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13 April 2016

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

Dear Andrew,

RAIB Report: Fatal accident at Mexico footpath crossing (near Penzance)

I write to provide an update[1] on the action taken in respect of recommendation 2 addressed to ORR in the above report, published on 20 June 2012.

The annex to this letter provides details of the action taken. The status of recommendation 2 is '**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 20 April 2016.

Yours sincerely,

Andrew Eyles

[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 for RSSB to consider what additional data needs to be captured within SMIS [Safety Management Information System] 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.

ORR Decision

1. ORR understands that, in the light of RSSB's analysis of data in respect of whistle boards at level crossings, Network Rail has commenced work to review and change night time quiet hours.

2. After reviewing information received ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, RSSB has:

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

Status: Implemented.

Previously reported to RAIB

3. On 2 February 2015 ORR reported to RAIB that a project had been started to link Network Rail's downloaded level crossing asset data to RSSB's Safety Management Information System (SMIS) automatically. Once this has been completed RSSB would be in a position to address Recommendation 2(b) (the analysis of near miss and accident data).

Update

4. On 13 August 2015 RSSB provided the following update:

Regarding Part 2(a), SMIS has been now updated to capture all ALCRM ID numbers to link to the crossings already contained in SMIS. Those that are not populated with IDs need investigating. It may be the case

that they are duplicates or still to be provided in the next data update. SMIS+ will have the functionality to record when a crossing was upgraded or changed to allow for better analysis.

Regarding Part 2(b), RSSB notes that Annual Safety Performance Report analysis only shows high-level statistics on all footpath crossings and does not factor in those with and without whistle boards. In general, however, not many near misses are recorded between 23:00 and 07:00 due to the fact that fewer trains are running. In order to ascertain the near miss level prior to the introduction of the low tone, RSSB proposes to assess the need for more in-depth analysis; if this is required the work will be carried out and completed by the end of September 2015.

5. On 1 February 2016 RSSB provided the following further update:

The improvements to SMIS regarding level crossing incidents has allowed RSSB to undertake enhanced analysis, the results of which were presented to the Level Crossing Strategy Group (LCSG) on 3 December 2015 [See Appendix A].

The data suggests that has been a 1% increase in the average proportion of near misses and incorrect usage at crossings with whistle boards compared with six years before the change, from 2001-2007, and six years post-change, from 2007-2013 (during the day when the low tone is used). Given that train moments and data quality have increased over the period, this is not a significant increase.

There has not been an overall increase or a shift in the proportion of events during the hours when the low tone is required to be used, compared with the night time quiet period (NTQP – 23:00-07:00). Therefore appropriate action is not deemed necessary at this stage.

RSSB acknowledges that the historical data is incomplete, but – going forwards – any new events will capture the additional information (a requirement captured by SMIS+).

Furthermore, this analysis will be continued, becoming part of RSSB's regular updates to the LCSG. As such, we consider the recommendation to be closed. However, we also note that, as 64% of near misses and incorrect usage during the NQTP occur during 23:00-00:00 and 06:00-07:00, the LCSG is exploring the possibility of reducing the NQTP to 00:00-06:00 in order to help mitigate the risk from passive crossing use.

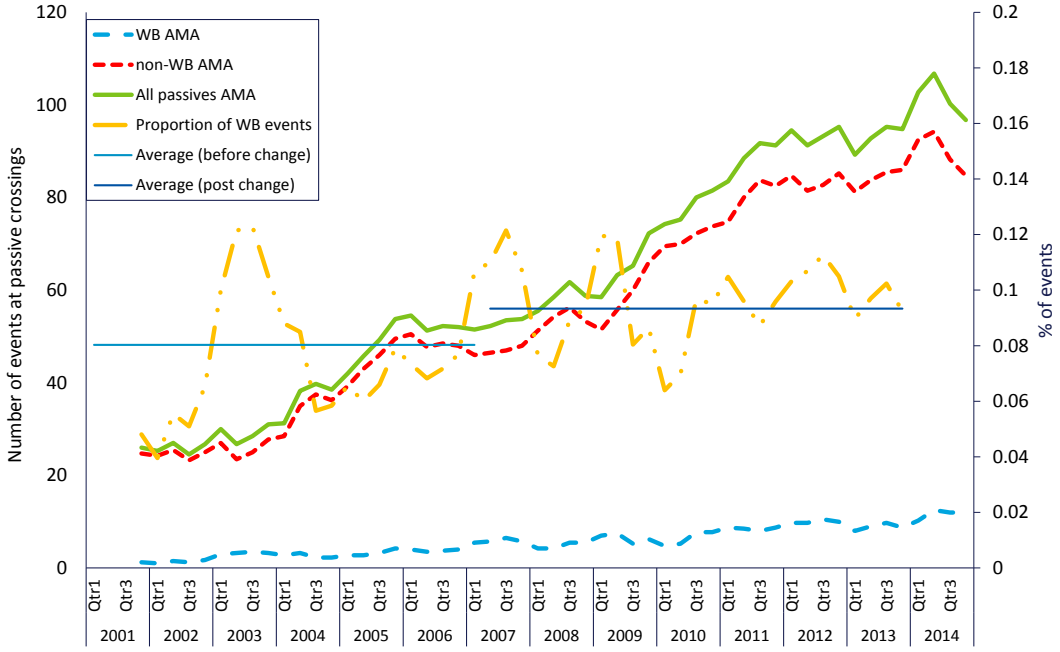
Appendix A Analysis of whistle boards at passive crossings (3 December 2015)

