



Rail Accident Investigation Branch



# **Annual Report 2012 Section 2: Reported Status of RAIB's Recommendations 2012**

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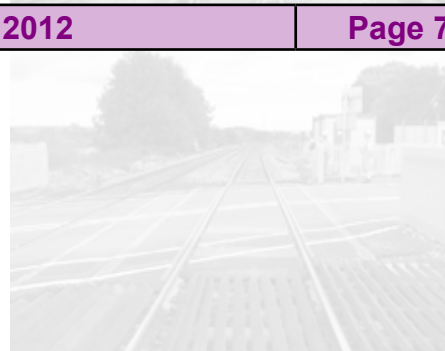
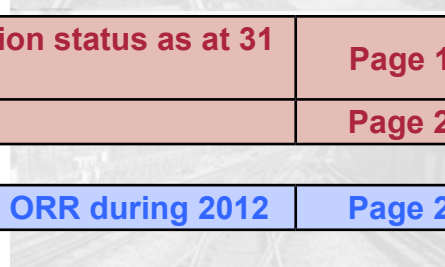
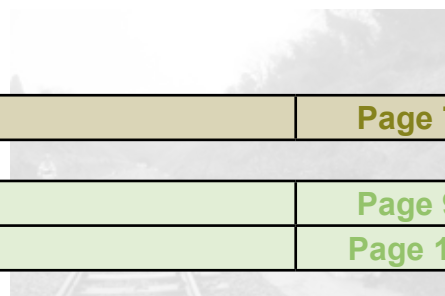
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## Annual Report 2011 Section 2: Reported Status of RAIB's Recommendations 2012



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Place	Date	Accident / Incident	Page No
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Place	Date	Accident / Incident	Page No
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## Introduction

For details about the role of the Rail Accident Investigation Branch (RAIB), see [part 1 of the Annual Report](#) titled “The role of the Rail Accident Investigation Branch”; this includes hyperlinks to the RAIB website that give a full explanation of the various organisation duties.

This part of the report gives details of feedback to the RAIB from Safety Authorities, the response and detail of actions taken is very important to provide a clear view of the process, and enables everyone to have a view of the safety improvements arising from the RAIB’s investigations. Please note the status quoted against each recommendation relates to the position recorded as at 31 December 2012. Further progress may have been made since January 2013, if so this will be included in the RAIB Report for 2013.

The RAIB plans to publish details on the progress of its recommendations on the Branch website; the recommendation report will be accessed via an icon placed on the same web page as the investigation report.

## The Recommendation Progress Report

### The Recommendation Progress Report

This status report is based on a consolidation of information provided to the RAIB by the Office of Rail Regulation (ORR) and other public bodies.

The status of implementation of the RAIB's recommendations, as reported by the safety authority or public body, has been divided into six categories:

#### Key to Recommendation Status

<b>Implemented:</b>	Regulation 12(2)(b)(i) = recommendation accepted and implemented
<b>Implemented by alternative means:</b>	
<b>Implementation ongoing:</b>	Regulation 12(2)(b)(ii) = recommendation accepted and implementation has started
<b>In-progress:</b>	Regulation 12(2)(b)(ii) = recommendation accepted and implementation proposed
<b>Non-implementation:</b>	Regulation 12(2)(b)(iii) = recommendation considered and no implementation action to be taken
<b>Awaiting response</b>	Awaiting initial report from ORR on the status of the recommendation

- ▲ The red triangle shows recommendations where the RAIB has particular concerns that no actions have been taken in response to a recommendation.
- ▲ The blue triangle shows recommendations where the RAIB has concerns that the actions taken, or proposed to be taken, are inappropriate or insufficient to address the risk identified during the investigation.

# List of investigation reports showing status of recommendations as at 31 December 2012

Report year 2006		Status Category				
No	Investigation Title	1	2	3	4	5
		Implemented	In-progress	Non-implementation	Awaiting response	Total recommendations from report
1	Tram, Pedestrian Collision at Staniforth Road, Sheffield	3				3
2	Derailment at Watford Junction Yard	4				4
3	Passenger train collision with a road vehicle at Swainsthorpe level crossing, Norfolk					0
4	Derailment at Phipps Bridge, Croydon Tramlink	4				4
5	Runway incidents on Blackpool Transport Services Tramway	4				4
7	Collision of loco with carriages at GCR Loughborough Central Station	4				4
8	Freight train derailment at Hatherley, near Cheltenham Spa	5				5
9	Near miss two track pax by a tram on Manchester Metrolink, Radcliffe	9				9
10	Station over-run at Haywards Heath	2				2
11	Collision at New Addington on Croydon Tramlink	4				4
12	Collision at Black Horse Drive Crossing, nr Littleport, Cambridgeshire	3		1		4
14	Derailment near Liverpool Central underground station	7		1		8
15	Cutting of rail still open to traffic, Thirsk station, East Coast ML	7		1		8
16	Trackworker fatality at Trafford Park	8		1		9
17	Derailment of a Ballast Plough Brake Van at Carlisle	6				6
18	Derailment at Blackpool Pleasure Beach	2				2
19	Derailment at Oubeck North near Lancaster	3		3		6
20	Report on runaway trolley between Larkhall and Barncluith Tunnell	16				16
21	Wagon derailment at York station	4				4
22	Derailment near Moy, Inverness-shire	10				10
23	Investigation into pedestrian crossings initiated by Elsenham fatality	9		1		10
24	Derailment at Archway	3				3
26	Collision between train and buffer stops at Sudbury	2				2
27	Broken rails at Urchfront & Kennington following passage freight trn	6				6
	<b>Totals</b>	<b>125</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>133</b>
	Percentage	94.0%	0.0%	6.0%	0.0%	100.0%

Report year 2007		Status Category				
No	Investigation Title	1	2	3	4	5
		Implemented	In-progress	Non-implementation	Awaiting response	Total recommendations from report
0	Autumn Adhesion Investigation Pt1 Signals WK338 / WK336 at Esher	22	3			25
1	Derailment of a freight train at Brentingby Junction nr Melton Mowbray	8		2		10
2	Derailment of a freight train at Cricklewood Curve	5		1		6
3	Unauthorised train movement & derailment at Haymarket, Edinburgh	3				3
4	The blowback of a locomotive fire at Grosmont on the NYMR	8		1		9
5	Derailment near Waterside, East Ayrshire	7				7
6	Dispatch of a train with an unsecured load, Basford Hall Yard, Crewe	5				5
7	Ravenglass & Eskdale derailment of passenger coach at Spouthouse Curve	8				8
8	Derailment at Long Millgate, Manchester	4				4
9	Train collision with RV at Bratts Blackhouse User X Sizewell, Suffolk	6		2		8
10	Traction control failure causing signal passed at danger, Camden Road	9				9
11	Huntingdon train door incident	6				6
12	Runaway permanent way trolley at Notting Hill Gate	9				9
13	Locomotive runaway near East Didsbury	7	1			8
14	Fatal accident involving a train driver, Deal	8		1		9
15	Derailment at Starr Gate, Blackpool	2				2
16	Near misses at Crofton Old station No.1 LX, near Wakefield W Yorks	6				6
17	Tram collision at Soho Benson Road, Midland Metro	3				3
18	Collision between tram and RV at New Swan Lane LX on Midland Metro	2				2
19	Unauthorised train movement at High Street Kensington	14				14
20	Derailment at Ropley (Mid Hants Railway)	6				6
21	Derailment of a tram on the Seaton Tramway	2				2
22	Fatal accident at Bronwydd Arms station, Gwili Railway	9				9
23	Fatal accident to Shunter, Dagenham Dock	7				7
24	Derailment of a freight train at Maltby North	2		2		4
25	Derailment at Trooperslane near Carrickfergus, Northern Ireland	7		1		8
26	Possession irregularity near Manor Park	3				3
27	Signal T172 passed at danger at Purley station, Surrey	5				5
28	Derailment at Phipps Bridge on Croydon Tramlink	2				2
29	Collision at Pickering Station NYMR	2				2
30	Collision at Badminton	3		1		4
31	Passenger door open on a moving train near Desborough	9				9

Report year 2007		Status Category				
		1	2	3	4	5
No	Investigation Title	Implemented	In-progress	Non-implementation	Awaiting response	Total recommendations from report
32	Passenger train derailment near Fisherground - Ravenglass/Eskdale RW	2				2
33	Fatal collision between a Super Voyager train and car Copmanthorpe	2				2
34	Derailment at Epsom	3				3
35	Collision at Swanage station	5				5
36	Collision between a train and a RV, M20 overline bridge, Aylesford	5	1			6
37	Fire on HGV shuttle in the Channel Tunnel	13	1	2		16
38	Derailment at Birmingham Snow Hill, Midland Metro	4				4
39	The derailment of a freight train at Washwood Heath	4				4
40	Incident at Wellesley Road on Croydon Tramlink					0
41	Fire on prototype tram 611 at Blackpool	2				2
42	Derailment at Cromore, Northern Ireland	7				7
43	Near miss involving a track worker at Tinsley Green Junction	8				8
44	Derailment at Waterloo South sidings 1565 points	14				14
45	Train / vehicle collision on the Leighton Buzzard Narrow Gauge Railway	2	1			3
46	Train and RV collision on Leighton Buzzard Narrow Gauge Railway	2				2
	<b>Totals</b>	<b>272</b>	<b>8</b>	<b>12</b>	<b>0</b>	<b>292</b>
	Percentage	93.2%	2.7%	4.1%	0.0%	100.0%

Report year 2008		Status Category						
No	Investigation Title	1 Implemented	2 Implemented by alternative means	3 Implementation ongoing	4 In-progress	5 Non- implementation	6 Awaiting response	7 Total recommendations from report
1	Collision near Burton on Trent	4						4
2	The derailment of a freight train at King Edward Bridge, Newcastle	4						4
3	Derailment of a London Underground Central Line train near Mile End	5						5
4	Track worker fatality at Ruscombe Junction	7						7
5	Derailment in Hooley Cutting, near Merstham, Surrey	9						9
6	Tube Train driven in wrong direction, Camden Town, Northern Line	4						4
7	Derailment of a passenger train near Kemble	2						2
8	Runaway and collision at Armathwaite	3						3
9	Derailment of a tram at Pomona, Manchester	5						5
10	Collision btw train and tractor on LX nr Limavady Jnc, Northern Ireland	5			1			6
11	Derailment of a train at Croxton Level Crossing	11						11
12	Runaway of two wagons from Camden Road Tunnel	8						8
13	Two trains in the same section at Aylesbury	4						4
14	Collision with the gates at Lydney Town level crossing	10						10
15	Child fell from train on the Nene Valley Railway	1						1
16	Derailment at Duddeston Junction, Birmingham	7				1		8
17	Passenger trapped in train door, Tooting Broadway, Northern Line.	1						1
18	Collision of a train with a demolished footbridge, Barrow upon Soar	3				1		4
19	Accident at Leatherhead	6						6
20	Derailment at Grayrigg	28			1			29
21	Fatal accident to a trackworker east of Reading Station	3			2			5
22	Train overspeeding through an emergency speed restriction at Ty Mawr	6	1					7
23	SPAD and subsequent near miss at Didcot North Junction	5	1	1		2		9
24	Mnr collision engineering unit & 2 manual trolleys nr St. John's Wood	14						14
25	Network Rail's Management of Existing Earthworks	6						6

