enhance its current processes for reviewing the effect of the change made in April 2007 to sounding only the low tone of the train horn for passive crossings between 07:00 hours and 23:00 hours.

RSSB should:

- a. identify any additional data that should be captured within SMIS from accidents and near-miss incidents to inform future safety decision-making

about level crossings and make the necessary arrangements for that data to be collected by duty holders; and

b. using the data obtained from implementing part a of this recommendation and any further intelligence contained within SMIS or other sources, enhance its current approach to reviewing the impact of the change to sounding only the low tone of the warning horn for whistle boards at level crossings between 07:00 hours and 23:00 hours and take actions, if appropriate.

Details of steps taken or being taken to implement the recommendation

5. RSSB in its initial response on 5 October 2012 advised that:

Part a

The main data in relation to this recommendation that does not currently get captured in SMIS is whether or not a specific level crossing is fitted with a whistle board.

Discussions with Network Rail indicate that they are improving the asset information for each level crossing in the context of the All Level Crossings Risk Model (ALCRM) which could be made available to RSSB.

RSSB will therefore work with Network Rail to ensure it is possible to link the SMIS level crossing locations with the location descriptions in the ALCRM such that SMIS incident data can be linked to specific locations and asset features.

It is anticipated that this work will be completed by June 2013.

Part b

Once the linkage between SMIS and ALCRM locations has been made it will be possible to monitor near miss and accident rates at level crossings with and without whistle boards to determine if there is a difference in the rates.

If after a period of monitoring long enough to get a reasonable data sample (18 months to 2 years) there appears to be a significant difference in the incident rates for level crossings with whistle boards compared to those without, a further review of the train horns policy could be initiated.

It will not be possible to do this assessment retrospectively for the data before the train horns rule change in 2007 because of the availability of reliable asset data going back that far.

6. ORR in reviewing the information received from RSSB concluded that RSSB's response did not address the recommendation. ORR therefore wrote to RSSB, on 12 September 2012, asking it to reconsider the recommendation and provide a further response.

7. RSSB provided further information on 21 December 2012 advising that:

As RSSB indicated in its response dated 5 October 2012, Network Rail is carrying out census work on the level crossings with the view to giving each level crossing a unique identification code which will enable SMIS locations and location information in the ALCRM to be linked. Once this is done RSSB will be able to monitor near miss rates at the level crossings with and without

whistle boards on an on-going basis. The whistle board status will only reflect the position at the time of each census.

Analysis of existing SMIS data suggests that while the overall level of near miss reporting has been steadily increasing since 2002, the proportion of the total near miss reports occurring on the level crossings most likely to be fitted with whistle boards has remained fairly consistent.

RSSB also know that the number of pedestrian fatalities at level crossings has fallen from 10 in 2008/09 to 4 in 2011/12. RSSB feel that it is very unlikely that there has been a significant increase in either the near misses or the risk at level crossings with whistle boards since 2007.

However, once Network Rail has completed the level crossing census work RSSB should be able to assess the near miss data for level crossings with and without whistle boards for SMIS records going back to 2002, but only on the basis of the current census data. The results will therefore only be approximate as RSSB will not know if whistle boards have been added or removed prior to the census.

RSSB anticipate that the analysis will be possible by the end of March 2013 depending on when the Network Rail census data is available.

ORR Decision

8. After reviewing information received from Network Rail, 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.

Status: *In progress* - ORR to update RAIB by end of June 2013

Recommendation 3

The intent of this recommendation is for Network Rail to undertake a project to develop and implement a national approach to the location and marking of decision points and the measuring of sighting distances at level crossings. This work should be expedited and undertaken as a discrete exercise rather than as part of the three-yearly crossing risk assessment cycle and take account of the emerging findings from RSSB research project T-984 'Research into the causes of pedestrian accidents at level crossings and potential solutions' where relevant.

Network Rail, in conjunction with RSSB where appropriate, should undertake a project to develop a standard national approach to:

- identifying the optimum decision point at each footpath and user worked crossing used by pedestrians;
- marking and signing the optimum decision point at each crossing;

- using that decision point in estimates of sighting distance at footpath and other crossings; and
- briefing staff involved in crossing risk assessment with regard to the approach.