A.1 Near misses / incorrect usage

A.1.1 Chart 1 shows the number of passive[2] crossings reported to have had a near miss or a person who crossed the line when it was unsafe to do so – for all times of day.

A.1.2 The blue line represents all the events where it is known that the crossing has whistle board protection (ALCRM reference mapped). The red line shows the number of events where no whistle board is present or it is unknown if there is a whistle board in place (ALCRM reference missing).

Chart 1 Incorrect usage and near misses with trains at passive crossings during 0700-2300



A.1.3 Since 2001 the annual moving average (AMA) number of near misses with pedestrians at passive level crossings has increased. Those occurring at whistle board crossings have seen a gradual increase.

A.1.4 There is a 1% increase in the average proportion of near misses and incorrect usage at crossings with whistle boards compared with 6 years before (2001-2007 Qtr 1) and six years post change (2007 Qtr2-2013 Qtr3).

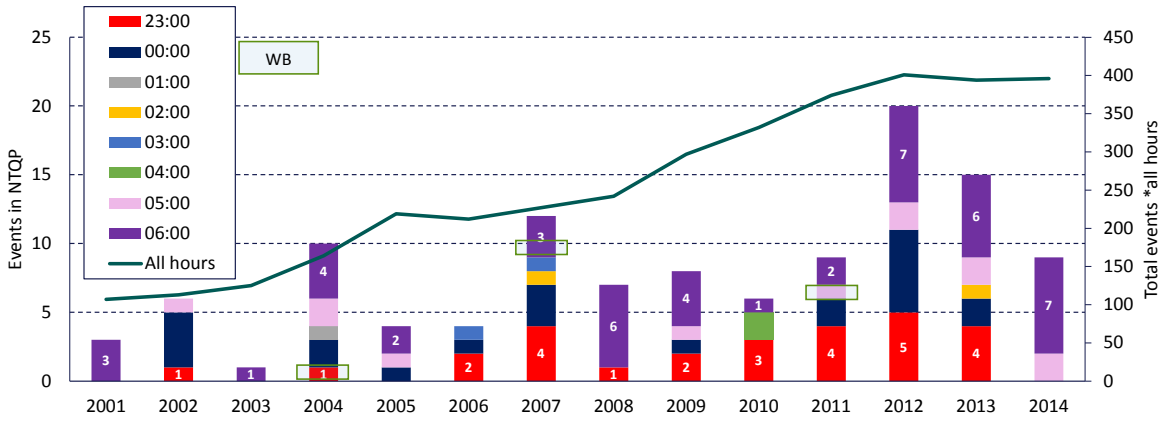
[2] The most recent crossing population census shows there are 4330 passive crossings on NRMI (2014 census).

A.1.5 The trend in whistle board crossings may increase once the historical events without a reference number are mapped to an ALCRM reference. The likely increase is expected to be around 10% based on the proportion of crossings with whistle boards currently.

A.2 By time of day

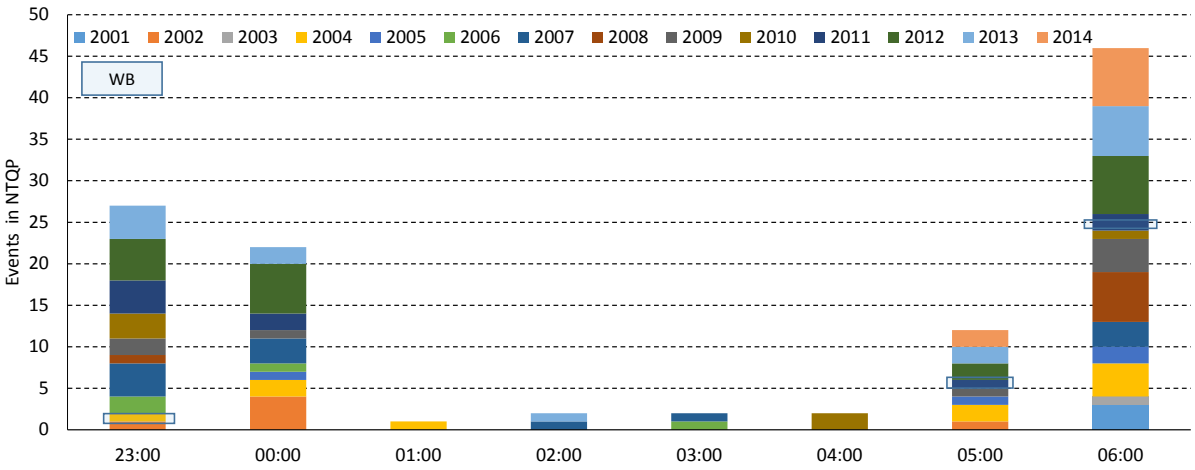
A.2.1 Chart 2 and 3 show the number of events during the night time quiet period (NTQP) and highlights three events that occurred at whistle boards (shown in blue boxing).