Report year 2008		Status Category						
No	Investigation Title	1 Implemented	2 Implemented by alternative means	3 Implementation ongoing	4 In-progress	5 Non- implementation	6 Awaiting response	7 Total recommendations from report
26	Near miss nr Bishops Stortford and Stanstead Mountfitchet, Essex	4				1		5
27	Fatal accident at Moor Lane footpath crossing, Staines	4						4
	<b>Totals</b>	<b>169</b>	<b>2</b>	<b>1</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>181</b>
	Percentage	93.4%	1.1%	0.6%	2.2%	2.8%	0.0%	100%

Report year 2009		Status Category						
No	Investigation Title	1 Implemented	2 Implemented by alternative means	3 Implementation ongoing	4 In-progress	5 Non- implementation	6 Awaiting response	7 Total recommendations from report
1	Fatal accident at West Lodge crossing, Haltwhistle	4						4
2	Derailment at Ely Dock Junction	16						16
3	Derailment of a rail vehicle at Terryhoogan, near Scarva, NI	4						4
4	Derailment near Exhibition Centre station, Glasgow	3				1		4
5	Runaway of a road rail vehicle at Glen Garry	7						7
6	Fatal accident at Morden Hall Park footpath crossing	1						1
7	Derailment of a freight train near Moor Street station, Birmingham	3						3
8	Uncontrolled movement RV Channel Tunnel passenger trn UK-France	3						3
9	Fatal accident at Tackley station level crossing, Oxfordshire	5				1		6
10	Derailment at Santon near Foreign Ore Branch Junction, Scunthorpe	4			4	1		9
11	RRV runaway incidents at Brentwood, Essex and at Birmingham Snow Hill	6						6
12	Detachment of containers from wagons near Cheddington & Hardendale	10						10
13	Investigation into safety at user worked crossings	4			1	2	1	8
14	Near miss at Poplar Farm level crossing, Attleborough, Norfolk	2						2
15	Collision between passenger train & 2 grinding machines Acton West	7			1			8

Report year 2009		Status Category						
No	Investigation Title	1 Implemented	2 Implemented by alternative means	3 Implementation ongoing	4 In-progress	5 Non-implementation	6 Awaiting response	7 Total recommendations from report
16	Derailment of a DLR train near Deptford Bridge station, London	11						11
17	Collision near New Southgate	5						5
18	Derailment of a passenger train at Gysgfa, Ffestiniog Railway	5						5
19	Track worker struck by train Grosvenor Bridge, London Victoria	3			5	1		9
20	Near miss at Llanbadarn ABC (Locally monitored), near Aberystwyth	8						8
21	Incident involving a container train at Basingstoke station	3						3
22	Collision with debris from bridge GE19 near London Liverpool Street	5			1	1		7
23	Trackworker struck by train, Stevenage	6						6
24	Freight train collision at Leigh-on-Sea	6				1		7
25	Derailment at St Peter's Square, Manchester	3			2			5
26	Fatal accident at Wraysholme crossing, Flookburgh, Cumbria	2			3			5
27	Investigation into runaways of RRV & their trailers on NR				3			3
28	Derailment of two locomotives at East Somerset Junction	7			4			11
29	Serious injury sustained by a signal technician, Kennington Junction	3						3
30	Accident at Dalston Junction	3						3
31	Container doors hit pax trains, Penrith & Eden Valley Loop, Cumbria	3						3
32	Double fatality at Bayles & Wylies FPC, Bestwood, Nottingham	7			1			8
33	Collision & derailment at North Rode btw Macclesfield & Congleton	3						3
	<b>Totals</b>	<b>162</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>8</b>	<b>1</b>	<b>196</b>
	Percentage	82.7%	0.0%	0.0%	12.8%	4.1%	0.5%	100%



Report year 2010		Status Category						
No	Investigation Title	1 Implemented	2 Implemented by alternative means	3 Implementation ongoing	4 In-progress	5 Non- implementation	6 Awaiting response	7 Total recommendations from report
1	Derailment of a freight train at Marks Tey, Essex						7	7
2	Derailment of a freight train near Stewarton, Ayrshire	12						12
3	Derailment of a DLR train near West India Quay station, London	6			1			7
4	Incident at Greenhill Upper Junction, near Falkirk	6						6
5	Near-miss at Hanger Lane junction	6						6
6	Derailment of a passenger train near Cummersdale, Cumbria	5						5
7	Derailment at Hampton Loade, Severn Valley Railway	5						5
8	Fatal accident at Fairfield crossing, Bedwyn	3						3
9	Fatal accident at Norbreck, Blackpool	2						2
10	Collision at Exeter St Davids station	1						1
11	Derailment at Windsor & Eton Riverside station				3			3
12	Overhead line failure, St Pancras International	2					5	7
13	Collision on the Great Orme Tramway				2			2
14	Derailment at Wigan North Western station	1			3			4
15	Fatal accident at Whitehall West junction, Leeds	1		1				2
16	Fatal accident at Halkirk level crossing, Caithness	4		2				6
17	Failure of Bridge RDG1 48 (River Crane) between Whitton & Feltham				6			6
18	Near-miss on Victory level crossing, near Taunton, Somerset	3				1		4
19	Derailment near Gillingham tunnel, Dorset	4			1			5
20	Incident at Romford Station	5						5
	<b>Totals</b>	<b>66</b>	<b>0</b>	<b>3</b>	<b>16</b>	<b>1</b>	<b>12</b>	<b>98</b>
	Percentage	67.3%	0.0%	3.1%	16.3%	1.0%	12.2%	100%

Report year 2011		Status Category						
No	Investigation Title	1 Implemented	2 Implemented by alternative means	3 Implementation ongoing	4 In-progress	5 Non- implementation	6 Awaiting response	7 Total recommendations from report
1	Passenger train struck by object at Washwood Heath	3			1			4
2	Near miss - freight train & two passenger trains, Carstairs	3						3
3	Derailment of freight train at Carrbridge, Badenoch & Strathspey	1			3			4
4	Fatal accident at Moreton-on-Lugg, near Hereford			2	2			4
5	Derailment engineering train between Gloucester Rd & Earls Ct LU	9						9
6	Track worker struck by a train at Cheshunt Junction	1			1			2
7	Runaway and derailment of wagons at Ashburys	4			2			6
8	Collision between train IC84 and a tree at Lavington, Wiltshire	4						4
9	Runaway of an engineering train from Highgate	7						7
10	Runaway and collision of RRV near Raigmore, Inverness	3			1			4
11	Accident at Falls of Cruachan, Argyll	4		1	1			6
12	Investigation into safety of AOCLs on Network Rail's infrastructure	2			2			4
13	Bridge strike & RV incursion onto roof of passing train nr Oxshott Stn	1			2		2	5
14	Collision lorry & train Sewage Works Lane, near Sudbury, Suffolk	4		1	1			6
15	Uncontrolled freight train runback between Shap and Tebay, Cumbria	1			3			4
16	Derailment in Summit tunnel, near Todmorden, West Yorkshire			4	1			5
17	Derailment of a passenger train near Dryclough Jcn, Halifax	1			4			5
18	Station overrun at Stonegate, East Sussex	3						3
19	Passenger accident at Brentwood station				5			5
20	Train passed over Lydney level crossing with crossing barriers raised	1			2			3
	<b>Totals</b>	<b>52</b>	<b>0</b>	<b>8</b>	<b>31</b>	<b>0</b>	<b>2</b>	<b>93</b>
	Percentage	55.9%	0.1%	8.6%	33.3%	0.0%	2.2%	100%

Report year 2012		Status Category						
No	Investigation Title	1	2	3	4	5	6	7
		Implemented	Implemented by alternative means	Implementation ongoing	In-progress	Non-implementation	Awaiting response	Total recommendations from report
1	Passenger train derailment near East Langton, Leicestershire						4	4
2	Tamper driver struck by a train at Torworth level crossing						1	1
3	Two incidents involving track workers btw Clapham Jcn & Earlsfield						5	5
4	Boiler incident on the Kirklees Light Railway	1		1				2
5	Partial failure of Bridge 94, near Bromsgrove						3	3
6	Collision between a train and tractor at White House Farm user worked crossing							0
7	Safety incident between Dock Junction and Kentish Town						3	3
8	Fatal accident at Piccadilly Gardens, Manchester						2	2
9	Person trapped in doors and pulled along platform at King's Cross Stn						1	1
10	Fatal accident at Mexico footpath crossing (near Penzance)						5	5
11	Incident at Llanbadarn Automatic Barrier Crossing (LM) nr Aberystwyth						6	6
12	Detachment of a cardan shaft at Durham station						6	6
13	Train departed with doors open, Warren Street, Victoria Line, London						4	4
14	Incident involving runaway track maintenance trolley nr Haslemere						6	6
15	Fatal accident Gipsy Lane Footpath Crossing, Needham Market, Suffolk						4	4
16	Track worker struck by a train at Stoats Nest Junction						1	1
17	Container train accident near Althorpe Park, Northamptonshire						4	4
18	Derailment at Princes Street Gardens, Edinburgh						5	5
19	Derailment at Bordesley junction, Birmingham						4	4
20	Collision between a train and lorry on Llanboidy AHB level crossing						6	6
21	Collapse of the OHL near to Jewellery Quarter Tram Stop, Midland Metro						7	7



