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Ms Carolyn Griffiths
Chief Inspector of Rail Accidents
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 provide an update¹ on the consideration given and action taken in respect of recommendation 5 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 recommendation 5 where the status of the recommendation is:

- *In-progress* – ORR will update RAIB by 1 August 2014

We will publish this response on the ORR website on 13 February 2014.

Yours Sincerely

Chris O'Doherty

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 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); 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 .

Brief Summary on what was previously reported to RAIB on 14 February 2013

1. Network Rail stated that:

This recommendation will be actioned via a phased approach.

Phase one was 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 was 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.

Update

2. On 31 October 2013, ORR requested Network Rail to provide a summary of the findings from phases one and two, including any further action it may be taking (including timescales) and an update on actions being taken to implement phase 3 (including timescales).

On 19 November 2013, Network Rail provided ORR with an updated action plan to address this recommendation.

Phase 1 – Technology Development

Phase one is to develop a cost effective method of detecting the proximity of trains and providing a visual warning to the user 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.

Five suppliers have been selected from an OJEU [Official Journal of the European Union] to progress. A project team is on-board with investment being sourced in November 2013 to progress to trials. Note 1 (below) outlines the stages of product acceptance each of the five suppliers have achieved. The target for all technologies that have entered the product acceptance process with Network Rail is approval by March 2014.

Phase 2 – Whistle-Board Landscape and Effectiveness as a Mitigation.

Phase 2 is a review of the whistle-board landscape nationally. A desktop exercise was carried out to review the current whistle-board positioning (data taken from the All Level Crossing Risk Model) and compared against the optimum position. Whistle-boards were considered to be non-compliant where they provide insufficient warning of approaching trains (less than the traverse time) or where they are located further than 400m from the level crossing. This is in accordance with ORR's RSP7.

Approximately 47% of crossings with whistle boards appear, according to the data, to be non-compliant nationally. See note 2 (below) for national whistle-board compliance landscape.

Due to the nature and scale of the potential non-compliances, Network Rail operational route teams have been requested to identifying crossings where there is already a suitable mitigation in place (sufficient sighting, miniature stop lights and telephones for all users or speed restrictions).

Urgent action shall be taken to address all non-compliant whistle boards. The highest priority will be given to tackling crossings where there is a large deficiency in warning and high usage. Network Rail Routes are considering opportunities to implement interim mitigations. A guidance document has been produced which is being utilised by Network Rail operational risk teams as the process to be followed for on-site evaluation of compliance and effectiveness.

Network Rail will have detailed site by site action plans by 31 December [2013] for non-compliant sites although this does not mean that immediate action will not be taken where required.

Network Rail provided ORR with a copy of: DRAFT Level Crossing Guidance Document LCG 05 'Whistle-board Effectiveness and Provision', October 2013.

Phase 3

Network Rail will be able to confirm timescales for implementation and delivery once action plans are available on 31 December [2013] – update mid-January 2014.

Network Rail is anticipating product acceptance for new technology solutions by March 2014. At this point, the Routes will be responsible for developing business cases for individual sites and delivering those where it is reasonably practicable.

Implications of RSSB's research paper T984

The interim findings of RSSB research paper T984 indicate that Network Rail will be required to review policy and guidance relating to traverse timings. Whilst this may change whistle board effectiveness in some cases, Network Rail has to take action based on current information and processes. The research is currently being evaluated but recommends an increase in traverse times that may result in more non-compliant sites as well as rendering whistle boards ineffective in more locations.

Note 1 – Suppliers stages of product acceptance

The technology solutions are at the following stages:

- 1 *Ebigate 200 (Bombardier) - product accepted for non-electrified lines and progressing towards trials for electrified lines;*
- 2 *WaveTrain – currently being trialled in Anglia Route and aims for product acceptance by December 2013;*
- 3 *Schweizer – supplier compliance returned and progressing to trials;*
- 4 *Eric Wright - supplier compliance returned and progressing to trials; and*
- 5 *Rhomberg Rail - supplier compliance returned.*

Note 2 – National whistle-board compliance landscape

Data Source: This information was taken from the All Level Crossing Risk Model (ALCRM) on the 25 Oct 2013.

The accuracy of this summary is dependent on the information in ALCRM being correct at the time the information was downloaded. It is expected that this summary will alter slightly as a result of physical site visits undertaken by Network Rail operational risk teams.

Route	Number of level crossings with WB's	Number of crossings where WB's provide insufficient warning	Number of crossings where WBs sited over 400m	Number noncompliant	Percentage noncompliant	Number that cannot be easily rectified
Anglia	88	37	13	50	57%	34
Kent	153	49	29	78	51%	43
LNE	254	86	49	135	53%	67
LNW	188	46	11	57	30%	20
East Midlands	89	35	21	56	63%	41
Scotland	195	38	15	53	27%	19
Sussex	63	31	5	36	57%	24
Wales	245	48	47	95	39%	38
Wessex	101	41	14	55	55%	36
Western	206	78	47	125	61%	79
TOTAL	1582	489	251	740	47%	401

Route	Number of level crossings with WB's	Number of crossings where WB's provide marginal warning	Number of crossings where there is a whistle board on only one line	Number of crossings with one whistle board, where the other provides marginal warning
Anglia	88	26	8	0
Kent	153	30	9	2
LNE	254	26	71	6
LNW	188	45	13	1
East Midlands	89	12	17	5
Scotland	195	31	15	0
Sussex	63	9	12	7
Wales	245	37	64	11
Wessex	101	30	2	0
Western	206	31	31	2
TOTAL	1582	277	242	34

ORR Decision

3. ORR is aware of the technical solutions and is content that the timescales for development, approval and introduction are reasonable.

4. However, ORR is seriously concerned with the findings of the phase 2 table-top exercise but recognises that this may not reflect the actual conditions on the ground. ORR is pursuing this concern with the Head of Level Crossings, Network Rail, as a matter of priority.

5. After reviewing all the information received from Network Rail, ORR 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.

ORR will write to RAIB again if it becomes aware that the information above is inaccurate.

Status: *In-progress* – ORR will update RAIB by 1 August 2014