Chart 2 Near misses and incorrect usage during NTQP at passive crossings by year



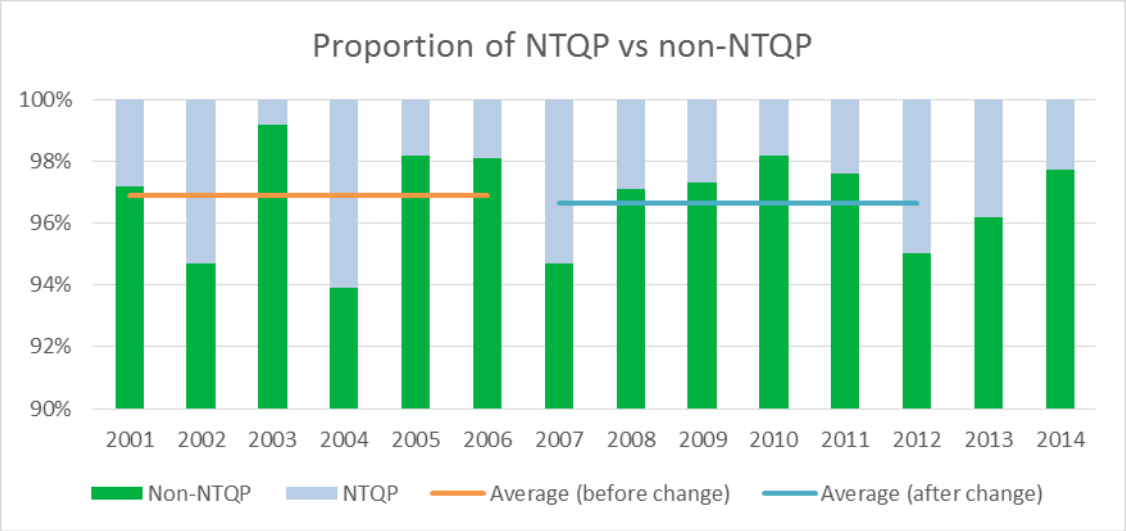
A.2.2 There is an increasing trend in the number of reports during the NTQP however this follows a similar trend for events occurring at all hours (black line). This trend suggests improvements in reporting rather than a genuine increase in the number of events.

Chart 3: Near misses and incorrect usage during NTQP at passive crossings by hour



A.2.3 The NTQP shoulder hours of 23:00 and 07:00 have 64% of reported events within these hours (23:00-23:59 / 06:00-06:59).

Chart 4 Proportion of near misses and incorrect usage during NTQP and non-NTQP at passive crossings by year



A.2.4 The chart shows there has not been an overall increase in the proportion of events during hours where the low tone is used. The proportion of events has remained fairly stable at an average of 97% before and after the change to the sounding of train horns.

A.3 Data quality

A.3.1 Looking at only the passive crossings there are 3603 records of near misses and incorrect usage in the analysis. Of these, 2367 (~66%) are missing ALCRM reference number data. Of the 1227 that do indeed have ALCRM data, 329 (~9%) have WBs installed at the crossing. Therefore, based on the assumption that crossings missing ALCRM references there may be around 10% of WB events that could be missing in the analysis over the early years (approximately 237 events). It's worth noting that there is an improving trend in events with missing ALCRM reference numbers; from 75% missing in 2001 to 58% missing in 2014.

A.3.2 The unknown timed events in the analysis are grouped within in the 00:00 hrs time period and consist of 12 (~55%) events that do not have a time recorded to the event.

Appendix B Background information

B.1 Extracts from 2014/15 ASPR

B.1.1 In April 2007 a night time 'quiet' period, between 23:00 and 07:00, was introduced. Between these hours train drivers are no longer required to routinely sound their horns at whistle boards approaching crossings.

B.1.2 Chart 126 shows near misses at footpath crossings by time of day both before and after the quiet period was introduced. There is little evidence that a higher proportion of near misses is occurring during the quiet period.