### Recommendations made in 2012 to end implementer


End Implementer	Number
Department for Transport (DfT)	4
Freight, Train Operating Company (FOC)	1
Heritage Railway	3
Light Rail Tram (LRT) Infrastructure	7
Light Rail Tram (LRT) Operating Company (TOC)	6
London Underground Ltd	4
Manufacturers	3
Network Rail	52
Other Public Bodies	6
Passenger, Train Operating Company (TOC)	12
Rail Safety and Standards Board (RSSB)	5
Railway Contractors	2
Rolling Stock Maintainers	4
ROSCO (Rolling Stock Leasing Company)	9
The Office of Rail Regulation (ORR)	3
Total	<b>*121</b>
* Note: a number of Safety Recommendations are made to more than one implementer	


Recommendations that were the subject of a report by ORR during 2012


Number/ Date/ Report No/ Inv Title / Current Status			Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
4	23/11/2005	11/2006	The Office of Rail Regulation (Her Majesty's Railway Inspectorate) should consider reviewing Railway Safety (Principles and Guidance), Part 2G "Guidance on Tramways" to include the provision of suitable over-run distances, and/or detection and warning systems at the design stage of tramway systems where they are a simple and cost effective means to mitigate against fouling point collisions at the entry to single line sections (paragraph 57).	ORR considered whether there was a case for the adoption of this recommendation. ORR have reported that the guidance on tramways is currently under review. However, it has concluded that the adoption of the recommendation is contrary to the principles of tramway operations. RAIB notes that ORR have considered the proposed enhancement of guidance in this area but is disappointed that no action is proposed
14	02/11/2005	20/2006	Network Rail should carry out a risk assessment on the use of red lights on trolleys used in T2 sites and either; •~ enforce the existing requirement for such lights, which will include the fitting of brackets to all existing and future trolleys on the network; •~ or propose a modification to Rule Book Module T2, paragraph 15.5, to remove the requirement for a red light on a trolley.	Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
1	22/05/2006	09/2007	Network Rail should explain to the authorised users about the method of safe operation of Bratts Blackhouse No 1 UWC and their responsibilities and confirm this in writing. In addition, a notice to comply with GI/RT7012 Part K3 should be sent to the authorised users and a copy displayed at the crossing. Network Rail should also take reasonably practicable steps to verify users' compliance with the method of safe operation (paragraphs 61 and 120).	Network Rail has reported that it has taken actions in response to this recommendation. However, Network Rail is not proposing to take actions in respect of compliance with G1/RT/7012 since it considers this to add little value. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
1	19/03/2006	26/2007	(a) Network Rail should: Review their possession planning principles and formulate criteria for limiting the complexity of work sites within a possession. This is to aid compliance with Rule T3 10.7 which requires that COSSs sign form RT3199 personally (paragraph 89 and 119); (b) Network Rail should: Undertake a review of the risks/benefits associated with long work sites covering different items of work compared to multiple short work sites unless those items of work are less than 300 m apart <sup>2</sup> (paragraph 90); (c ) Network Rail should: Review, and implement changes as necessary in, procedures to ensure that contractors are aware of major changes to planned possessions and that a record of this communication is maintained (paragraph 102).	Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
3	31/10/2006	30/2007	RSSB should make a proposal, in accordance with the Railway Group Standards Code, to amend Module T11 of the Rule Book to require that on-track machines are operated in tandem/multiple within possessions and work sites where it is practicable to do so (paragraph 71).	RSSB have carried out a review in response to this recommendation. RSSB propose no further action. ORR is giving consideration to the best way that this recommendation can be addressed.

Number/ Date/ Report No/ Inv Title / Current Status			Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
2	25/09/2006	33/2007	Network Rail should ensure that all cul-de-sacs currently leading directly to their railway are or have been assessed in line with the DfT guidance referred to in paragraph 58, and that their procedures enforce such assessment for any future changes to the highway infrastructure immediately adjacent to their boundary (paragraph 100).	Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
Fatal collision between a Super Voyager train and car Copmanthorpe Status: Implemented				
2	10/05/2007	02/2008	Network Rail should investigate the capability for Wheelchex data to be used to identify out-of-balance lateral wheel loading on vehicles and if practicable to instigate a warning system using Wheelchex to minimise the risk to the network (paragraph 147).	Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
The derailment of a freight train at King Edward Bridge, Newcastle Status: Implemented				
3	10/05/2007	02/2008	Network Rail should review and amend the design and maintenance of the layout of the up main line to up Carlisle line crossover at King Edward Bridge South Junction or implement any necessary measures to ensure that it does not become out of specification within the monitoring interval (paragraphs 146, 147).	Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
The derailment of a freight train at King Edward Bridge, Newcastle Status: Implemented				
1	12/09/2006	11/2008	Network Rail should assess the sleeper spacings and panel length of all HoldFast crossings until the rate of shrinkage is understood, and take such steps as are necessary so that no panel end is left unsupported by a sleeper. At the same time they should ensure that legged base plates are installed as specified by HoldFast Level Crossings Ltd (paragraphs 415a, 415b and 419).	Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
Derailment of a train at Croxton Level Crossing Status: Implemented				
2	12/09/2006	11/2008	Network Rail should review the information that they provide to their level crossing teams, so that the requirements of their standards, the risks of particular crossings using panel surfaces and the installation, inspection and maintenance actions that they expect are clearly communicated to front-line staff in a way that is useful and comprehensible to them (paragraph 416b and 417a).	Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
Derailment of a train at Croxton Level Crossing Status: Implemented				
3	12/09/2006	11/2008	HoldFast Level Crossings Ltd. should define the performance limits of their level crossing panels in consideration of the loads and layouts to which they are exposed (paragraphs 416c and 416d). It is suggested that HoldFast seek assistance from Rosehill Polymers and Network Rail in this task.	HoldFast Level Crossings Ltd has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
Derailment of a train at Croxton Level Crossing Status: Implemented				



Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>4            12/09/2006    11/2008</p> <p>Derailment of a train at Croxton Level Crossing</p> <p>Status: Implemented </p>	<p>Network Rail should arrange a complete generic risk assessment of the HoldFast level crossing system by an appropriately technically qualified person, once the service environment of level crossings and the limits of performance of panels have been assessed. This should involve Holdfast Level Crossings Ltd. and Rosehill Polymers Ltd. appropriately in accordance with Network Rail's Engineering Safety Management System definition of 'system supplier'. This assessment should review the risks associated with the design, manufacture, installation and maintenance of the system, and should be supported by a wide review of in-service experience. The principles of Network Rail's Engineering Safety Management System should be adopted for guidance. The generic assessment should then be used to develop a site-specific assessment methodology for all locations where HoldFast crossings are to be used (paragraph 416c and 416d).</p>	<p>ORR has concluded that it is not for Network Rail to carry the risk assessment as envisaged by the recommendation, ORR states that Network Rail has suitable inspection and audit arrangements which are sufficient to ensure that crossing decks remain safe. The RAIB has observed that this is an entirely reactive approach. The intention of the recommendation was that problems should be identified in advance by the application of a structured risk assessment (ie an application of the principles outlined in the yellow book). This intention appears not to have been addressed.\$</p>
<p>5            12/09/2006    11/2008</p> <p>Derailment of a train at Croxton Level Crossing</p> <p>Status: Implemented</p>	<p>Network Rail should update specification NR/SP/TRK/040 to include any revisions or clarifications of load parameters and assurance measures necessary to better define the performance requirements of level crossing panel systems (paragraph 417b).</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>6            12/09/2006    11/2008</p> <p>Derailment of a train at Croxton Level Crossing</p> <p>Status: Implemented</p>	<p>Network Rail should review how it controls any application and design change associated with level crossing panel systems, including working with suppliers, manufacturers and front-line staff (paragraph 417c). This should take account of the findings in paragraphs 397 to 402 of this report.</p>	<p>Network Rail has reported that its processes and requirements for new or change product proposals had not been clear at the time that Croxton level crossing was installed. However, actions already taken had addressed the issues already raised by the RAIB. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>8            12/09/2006    11/2008</p> <p>Derailment of a train at Croxton Level Crossing</p> <p>Status: Implemented</p>	<p>Network Rail should review their processes for approval of level crossing panels and consider adopting the principles of hazard identification and mitigation within their Engineering Safety Management System (paragraph 418).</p>	<p>Network Rail has reported that the actions it has already taken have addressed the issues raised by this recommendation.</p>
<p>1            10/08/2007    16/2008</p> <p>Derailment at Duddeston Junction, Birmingham</p> <p>Status: Implemented</p>	<p>Freightliner should investigate the possibility of modifying current, or developing new, software, to give warning if containers are loaded onto a wagon in a way that contravenes company loads standards with regard to the distribution of load. Appropriate solutions should be implemented.</p>	<p>Freightliner has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>2            10/08/2007    16/2008</p> <p>Derailment at Duddeston Junction, Birmingham</p> <p>Status: Implemented</p>	<p>Freightliner should take steps, including re-briefing and assessment, to ensure that loading staff clearly understand and can apply the company's rules on permissible loading of container wagons. Freightliner should monitor compliance with their loading standards to provide assurance that such rules are being complied with.</p>	<p>Freightliner has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>3            10/08/2007    16/2008</p> <p>Derailment at Duddeston Junction, Birmingham</p> <p>Status: Implemented</p>	<p>Freightliner should re-examine how they present information on permissible container wagon loads. They should aim to present the information in a clear unambiguous way that suits the needs of the user of the information, be they terminal staff, Freightliner management, wagon manufacturers or approval bodies. This will involve the modification of MIE 0767 and the possibility of generating other related documents suited to the particular needs of the recipients</p>	<p>Freightliner has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>4            10/08/2007    16/2008</p> <p>Derailment at Duddeston Junction, Birmingham</p> <p>Status: Implemented</p>	<p>Network Rail Vehicle Conformance Group should put in place procedures so that when considering derailment resistance during the approvals process of wagons, they determine the full range of loads and their distributions that can legitimately be encountered in service, and consider the sensitivity of the wagon to likely longitudinal and lateral offsets in loading. They should take these factors into account when deciding what testing and calculations need to be undertaken to demonstrate compliance with applicable derailment resistance standards.</p>	<p>Network Rail Vehicle Conformance Group has stated that it has considered this recommendation to be unreasonable but is prepared to participate with ongoing discussions about the application of the Railway Group Standards. ORR has raised the issue with ERA when drafting the revised Freight Wagon TSI. ORR consider that this recommendation has been implemented by alternative means and proposes no further action.</p>
<p>5            10/08/2007    16/2008</p> <p>Derailment at Duddeston Junction, Birmingham</p> <p>Status: Non-implementation </p>	<p>Freightliner should put in place procedures so that when procuring wagons, they unambiguously define to manufacturers and approvals bodies the full range of loads and distribution of loads that can reasonably expected to be encountered by the wagon in service.</p>	<p>ORR, Freightliner and RSSB met in September 2011 to discuss this recommendation, they concluded that it was not reasonable for the UK Freight Industry to attach any additional requirements relating to lateral load beyond that of other member states in Europe.</p> <p>ORR has advised RAIB that the proposed mechanism for managing the risk of offset loads would be unlikely to produce any tangible benefits given the limited history and data of this kind of incident and the impracticability of checking distribution of loads.</p> <p>The RAIB notes that the Group Standards and the associated guidance include a margin for the normal variation of vehicle parameters. However, the RAIB is still of the opinion that further data is needed so that the full range and distribution of loads can be understood. The raib is also concerned that load distribution was also a factor in the recent derailment of a container train at Reading West on 28 January 2012.\$</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation		Summary of current status (based on ORR's report to RAIB)
6 Derailment at Duddeston Junction, Birmingham Status: Implemented 	10/08/2007	16/2008 Freightliner should arrange that the FEA-B wagon wheel unloading performance is re-evaluated taking into account the full range of load conditions they permit (currently defined in MIE 0767) to confirm compliance with GM/RT 2141. This should consider sensitivity to longitudinal and lateral offsets in load that can reasonably be encountered in service.	Freightliner has carried out modelling of different configurations of containers, consequently the RAIB concluded that actions have been taken in response to the recommendation. However, this modelling had led Freightliner to the conclusion that they could relax their current restrictions consequently the RAIB is concerned that some of the actions they have taken has increased risk. Freightliner has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.\$
7 Derailment at Duddeston Junction, Birmingham Status: Implemented	10/08/2007	16/2008 Freightliner should act upon and close NIR 2084.	Freightliner has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
8 Derailment at Duddeston Junction, Birmingham Status: Implemented	10/08/2007	16/2008 Network Rail should amend NR/SP/TRK/001 section 11.4.2 to make clear into which regime, areas that are not covered by measurement vehicles but are operated at less than 20 mph (32 km/h), fall. They should also clarify under what conditions it is mandated for the TME to maintain a list of areas of track not covered by measurement vehicles.	Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
2 Derailment at Grayrigg Status: Implemented	23/02/2007	20/2008 The intention of this recommendation is that Network Rail should implement processes to gather and analyse data, both in the short term and thereafter, that will enable it to identify and monitor accident precursor events in its S&C. This information can then be used to identify potential problems before they can lead to catastrophic failure, and also to inform the development of process safety indicators (see Recommendation 14). Network Rail should implement processes to:  a. capture, and record on a single national database, data about component failures, and interventions made during maintenance and inspection activities, for each set of S&C;  b. use the data from a) above to monitor failure and intervention rates locally and nationally in the behaviour of S&C components;  c. identify precursor faults that might lead to more serious failures; and  d. identify those precursor faults where the failure and	ORR reports that it considers this recommendation to be implemented. RAIB notes that Network Rail is implementing a detailed strategy to address the need to gather and analyse data to enable it to identify and monitor accident precursor events in its S&C. However, it is recognised that full implementation of part a will take some time to achieve. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>3            23/02/2007    20/2008</p> <p>Derailment at Grayrigg</p> <p>Status: Implemented</p>	<p>intervention rates indicate a need to reduce the risk of catastrophic failure.</p> <hr/> <p>The intention of this recommendation is that Network Rail should implement the measures it identifies from Recommendations 2. Network Rail should introduce processes to implement any design modifications arising from Recommendation 2 using the principles outlined in Recommendation 1.</p>	<p>ORR reports that Network Rail has collected and analysed precursor data, this has been used to inform the re-design of the stretcher bar and the development of a roll-out strategy. RAIB notes Network Rail's intention to revisit its FEMECA analysis. ORR proposes to take no further action unless they become aware that the information provided becomes information.</p>
<p>14           23/02/2007    20/2008</p> <p>Derailment at Grayrigg</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is that Network Rail should have adequate monitoring of S&amp;C failure precursors. Network Rail should review and improve its management arrangements for monitoring performance in relation to the inspection and maintenance of S&amp;C assets, taking account of the guidance contained in HS(G) 254, 'Developing process safety indicators' by introducing an suitable 'leading' and 'lagging' performance indicators. The indicators should encompass measures of the reliability of both maintenance and inspection activities and the performance and condition of key components.</p>	<p>ORR reports that Network Rail has completed implementation of this recommendation.</p>
<p>5            29/08/2007    22/2008</p> <p>Train overspeeding through an emergency speed restriction at Ty Mawr</p> <p>Status: Implemented by alternative means</p>	<p>Network Rail should:</p> <p>a. review the circumstances of this incident and identify other parts of the network where the length of signal sections results in the potential for a significant period of time to elapse between a driver being informed of an ESR and the ESR being encountered; and</p> <p>b. for each location identified, include within the relevant Sectional Appendix any additional locations where drivers should be reminded of the presence of an ESR ahead and how and by whom that reminder will be administered (paragraph 122d).</p> <p>The purpose of this recommendation is to identify those areas of the national network where there might be significant elapsed time between a warning of an ESR being given and it being encountered and to provide further warnings to drivers, where practical.</p>	<p>ORR reports that Network Rail has implemented this recommendation by issuing specific box instructions to signallers at locations with long block sections, instructing signallers to remind drivers of long blocks when cautioned for an emergency speed restriction. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>6            29/08/2007    22/2008</p> <p>Train overspeeding through an emergency speed restriction at Ty Mawr</p> <p>Status: Implemented</p>	<p>Network Rail should modify procedure NR/PRC/MTC/MG0110 to list the information that the signaller is required to be told when an emergency speed restriction is to be imposed as defined in section 9.1 of module SP of the rule book (paragraph 123), and clearly identify who is responsible for providing each item of information (paragraph 124).</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>7            29/08/2007    22/2008</p> <p>Train overspeeding through an emergency speed restriction at Ty Mawr</p> <p>Status: Implemented</p>	<p>The Association of Train Operating Companies should develop guidance for train operating companies on 'for-cause' drugs and alcohol testing with the objective of achieving greater consistency in its application. The guidance should address the issue of who should have the authority to permit a driver to continue driving after an incident. It should also consider different scenarios where drugs and alcohol testing might be required, including how to deal with a situation where an incident requires a member of staff to be screened as soon as reasonably practicable and that member of staff is remote from a location where such testing can easily be administered (paragraph 125).</p> <p>The purpose of this recommendation is not to conduct a comprehensive review of drugs and alcohol policy or practice, but rather to offer guidance on the application of existing drugs and alcohol policy in order that a more consistent approach by train operating companies can be achieved.</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>1            28/02/2008    25/2008</p> <p>Network Rail's Management of Existing Earthworks</p> <p>Status: Implemented</p>	<p>Network Rail should conduct a study into the potential contribution to the assessment and understanding of earthworks risk from the following factors, and amend their processes as appropriate to include any improvements identified:</p> <ul style="list-style-type: none"> <li>a) the use of inspection intervals of one, five and ten years (paragraph 97);</li> <li>b) local maintenance staff not reporting all precursor earthworks related defects – these may have rectification measures applied locally without further reporting (paragraph 190);</li> <li>c) lack of a process for maintenance staff to report earthworks defects to the Territory Earthworks and Drainage Engineer organisation to enable appropriate action to be taken (paragraph 189);</li> <li>d) track inspection staff not routinely looking over cutting horizons (paragraph 137);</li> <li>e) a high focus by track inspection staff on track support areas and particularly embankments to the detriment of other earthworks elements (paragraph 138);</li> <li>f) track maintenance staff not having the capability, knowledge or time available to routinely inspect off-track issues – for example water in neighbouring land (paragraph 138);</li> </ul>	<p>ORR is satisfied that Network Rail has a process in place that broadly meets the requirements of this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

**Number/ Date/ Report No/  
Inv Title / Current Status**

**Safety Recommendation**

**Summary of current status (based on ORR's report to  
RAIB)**

g) the potential for earthworks examiners to not observe all relevant factors and indicators, because of the infrequent and seasonal visits (paragraph 95);  
h) the relative weighting attached to the risks from cuttings and embankments in the Slope Stability Hazard Index algorithm – and particularly in view of b), d),  
e) above (paragraph 68);  
i) the risk weighting attached to the operational consequence of an earthworks failure (paragraph 88); and  
j) the value of information sources used in other inspections and whether this could be utilised in the reduction of risk from an earthworks failure (paragraph 154).

6	28/02/2008	25/2008	Network Rail should clarify the requirements for maintenance inspectors to observe earthworks and develop an appropriate reporting process. This information should be included in NR/SP/TRK/001 (paragraphs 111 to 114).	Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
Network Rail's Management of Existing Earthworks				
Status: Implemented				
1	22/01/2008	01/2009	Network Rail should make adequate arrangements for the safe pedestrian use of West Lodge crossing. They should pay particular attention to the use of the crossing in darkness: the visibility of the relevant crossing features, the legibility of warning signs and the legibility of instructions for the use of the telephone (paragraph 89).	Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate. "Network Rail has reported taking action in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
Fatal accident at West Lodge crossing, Haltwhistle				
Status: Implemented				
2	22/01/2008	01/2009	Network Rail should identify any footpath crossings that do not provide adequate arrangements to protect users, and draw up and implement a programme to improve them. The programme should prioritise the order in which the crossings are improved, with crossings presenting the highest risk improved ahead of those of lower risk (paragraph 91a).	Network Rail reports that its footpath crossings are subject to routine inspections and assessments and the use of the ALCRM tool. However, ORR is concerned that improvements have not happened as quickly or effectively as it would wish. Network Rail is undertaking a national program to address deficiencies at footpath crossings, this is ongoing. Improvement works have been reported to have been completed at 824 crossings (with 41 proposed for closure. In parallel the risk management process is subject to review. ORR expects Network Rail's level crossings programme to be substantially completed by July 2012 and believes that this will be helpful in better managing level crossing risk in the future. ORR will continue to monitor the situation as part of its planned inspection work. ORR is content that good action is being taken on this recommendation. ORR will write to RAIB if it becomes aware that the information above is inaccurate
Fatal accident at West Lodge crossing, Haltwhistle				
Status: Implemented				