When addressing issues in relation to the marking of decision points, Network Rail should liaise with RSSB on emerging findings from research project T984 'Research into the causes of pedestrian accidents at level crossings and potential solutions', and give consideration to the need to draw upon relevant elements of that research project to inform the development of the national approach. In this context RSSB should prioritise those elements of research project T984 that deal specifically with the marking of decision points, so that they are completed at an early stage in the programme. Once the approach has been developed, Network Rail should implement a programme to review and modify crossings accordingly (paragraphs 130a and 130b).

Details of steps taken or being taken to implement the recommendation

9. Network Rail in its initial response on 6 September 2012 advised that:

The Level Crossing Team are working closely with Rail Safety and Standards Board and members of the team are part of the steering group for Project T984. Initial findings relating specifically to decision points are expected by April 2013.

The scope of the research also involves investigation into both the concept and first principles of decision points. The project will inform future plans, guidance and standards.

The initial report in April 2013 will shape the plan of action the Level Crossing team will take. The team will update and provide an action plan and relevant timescales depending on the interim results in April 2013.

ORR Decision

10. After reviewing information received from Network Rail, 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.

Status: *In progress* - ORR to update RAIB by end of June 2013

Recommendation 4

The intent of this recommendation is for First Great Western to propose changes to Railway Group Standards so that an objective train horn testing regime is mandated after a train has been involved in certain types of accident or incident.

First Great Western should make a proposal to RSSB to modify relevant Railway Group Standards to mandate the requirement to test train horns in an objective manner when a train has been involved in any accident or incident involving circumstances where the sounding of the train horn was either required by the rule book or employed by the driver during the event.

Details of steps taken or being taken to implement the recommendation

11. First Great Western in its initial response on 26 September 2012 advised that:

A proposal for a standards change was submitted to RSSB on 19th September [2012]. This proposal was made under paragraph 5.2 of the Railway Group Standards Code. The proposal requests the introduction of an additional Section 2.7 to Group Standard GM/RT2273 mandating the requirement for post-accident testing of warning horn equipment.

First Great Western awaits review of the proposal by the technical committee.

ORR Decision

12. After reviewing information received from Network Rail, 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*

ORR does not propose to take any further action in relation to this recommendation unless we become aware of an inaccuracy in what we have reported in which case we will write again to RAIB.

Recommendation 5

The intent of this recommendation is for Network Rail to conduct a network-wide project to optimise warnings for pedestrians at level crossings equipped with whistle boards, taking account of emerging technology and the ability to generate local warnings audibly or visually.

Network Rail should conduct a review of the arrangements for providing warnings for pedestrians at level crossings currently equipped with whistle boards. The review should address:

- a. the costs and benefits at each crossing of providing audible or visual warnings at the crossing itself rather than by approaching trains (taking account of the possibility of the significantly reduced costs of visual warnings referred to in paragraph 120); and
- b. at crossings where whistle boards will remain, whether the position of the board at each crossing has been optimised taking account of all relevant local factors including (but not limited to) prevailing wind, local topography, sources

of noise and the traverse time for crossing users and the positive and negative effects on railway neighbours (paragraph 130e).

Details of steps taken or being taken to implement the recommendation

13. Network Rail in its initial response on 6 September 2012 advised that:

This recommendation will be actioned via a phased approach.

Phase one will be to develop a cost effective method of providing a visual and/or audible warning at level crossings. Phase one is necessary as current costs of visual warning technology at level crossings would generate very few positive safety cases for implementation.

N.B. Smart Cameras are currently being deployed. The criterion for deployment is night time quiet period usage.

Phase two is to review circa 1600 crossings fitted with whistle boards to identify candidate sites for;

- a. installation of new visual and or audible aids of warning
- b. optimising positions of existing whistle boards i.e. moving them
- c. when no action is required due to there being no business case or when the position of whistle boards is already optimised.

Timescale for phase 1 and 2 is 13 months (31st October 2013)

The third and final phase is works delivery and implementation. At this stage with no remit provided until phase one is complete, a timescale of 31st March 2014 is only indicative. A project plan and further information will be provided once development funding has been agreed.

Phase one and two can be run concurrently but **phase three** would need to be a new SE Safety Enhancement project.

ORR Decision

14. After reviewing information received from Network Rail, 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.

Status: Network Rail has advised that it is taking action to implement the recommendation.

There is a wider level programme of level crossing work which is being monitored by ORR. ORR will write to RAIB it becomes aware that the information above is inaccurate.