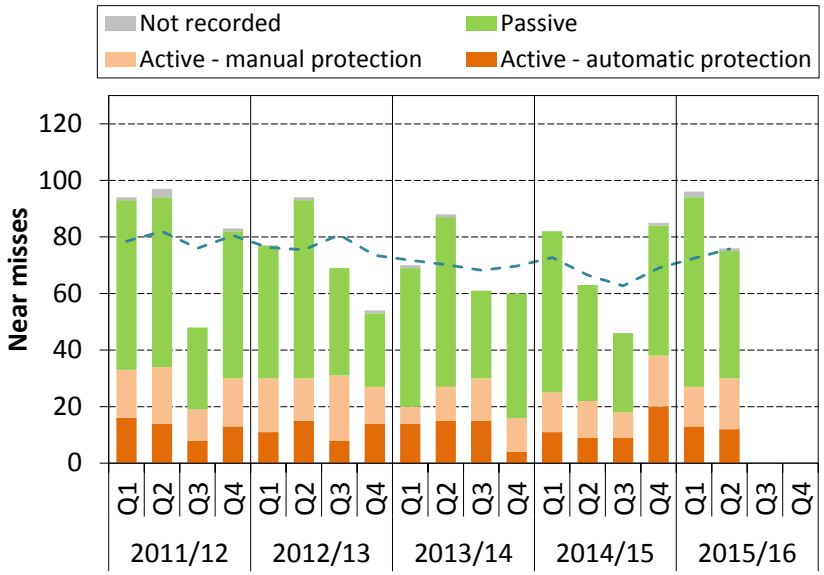
B.1.3 There have been four fatalities in the night time quiet period, in instances where the horn was not sounded, since April 2007; the first occasion was in 2009/10 and the second in 2013/14. The remaining two quiet-period fatalities both occurred in 2014/15. One occurred at Dibleys footpath crossing and the other at Hipperholme footpath crossing.

B.1.4 Four pedestrian fatalities in 2014/15 occurred on footpath crossings, three on automatic half barrier (AHB) crossings and one on a user-worked crossing with telephones (UWC-T). Since 2005/06, more than half of pedestrian fatalities have occurred on footpath level crossings.

B.2 Extract from LCSG paper – October meeting

B.2.1 Near misses with pedestrians

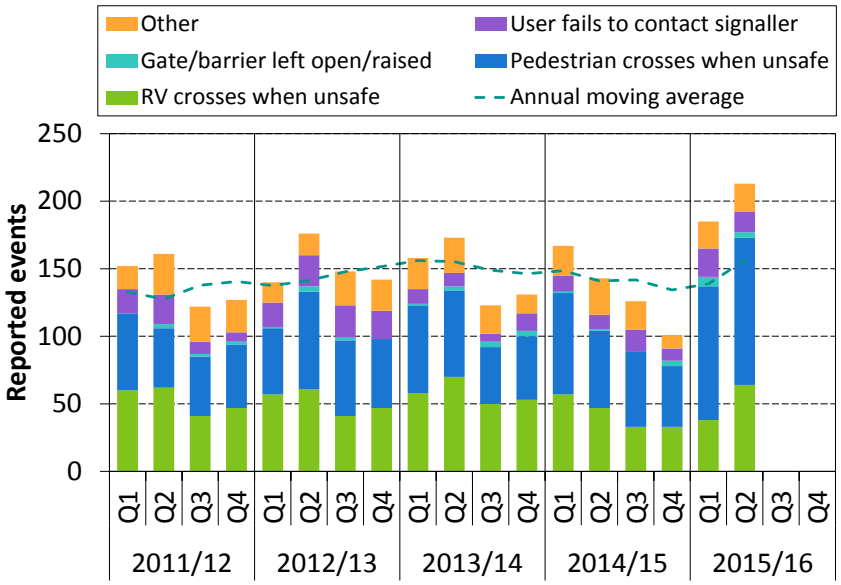
Chart 4: Near misses with pedestrians



B.2.1.1 There was a sharp rise in the number of pedestrian near miss events at passive crossings during Q4 of 2014/15 and Q1 of 2015/16. However there were 22 fewer events recorded at passive crossings during Q2 of 2015/16 and is below the average value for Q2 seen in the previous four years.

B.2.2 Incorrect usage at level crossings (other crossings)

Chart 5: Incorrect usage at level crossings



B.2.2.1 There has been a sharp rise in the number of reported events during Q1 and Q2 of 2015/16. With the number of pedestrians crossing when unsafe reaching the highest number seen over the four year period. The number of incidents reported has been above the annual moving average for the last two quarters. [3]

[3] Other crossings refers to all level crossings which do not meet the criteria specified above. (ABCL, AHB, AOCL, AOCL+B, AOCR, OC, SPC-MWL, SPC, SPC-WL, SBC, footpath)