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>3            22/01/2008    01/2009</p> <p>Fatal accident at West Lodge crossing, Haltwhistle</p> <p>Status: Implemented</p>	<p>Network Rail should revise its management systems so that the findings of level crossing inspections and assessments are acknowledged, prioritised and acted upon to provide arrangements that adequately protect users (paragraph 91a)</p>	<p>Network Rail reports that its management systems are to be addressed as part of the ALCRM review.</p>
<p>4            22/01/2008    01/2009</p> <p>Fatal accident at West Lodge crossing, Haltwhistle</p> <p>Status: Implemented</p>	<p>Network Rail should revise its methods of crossing inspection and assessment so that they confirm that arrangements to protect users and safeguard the railway:</p> <p>(a) remain adequate in all normal and foreseeable operating conditions (paragraph 91b); and</p> <p>(b) make allowance for the mobility of likely users (paragraph 92).</p>	<p>Network Rail reports that this recommendation will be addressed by its review of ALCRM and risk management processes.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>1            05/12/2007    05/2009</p> <p>Runaway of a road rail vehicle at Glen Garry</p> <p>Status: Implemented</p>	<p>Network Rail should publish the gradient of lines in an easily accessible way, for example in the sectional appendix and at track access points (paragraph 117).</p>	<p>Network Rail have reported that they now provide gradient information to contractors in a spreadsheet format.</p> <p>Network Rail has reported that it has taken actions in response to this recommendation.</p>
<p>2            05/12/2007    05/2009</p> <p>Runaway of a road rail vehicle at Glen Garry</p> <p>Status: Implemented</p>	<p>Network Rail should brief their contractors using on track plant on the hazards of rail contamination and gradient to RRV operation (paragraph 115).</p>	<p>Network Rail has provided briefing material to its contractors:</p> <ul style="list-style-type: none"> <li>Safety Bulletins following Glen Garry and Severn Tunnel incidents;</li> <li>Animated reconstruction of Glen Garry;</li> <li>Coverage of Terry Terry Hoogan bod derailment included.</li> </ul> <p>Network Rail has reported that it has taken actions in response to this recommendation.</p>
<p>3            05/12/2007    05/2009</p> <p>Runaway of a road rail vehicle at Glen Garry</p> <p>Status: Implemented</p>	<p>Network Rail should require that contractors include the risks from rail contamination and gradient in their risk assessments along with proposed mitigation measures paragraph 115.</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>4            05/12/2007    05/2009</p> <p>Runaway of a road rail vehicle at Glen Garry</p> <p>Status: Implemented</p>	<p>Network Rail should enhance the Sentinel On Track Plant documentation for RRV operator training so that positive confirmation of the operator's understanding of the speed limit within a work site, and of the meaning of the term 'work site', is obtained (paragraphs 120 and 121).</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
5            05/12/2007    05/2009 Runaway of a road rail vehicle at Glen Garry  Status: Implemented	Network Rail should enhance the Sentinel On Track Plant documentation for RRV operator training to include advice to trainee operators on: I operating on gradients; I operating in low adhesion conditions; and I what to do in a braking emergency (paragraph 121).	Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
6            05/12/2007    05/2009 Runaway of a road rail vehicle at Glen Garry  Status: Implemented	Companies who own or operate RRV/trailer combinations not fitted with service brakes should provide clear guidance to machine operators on the maximum speed and hauled load that the RRV can operate to, given the gradient and track conditions expected or existing at site (paragraph 116). This guidance could take the form of a duty chart, covering all duties, displayed in the cab.	Network Rail has reported producing a chart depicting various stopping distances for RRVs in different conditions. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
7            05/12/2007    05/2009 Runaway of a road rail vehicle at Glen Garry  Status: Implemented	Network Rail should provide a time-bound plan for the elimination of the use of RRV trailers not fitted with service brakes from its network (paragraph 116).	Network Rail reports that the program for upgrading trailers (and RRVs) to have service brakes is progressing ahead of schedule. Currently it is anticipated that the majority of trailers will have been upgraded by early 2014. Network Rail has reported that it has taken actions in response to this recommendation.
1            25/01/2008    10/2009 Derailment at Santon near Foreign Ore Branch Junction,Scunthorpe  Status: Implemented	Network Rail should provide further guidance in the track inspection handbook associated with work instruction NR/WI/TRK/001 on the actions to be taken when there are track geometry irregularities close to each other that can combine to increase the derailment risk. In particular, Network Rail should review the minimum action requirements in table 8 of NR/SP/TRK/001 for lateral alignment irregularities, and if appropriate, revise it to state the measures to be taken on discovery of severe lateral alignment irregularities close to other track geometry irregularities, with timescales for action.	Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
2            25/01/2008    10/2009 Derailment at Santon near Foreign Ore Branch Junction,Scunthorpe  Status: Implemented	Network Rail should revise NR/SP/TRK/001 to give guidance on appropriate measures to be taken on discovery of excessive cant with timescales for action.	Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.



Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>4            25/01/2008    10/2009</p> <p>Derailment at Santon near Foreign Ore Branch Junction, Scunthorpe</p> <p>Status: In-progress</p>	<p>Network Rail should develop appropriate tools to analyse trends in track geometry recording systems in order to identify rapid deterioration in track geometry, with the information output from these tools provided to the local maintenance teams.</p>	<p>Network Rail have outlined the actions to be taken in response to the recommendation. A further update to RAIB is promised in April 2013.</p> <p>ORR are seeking further information.</p>
<p>5            25/01/2008    10/2009</p> <p>Derailment at Santon near Foreign Ore Branch Junction, Scunthorpe</p> <p>Status: In-progress</p>	<p>Network Rail should provide their inspection and maintenance staff with a single source of information that allows the identification of localised areas where track quality is poor, and is repeatedly deteriorating, due to discrete track geometry faults. In particular, information about the detection, measurement, repair and post-repair inspection of discrete track geometry faults should be recorded, together with references to related work orders that are recorded on Ellipse.</p>	<p>Network Rail have outlined the actions to be taken in response to the recommendation. A further update to RAIB is promised in April 2013.</p> <p>ORR are seeking further information.</p>
<p>7            25/01/2008    10/2009</p> <p>Derailment at Santon near Foreign Ore Branch Junction, Scunthorpe</p> <p>Status: In-progress</p>	<p>Network Rail should implement processes to investigate and monitor the effectiveness of repairs to repetitive track geometry faults, so that when a track geometry fault recurs, the reason for it coming back can be established, an appropriate repair method can be chosen and monitoring can be carried out to determine whether the second attempt to repair it has been successful.</p>	<p>Network Rail have outlined the actions to be taken in response to the recommendation. A further update to RAIB is promised in April 2013.</p> <p>ORR are seeking further information.</p>
<p>1            04/11/2007    11/2009</p> <p>RRV runaway incidents at Brentwood, Essex and at Birmingham Snow Hill</p> <p>Status: Implemented</p>	<p>Network Rail should require all organisations that are permitted to use high ride RRVs on its infrastructure to identify those machines that require the operator to be assisted by another person(s) during on/offtracking<sup>15</sup>, and to enhance their procedures so that (paragraph 235b):</p> <p>l for each machine, the operator is made aware that he needs assistance before he starts working with the machine; and</p> <p>l operators are aware of the need to come to a clear understanding with the person(s) assisting them before starting to on/off-track; this understanding should include, but not necessarily be limited to, the steps to be gone through, who is responsible for each step, and the clear and unambiguous communication that is to be used so that the RRV can be safely on/off-tracked.</p>	<p>ORR is content that this recommendation has been implemented by Network Rail and that Network Rail is carrying out a range of RRV assurance activities.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>2            04/11/2007    11/2009</p> <p>RRV runaway incidents at Brentwood, Essex and at Birmingham Snow Hill</p> <p>Status: Implemented</p>	<p>Network Rail should require all organisations that are permitted to use high ride RRVs on its infrastructure to review their procedures for on/off-tracking and also the supporting training given to their operators. If necessary, organisations should enhance their procedures and training so that (paragraphs 235a, 235b, 236a, 237a and 238b):</p> <p>l the defined steps their operators need to go through during on/offtracking result in a brake force sufficient to prevent the</p>	<p>ORR is content that this recommendation has been implemented by Network Rail and that Network Rail is carrying out a range of RRV assurance activities.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

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RRV running away on the maximum gradient permitted for on/off-tracking, and that this force is consistently applied at the holding end of the RRV (the end of the RRV that is opposite to the end at which the rail gear is being lowered (or raised));  
I the operator understands his responsibilities for following these defined steps and how the steps assure the braking condition described above; and  
I that if assistance<sup>15</sup> is required:  
O the respective roles of the operator and the person(s) assisting (machine controller or otherwise) are identified for each step; and  
O any special training and competency requirements for the person(s) assisting are identified and implemented, and that the operator understands his responsibilities for checking such competencies.

3	04/11/2007	11/2009	<p>RRV runaway incidents at Brentwood, Essex and at Birmingham Snow Hill</p> <p>Status: Implemented</p>	<p>Network Rail should enhance the relevant modules of the Sentinel training so that machine controllers (paragraphs 235a, 235b and 236a): I are aware that operators need to come to an understanding with any person assisting<sup>15</sup> them with on/off-tracking; and I understand the control measures that prevent an unbraked condition occurring during on/off-tracking.</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
4	04/11/2007	11/2009	<p>RRV runaway incidents at Brentwood, Essex and at Birmingham Snow Hill</p> <p>Status: Implemented</p>	<p>Network Rail should enhance the relevant modules of training given as part of the Sentinel machine controller competency scheme so that those persons holding this Sentinel competency are aware of the specific duties they should be competent to perform and any specific tasks, for example assisting<sup>15</sup> the operator with on/off-tracking, that this competency does not cover.</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
5	04/11/2007	11/2009	<p>RRV runaway incidents at Brentwood, Essex and at Birmingham Snow Hill</p> <p>Status: Implemented</p>	<p>Network Rail should enhance the relevant modules of Sentinel training for machine controllers to give guidance and practical training on the actions to be taken in the event of a runaway.</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
6	04/11/2007	11/2009	<p>RRV runaway incidents at Brentwood, Essex and at Birmingham Snow Hill</p> <p>Status: Implemented</p>	<p>Network Rail should review the MEWPs that were not modified as a result of the ORR Improvement Notice issued following the incident at Copenhagen Tunnel on 15 October 2006. If necessary, Network Rail should require that enhancements are made to these MEWPs so that they are not at risk of being in an unbraked condition during on/off-tracking.</p>	<p>Network Rail advised it had completed a final check of MEWPS [Mobile Elevated Work Platforms] requiring modification, as per the ORR improvement notice issued following the Copenhagen Tunnel incident, and confirmed that all relevant machines had been modified or removed from use, i.e. placed on the Network Rail Do not use list.. ORR proposes to take no further action unless they become</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>1            01/03/2008    12/2009</p> <p>Detachment of containers from wagons near Cheddington &amp; Hardendale</p> <p>Status: Implemented</p>	<p>Freight Operating Companies running wagons fitted with non-compliant UIC spigots, should review the threshold speeds in NIR 2350 above which special measures are taken when conveying empty or lightweight containers in windy conditions and check that the following factors are taken into account:  I local wind acceleration effects due to topography, on routes they cover;  I minimum container weights and container sizes being transported; and;  I design of the wagons used (e.g. conventional or spine type underframe).</p>	<p>aware that the information provided becomes inaccurate.</p> <p>Freight Operating Companies have reported that they have taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>2            01/03/2008    12/2009</p> <p>Detachment of containers from wagons near Cheddington &amp; Hardendale</p> <p>Status: Implemented</p>	<p>Freight Operating Companies running wagons fitted with UIC spigots should check that the spigots comply with UIC 571-4 and ensure noncompliant wagons are identified for special operational measures when carrying empty or lightweight containers in windy conditions. Particular attention should be given to the lateral spacing and the inward angular rotation of the spigots.</p>	<p>Freight Operating Companies have reported that they have taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>3            01/03/2008    12/2009</p> <p>Detachment of containers from wagons near Cheddington &amp; Hardendale</p> <p>Status: Implemented</p>	<p>Freight Operating Companies running wagons fitted with non-compliant UIC spigots, should develop and implement solutions to reliably retain empty or lightweight containers in windy conditions, in order to eliminate the need for special measures in the long term.</p>	<p>Freight Operating Companies have reported that they have taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>4            01/03/2008    12/2009</p> <p>Detachment of containers from wagons near Cheddington &amp; Hardendale</p> <p>Status: Implemented</p>	<p>Freight Operating Companies running wagons fitted with UIC spigots should review and, where necessary, amend their maintenance instructions for spigots to comply with the service checks specified in UIC 571-4 appendix C.</p>	<p>Freight Operating Companies have reported that they have taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>1            10/11/2008    28/2009</p> <p>Derailment of two locomotives at East Somerset Junction</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is for Network Rail to introduce a 'self-checking' procedure for staff working on their own, to be used when they are required to implement procedures to deal with specified types of equipment failure:</p> <p>Network Rail should consider how signallers working on their own can affirm that they have taken the correct actions when implementing procedures to cope with equipment failures that result in a degraded level of safety, and issue requirements to</p>	<p>ORR say that this rec non-implenetation.</p> <p>We would argue that Network Rail has implemented this recommendation in the sense that it has obviously considered how lone signallers can affirm that they have taken the correct actions (and concluded that there is no sensible way of doing it) and it has also identified whether there are circumstances under which it would be mandatory for signallers to obtain verification (it has concluded that there are none for lone signallers)..The only part of the recommendation that it has not implemented is</p>

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the routes on this subject. The guidance should identify whether there are any circumstances under which it will be mandatory for signallers to obtain verification of their actions by a second competent person, taking into account risk associated with speeds, frequency of movements and traffic type and include consideration of human factors (paragraph 200b).

the issuing of requirements to routes on the subject, but it cannot do so because its consideration has not resulted in any changes that can be included in requirements to the routes. We find it difficult to argue with the outcome of Network Rail's consideration. We had asked Network Rail to look at the issue because the lone signaller at Westbury Panel had no-one to oversee his actions during degraded working on the Merehead branch. Had the failure occurred a few hours earlier or later when there was another signaller present, this second person would have performed the task. We didn't have a solution, but we wanted Network Rail to think it through. It therefore appears that Network Rail has concluded that it is not necessary for a signaller's actions to be checked during degraded working, but that it's good practice to do so if the means of making such a check is readily available.

We are happy to note that it was Network Rail's intention to reinforce the message that signallers should obtain verification of their actions by a second competent person when such a person is present – this was planned for the Quarterly Signallers Brief in February 2010.



ORR hopes to include work in its inspection plan for 2013/14 to gather evidence to ascertain whether risks are adequately controlled and therefore be in a position to judge what control measures are appropriate.

RAIB suggest the status of this rec be shown as 'implemented'

2	23/05/2008	29/2009	<p>The intention of this recommendation is enable staff undertaking a specific maintenance activity to be clear about whether a particular form of protection that they wish to use provides for the safety of staff and trains. In particular it addresses the need to promote a better understanding of when T2 and T12 protection may be used and the restrictions imposed by the Rule Book and Network Rail instructions. It should encompass all forms of protection and regular maintenance activities including facing point lock tests and should clarify any issues relating to the 'safety of the track' and the 'safety of trains'.</p> <p>Network Rail should introduce a system whereby staff undertaking a specific maintenance activity can obtain clear guidance that a particular form of protection is suitable and provides for the safety of staff and trains. It should include clear guidance on when T2 and T12 protection may and may not be used and their applicability to specific types of work which may affect the 'safety of the track' and the 'safety of trains'.</p>	<p>ORR reports that recent changes to the rule book have clarified the issue identified in the investigation and that changes to Network Rails work planning system will assist the selection of the correct means of protection.</p> <p>Network Rail has reported that it has taken actions in response to this recommendation.</p>
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Serious injury sustained by a signal technician, Kennington Junction

Status: Implemented

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation		Summary of current status (based on ORR's report to RAIB)
3 23/05/2008 29/2009 Serious injury sustained by a signal technician, Kennington Junction Status: Implemented	The intention of this recommendation is to avoid doubt for those applying the requirements of the Rule Book.  Network Rail, in conjunction with the RSSB, should clearly define, as a minimum, what is meant by: 'affect the safety of the line'; 'affect the safety of trains'; 'affect the safety of train working'; and 'affect the normal passage of trains'.		Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
1 30/03/2009 30/2009 Accident at Dalston Junction Status: Implemented	Carillion Construction Ltd, through its Carillion Rail business unit, should review its processes for mobilisation of projects following contract award, so that these processes include arrangements for staff to become familiar with the areas in which they will work, and the provision of suitable and sufficient resources to facilitate this.		Carillion Construction Ltd has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
2 30/03/2009 30/2009 Accident at Dalston Junction Status: Implemented 	Carillion Construction Ltd, through its SkyBlue Rail business unit, should revise its operating procedures to include processes to enable people supplied to work in safety critical roles to be familiar with the locations where they are to work, either by previous experience or, where this is not the case, with familiarisation by an appropriate means provided by the client.		Carillion Construction Ltd has reported to ORR that it has taken actions to address this recommendation. RAIB is unclear from the report provided by ORR as to how the intent of this recommendation has been met. RAIB has sought further information from ORR.\$
3 30/03/2009 30/2009 Accident at Dalston Junction Status: Implemented	Carillion Construction Ltd, through its Carillion Rail business unit, should review its safety management policies and procedures relevant to the protection of people on or near the line that are used in the North London Railway Infrastructure Project and revise them where necessary, so that they are complete and coherent and describe a safety management system that is suitable and effective for the protection of the people who are working on or affected by the project.		Carillion Construction Ltd has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
1 04/07/2009 31/2009 Container doors hit pax trains, Penrith & Eden Valley Loop, Cumbria Status: Implemented 	The intention of this recommendation is to reduce the risk of container doors being opened by criminal attack.  Direct Rail Services and DB Schenker should review their existing control measures to secure container doors, and consider whether stronger seals, such as heavy-duty security seals, would reduce the risk of doors being vandalised and coming open outside of the loading gauge.		Direct Rail Services and DB Schenker have carried out a review in response to this recommendation. Direct Rail Services and DB Schenker propose no further action. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate. The RAIB is concerned to understand how DBS has concluded that the use of stronger seals would not reduce the risk of doors being opened by vandals or thieves. RAIB are seeking further information.\$

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>2            04/07/2009    31/2009</p> <p>Container doors hit pax trains, Penrith &amp; Eden Valley Loop, Cumbria</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to reduce the risk of open container doors being carried on existing wagons striking trains on adjacent lines, or striking passengers on stations or staff on track.</p> <p>Freight Operating Companies should investigate, and, where reasonably practicable, implement, measures so that open container doors cannot swing outside the loading gauge.</p>	<p>Freight Operating Companies have reported that they have taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>3            04/07/2009    31/2009</p> <p>Container doors hit pax trains, Penrith &amp; Eden Valley Loop, Cumbria</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to minimise the risk of open container doors being carried on future wagons striking trains on adjacent lines, or striking passengers on stations or staff on track.</p> <p>Freight Operating Companies should amend their specifications for future builds of container wagons to include measures that prevent open container doors swinging outside the loading gauge.</p>	<p>Freight Operating Companies have outlined the actions to be taken in response to the recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>3            18/12/2008    33/2009</p> <p>Collision &amp; derailment at North Rode btw Macclesfield &amp; Congleton</p> <p>Status: Implemented</p>	<p>The intention of Recommendation 3 is to reduce the risk of incursion from private land onto Network Rail infrastructure (paragraph 67b).</p> <p>Network Rail should:</p> <p>a) establish a method for assessing their infrastructure to identify the sites where the risk of incursion from private land is highest; and</p> <p>b) liaise with private land controllers, the Health and Safety Executive and local authorities to secure the improvement of the identified sites by those responsible for them.</p>	<p>Network Rail has outlined the actions to be taken in response to the recommendation. ORR are seeking further information.</p>
<p>5            27/01/2009    02/2010</p> <p>Derailment of a freight train near Stewarton, Ayrshire</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to make improvements to ensure that those responsible for making decisions regarding the structural safety of Network Rail's bridges are suitably informed and have access to a single collection of valid information for each bridge (paragraphs 256a, 256b, 256c, 256d, 256e, 257a, 257b and 257c)</p> <p>Network Rail should review its processes for the management of bridges, and their implementation, and make changes to confirm that:</p> <p>a single list referencing the most up-to-date information regarding the history, condition and assessed capacity of each</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

bridge is made available, in an appropriate format, to those making decisions regarding its structural safety;

there is a formal means of alerting Network Rail to urgent findings arising from assessment work;

all decisions regarding exposing hidden critical structural parts during examinations, and the justification supporting these decisions, are included in the bridge records;

the evaluation process includes consideration of the corroded condition of load bearing members, and guidance so that the effects of corrosion are understood and taken into account;

all decisions regarding intervention actions critical to the structural integrity of the bridge, made as a result of an evaluation, or otherwise, are recorded with the bridge records, including a record of the justification for the decision;

the implementation status of any intervention actions that are critical to structural integrity, and any outstanding risk issues, are included in the bridge records; and

any urgent defect reports and the action taken as result, together with the supporting justification, are included in the bridge records.

Paragraphs 266a, 266b, 266c and 266f outline improvements that Network Rail has reported it has already made regarding this.



6	27/01/2009	02/2010	<p>The intention of this recommendation is for Network Rail to ensure that the condition of previously recorded outstanding defects in critical structural elements continues to be monitored by the appropriate subsequent examination or inspection (paragraphs 256d and 256e)</p> <p>Network Rail should review its processes and make necessary changes so that previously reported defects affecting structural integrity that are not reported in subsequent examinations and inspections are identified; the revised processes should be such that all such discrepancies are resolved.</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
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Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAI B)
<p>7            27/01/2009    02/2010</p> <p>Derailment of a freight train near Stewarton, Ayrshire</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to establish if the assessment results of other bridges are incorrect because of critical dimensional assumptions, or inadequate allowance for material loss on load bearing members due to corrosion (paragraphs 255b, 257a, 257c and 258).</p> <p>Network Rail should identify all underbridge assessments where, for load bearing members, there have been reports of severe corrosion that has not been accounted for, or critical dimensions have been assumed, and take suitable steps to secure the safety of trains and the public.</p> <p>Paragraph 264 outlines work that Network Rail has reported that it is currently doing with regards to this.</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>2            10/03/2009    03/2010</p> <p>Derailment of a DLR train near West India Quay station, London</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to improve the effectiveness of control centre controllers during degraded operations.</p> <p>Docklands Light Railway Ltd, in consultation with Serco Docklands, should review the alarm management systems in the SMC, and implement any enhancements necessary to maximise the effectiveness of controllers during degraded modes of operations. The review should include:</p> <p>the number of alarms generated and their value to controllers;</p> <p>how they are displayed;</p> <p>actions in response to the alarms;</p> <p>the filters available to the controllers; and</p> <p>control room procedures and guidance</p>	<p>Docklands Light Railway Ltd, in consultation with Serco Docklands have reported that they have taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>4            10/03/2009    03/2010</p> <p>Derailment of a DLR train near West India Quay station, London</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to assist passenger service agents to identify the indication displayed at point position indicators when driving their trains in a manual type mode.</p> <p>Docklands Light Railway Ltd should replace all point position indicators with ones that are more conspicuous (when lit) as soon as reasonably practicable.</p>	<p>Docklands Light Railway Ltd has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>



Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>1            22/03/2009    04/2010</p> <p>Incident at Greenhill Upper Junction, near Falkirk</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to make it clear in maintenance documentation that if installation work covered by maintenance testing arrangements is partially carried out, off site, as pre-work, the work should be independently tested so far as is practicable at that stage. The extent of the testing should be confirmed on a written record that is available for those completing the testing following site installation. A tester should be in overall charge of the testing as required by current standards.</p> <p>While maintaining the requirement that one maintenance tester should be in overall charge of the testing, Network Rail should revise its maintenance documentation such as the SMTH to make it explicitly clear that if installation work is carried out off site in advance of site work, this pre-work should be tested if practicable at that stage (paragraphs 204a, b and 208d).</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>2            22/03/2009    04/2010</p> <p>Incident at Greenhill Upper Junction, near Falkirk</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is that for planned project work such as the HW1000 point machine renewal project in Scotland, testing should be planned in advance and not left to the time of site installation.</p> <p>Network Rail should revise its procedures so that where planned project work is carried out under the SMTH, the arrangements for testing of the completed works (and any partially completed works) should be planned and documented in advance and briefed to those undertaking the work prior to the commencement of those works (paragraphs 204c, 206a and 208c).</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>3            22/03/2009    04/2010</p> <p>Incident at Greenhill Upper Junction, near Falkirk</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to make clear in maintenance documentation the correct intent and method of carrying out points testing.</p> <p>In respect of points testing, Network Rail should clarify and brief their staff as to:</p> <ul style="list-style-type: none"> <li>a. whether or not the signaller's indications should be monitored during the out of correspondence test (paragraphs 204d and 209a);</li> <li>b. the method of carrying out the detection test of HW type point machines (paragraph 209b); and</li> <li>c. the need to continually monitor the detection relays during the manual operation of points when the out of correspondence test is being carried out. The points should be moved at a rate that</li> </ul>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>4                      22/03/2009      04/2010</p> <p>Incident at Greenhill Upper Junction, near Falkirk</p> <p>Status: Implemented</p>	<p>allows any false operation of the relays during their travel to be observed (paragraph 209c).</p> <hr/> <p>The purpose of this recommendation is the creation of a process suitable for the installation and testing relating to small-scale enhancement projects, requiring a limited change in the design, such as the HW1000 point machine renewal project in Scotland whose scope had to be reduced to fit the requirements of maintenance testing. The process would contain less onerous requirements than in works testing but more onerous requirements than in maintenance testing.</p> <p>Network Rail should consider the introduction of a process that is suitable for planned small-scale enhancement projects of the type originally conceived for the HW1000 point machine renewal project in Scotland. Consideration should be given to the inclusion of the following elements in any new process:</p> <ul style="list-style-type: none"> <li>I a project specification;</li> <li>I the issue of design drawings;</li> <li>I a strategy for the testing, including the resources required;</li> <li>I the appointment of the tester in advance;</li> <li>I a written test plan; and</li> <li>I a system that documents the completion of specific stages of the testing (paragraphs 205a, 208a, b, c and d).</li> </ul>	<p>Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>5                      22/03/2009      04/2010</p> <p>Incident at Greenhill Upper Junction, near Falkirk</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to enhance the system under which records of work carried out under the SMTH are made, in order to provide better traceability and auditability of what has been done.</p> <p>Network Rail should review the adequacy of the system of written records arising from work carried out under the SMTH so that the completion of specific stages of work covered by the SMTH gives rise to specific records of what has been done (paragraph 208a).</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>6                      22/03/2009      04/2010</p> <p>Incident at Greenhill Upper Junction, near Falkirk</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to improve the system by which copies of maintenance drawings, marked with handwritten annotations showing alterations, are updated.</p> <p>Network Rail should revise its current system for the updating of amended maintenance drawings with the aim of reducing the time taken to do so. This should include prescribing clear timescales in standards (paragraph 209d).</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>2            06/05/2009    08/2010</p> <p>Fatal accident at Fairfield crossing, Bedwyn</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to ensure that the risk to users of level crossings is properly managed.</p> <p>Network Rail should review the way it manages the risk to users at footpath level crossings, with the objective of highlighting to assessors when sighting is below the mandated standard, and providing clear guidance on the action to be taken if sub-standard sighting is identified during data collection or assessment.</p>	<p>Network Rail reports that a list of sighting deficient crossings has been drawn up and work is continuing to identify improvements. The national sighting improvement program is reported to be in an advanced stage. Improved training to assessors is ongoing.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>1            04/01/2010    10/2010</p> <p>Collision at Exeter St Davids station</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to alert train drivers to the possibility of low adhesion conditions in the vicinity of level crossings located in close proximity to other hazards.</p> <p>Train operators should, for locations where hazards exist immediately beyond a level crossing such as high risk signals, bay platforms or stations with permissive working, highlight within their route risk assessments and route learning and briefing material the possibility of drivers encountering unexpected low adhesion conditions at that crossing and the risk arising from wheel slide.</p>	<p>All Train Operators have reported that they have taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>4            23/09/2009    12/2010</p> <p>Overhead line failure, St Pancras International</p> <p>Status: Implemented </p>	<p>The purpose of this recommendation is to ensure coherence between the specifications for equipment components.</p> <p>Network Rail should review, and if appropriate amend, the requirements for the performance of electrification systems being brought into use so that the electrical protection system, the OHLE and its rating provide an adequate margin of protection against all reasonably foreseeable electrical hazards.</p>	<p>ORR reports that Network Rail has carried out extensive testing on all types of OLE installed on the National Network, it is not clear to the RAIB whether the results of the testing are to be reflected in revised standards or specifications. Further information is sought from ORR. \$</p>
<p>5            23/09/2009    12/2010</p> <p>Overhead line failure, St Pancras International</p> <p>Status: Implemented </p>	<p>The purpose of this recommendation is to remind the EMMIS controller that a safety process has to be completed before a circuit breaker that has opened owing to a sustained fault may be closed.</p> <p>Network Rail (CTRL) should investigate the possibility either of causing a suitably worded reminder, which must be responded to, to appear automatically on the EMMIS controller's screen warning of the safety process to be followed before closing a circuit breaker which has opened on automatic reclosure or of introducing other effective means of reminding the controller of the correct procedure to be followed.</p>	<p>Network Rail have carried out a review in response to this recommendation.</p> <p>No change to the EMMIS screen display are proposed but procedures and training have been updated and improved. The RAIB is concerned that no warning of safety process is to be followed is displayed before closing a circuit breaker and is seeking further information on how it was concluded that no further reminder is necessary. \$</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>1            02/12/2009    15/2010</p> <p>Fatal accident at Whitehall West junction, Leeds</p> <p>Status: Implementation ongoing</p>	<p>The intention of this recommendation is to reduce the likelihood of lookouts moving from a safe position.</p> <p>Network Rail should consider ways to reduce the risk of lookouts moving dangerously close to trains and if appropriate make arrangements to physically identify a safe position by:</p> <ul style="list-style-type: none"> <li>a. marking its limits on the ground;</li> <li>b. placing barriers at its limits;</li> <li>c. placing a rest in a safe position to allow a lookout to remain in comfort; or</li> <li>d. other appropriate arrangements.</li> </ul>	<p>Network Rail reports that it has carried out research into ways of enhancing the vigilance of lookouts and has implemented an action plan to address various solutions. This will include evaluating the impact of the use of a fence to mark the Lookouts boundary.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate. The timescale for completion is June 2012.</p>
<p>2            02/12/2009    15/2010</p> <p>Fatal accident at Whitehall West junction, Leeds</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to reduce the likelihood of delay in the arrival of an ambulance at a rail accident site.</p> <p>The ambulance services of the United Kingdom should consider ways to reduce the risk of ambulance drivers being unable to find places on the railway that do not have postcodes and if appropriate make arrangements for them to navigate to those places using:</p> <ul style="list-style-type: none"> <li>a. grid references; or</li> <li>b. other appropriate arrangements.</li> </ul>	<p>The UK Ambulance services have reported that actions have been taken in response to this recommendation.</p> <p>Yorkshire Ambulance Service has reported to the RAIB that technological advances have led to improved mapping functionality. They also report that data from Network Rail has been input to their database to assist the location of access points.</p>
<p>1            29/09/2009    16/2010</p> <p>Fatal accident at Halkirk level crossing, Caithness</p> <p>Status: Implementation ongoing</p>	<p>The intention of this recommendation is that Network Rail should maintain the backboards fitted to road traffic light signals at level crossings so as to maximise the contrast between the lit red light unit and the backboard.</p> <p>Network Rail should enhance the maintenance and inspection instructions relating to road traffic light signals, and brief staff accordingly, with the objective of ensuring that the backboards to level crossing road traffic light signals are maintained to provide the best possible contrast between a lit red light unit and its backboard (paragraph 135b).</p>	<p>Network Rail have outlined the actions to be taken in response to the recommendation. Target date 31/3/13.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

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<p>5            29/09/2009    16/2010</p> <p>Fatal accident at Halkirk level crossing, Caithness</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to make staff carrying out level crossing inspections and maintenance aware of the difference between the visibility of road traffic light signals and their alignment and how they may determine that the lights are correctly aligned.</p> <p>Network Rail should improve the guidance to staff and brief its staff who undertake the inspection and maintenance of level crossings on how they should check that road traffic light signals are correctly aligned and how this differs from them being visible (paragraph 137a).</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>6            29/09/2009    16/2010</p> <p>Fatal accident at Halkirk level crossing, Caithness</p> <p>Status: Implementation ongoing</p>	<p>The intention of this recommendation is to cause Network Rail to change the design of long hoods so that they are more effective and to give its staff guidance on the criteria under which they should be fitted.</p> <p>Network Rail should review the design of long hoods that can be fitted at level crossings and implement any necessary changes identified to make them more effective. Guidance should also be issued to its staff on the specific circumstances of site orientation and prevailing lighting so that their use is optimal (paragraph 137b).</p>	<p>Network Rail has reported that the design of road traffic signal hoods is under review and testing of an alternative design is being undertaken.</p> <p>ORR are seeking further information.</p> <p>Network Rail have reviewed the size of long hoods, ORR are waiting for confirmation that suitable guidance has been issued to staff.</p>
<p>2            19/12/2009    18/2010</p> <p>Near-miss on Victory level crossing, near Taunton, Somerset</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to assist level crossing inspectors in the identification of hazards within the usable crossing surface that present hazards to small wheels and to better reflect the requirements of Network Rail Company Standard NR/L2/SIG/30017.</p> <p>Network Rail should enhance its level crossing inspection standards and checklist forms, and the data collection forms used in the level crossing risk assessment process, to highlight the potential hazards from inconsistent crossing surfaces to small wheels such as those on wheelchairs and children's pushchairs and arrange suitable training/briefing for staff using the forms (paragraphs 95b and 96b).</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>3            19/12/2009    18/2010</p> <p>Near-miss on Victory level crossing, near Taunton, Somerset</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to evaluate the effectiveness and safety benefits of possible solutions for assisting users of level crossings who may have difficulty negotiating flangeway gaps.</p> <p>Network Rail should, taking account of research in this country and developments overseas (paragraph 83), review methods for minimising the hazards from the flangeway gap at level</p>	<p>Network Rail have carried out a detailed review urged by the recommendation and concluded that there is no suitable product available at present. However, Network Rail is committed to consider recent promising developments for use at skew crossings.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

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crossings, particularly those that are skewed relative to the roadway or path, to users with small-wheeled equipment, such as wheelchairs and pushchairs, with a view to evaluating the costs and benefits of options for improving the safety of users of level crossings (paragraph 95d).

4            19/12/2009    18/2010  
Near-miss on Victory level crossing, near  
Taunton, Somerset

Status: Implemented

The purpose of this recommendation is for Network Rail to review and improve its arrangements for commissioning follow-up activities when safety-related work at level crossings has not been completed in accordance with an agreed specification.

Network Rail should conduct a review of the adequacy of its arrangements for addressing the timely correction of deficiencies when safety-related work at level crossings has not been completed in accordance with an agreed specification. Any reasonably practicable measures identified during this review should be implemented (paragraph 97).

Network Rail has reported that it has taken actions in response to this recommendation.  
ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.

1            28/11/2009    19/2010  
Derailment near Gillingham tunnel, Dorset

Status: In-progress

This recommendation is intended to reduce the risk which may be created by off track drainage overflowing.

Network Rail should instigate a process to:

I Identify all locations where unsatisfactory operation of off track drainage is a significant risk to railway safety. Identifying these locations should be assisted by use of information being collected as part of Network Rail's on-going drainage asset surveys, knowledge already required for adverse weather planning and data being obtained from on-going studies to identify locations where ground topography concentrates water flows.


I For all such locations establish a programme to:

o Determine for each location the site specific parameters which are sufficient to ensure satisfactory off track drainage performance. These parameters should include ditch sizes and the extent to which roots may remain in place. The parameters shall be verified by a drainage professional.


o Maintain off track drainage to comply with these parameters.

Network Rail has reported that it has taken actions in response to this recommendation. All drainage is being surveyed to compile a comprehensive asset list and condition record for off track and track drainage assets, this is due for completion by June 2012.  
ORR is continuing to engage with Network Rail to assure that at each location the site specific parameter are sufficient to ensure satisfactory performance.  
ORR are seeking further information.

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<p>2            28/11/2009    19/2010</p> <p>Derailment near Gillingham tunnel, Dorset</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to improve compliance with Network Rail's requirements for earthwork stewardship in South East Territory.</p> <p>Network Rail should examine the extent of compliance with its requirements for the management of earthworks in Southeast Territory and put in place management processes to ensure full compliance.</p> <p>These processes should cover:</p> <p>I Briefing staff and, if necessary, clarifying standards, so that all earthwork evaluations take full account of all relevant historical records already held by Network Rail, and any other readily available records. (If necessary, Network Rail should modify its archive retrieval system to allow efficient recovery of these records.)</p> <p>I Improving compliance with the NR/L2/CIV/086 requirement that all earthworks in 'poor' condition are subject to re-evaluation whenever examinations show their condition has worsened.</p> <p>I Providing a comprehensive extreme weather plan (including actions unrelated to flood and scour) in accordance with TRK/1010 for the Wessex Route and for any other areas where extreme weather plans are not fully compliant with TRK/1010. Current practice should be included in these plans as soon as practical.</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>3            28/11/2009    19/2010</p> <p>Derailment near Gillingham tunnel, Dorset</p> <p>Status: Implemented</p>	<p>This recommendation is intended to prevent errors from previous earthwork examinations being carried forward into later examination reports.</p> <p>Network Rail should modify the earthwork re-examination process so that earthwork examiners must positively confirm the accuracy of all examination data including any data which remains unchanged from the previous examination.</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>4            28/11/2009    19/2010</p> <p>Derailment near Gillingham tunnel, Dorset</p> <p>Status: Implemented</p>	<p>This recommendation seeks to ensure sufficient professional drainage expertise is available in SET without compromising other necessary activities.</p> <p>Network Rail should determine, and subsequently keep under review, both the actual workload of the E&amp;DT and whether existing resources are sufficient. If not sufficient, Network Rail should provide additional resources to suit the workload.</p>	<p>Network Rail has reported that the resources in their Earthworks and Drainage teams has been recently reviewed and strengthened.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation		Summary of current status (based on ORR's report to RAIB)
5 Derailment near Gillingham tunnel, Dorset  Status: Implemented	28/11/2009	19/2010	<p>This recommendation is intended to improve the accuracy of earthwork examination reports.</p> <p>Network Rail should modify its earthwork standards to require that the earthwork examination process includes checking that the drainage observations included in the examination report are consistent with any drain location and drain performance information known to maintenance teams.</p>
1 Incident at Romford Station  Status: Implemented 	04/02/2010	20/2010	<p>The intention of this recommendation is that the PGA wagon fleet should be modified to enable wagon discharge operators to have a clear indication of the state of the doors.</p> <p>DB Schenker should investigate the design and the maintenance arrangements of the hopper doors of PGA type wagons and their control gear, and evaluate whether it is feasible to devise a means by which the open, closed or locked status of the door can be more clearly indicated to the operator than is the case at present, and implement this change if it is reasonably practicable to do so (paragraphs 79b and 81).</p>
2 Incident at Romford Station  Status: Implemented	04/02/2010	20/2010	<p>The intention of this recommendation is that staff at terminals served by DB Schenker should have guidance on how to operate wagon doors and check they are secure, and adequate light to enable them to do this.</p> <p>DB Schenker should issue to its staff and relevant customers guidance and instructions on how to correctly operate the doors of all the types of wagons in use by the company, and how to check that the doors of wagons are secured closed. As part of this work, DB Schenker should review the visibility of wagon doors and the means of ensuring suitable levels of lighting to enable staff to check them (paragraphs 79b and 81).</p>
3 Incident at Romford Station  Status: Implemented	04/02/2010	20/2010	<p>The intention of this recommendation is to improve the competence of DB Schenker ground staff.</p> <p>DB Schenker should carry out a review of the training, monitoring and competence of all ground staff, with particular reference to the use of PGA wagons and the supervision and operation of yards. This review should include:</p> <p>I The training of staff in the preparation and examination of trains before departure; and</p> <p>I Instructions to staff on when train preparation and examination</p>



Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
	<p>should be done.</p> <p>The results of this review should be implemented as appropriate (paragraph 80).</p>	
<p>4            04/02/2010    20/2010</p> <p>Incident at Romford Station</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to learn lessons from the incorrect application of DB Schenker's safety management system.</p> <p>DB Schenker should investigate the reasons why formal safety validation of organisational changes (including risk assessment) did not take place in respect of the changes implemented at Acton Yard in 2009-10, and implement any recommendations arising from this investigation (paragraph 83).</p>	<p>DB Schenker has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>5            04/02/2010    20/2010</p> <p>Incident at Romford Station</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to introduce a procedure within DB Schenker for responding to reports of defective wagons that come from outside the company.</p> <p>DB Schenker should devise and implement a procedure for handling reports of defective wagons that are received from sources outside the company (paragraph 84).</p>	<p>DB Schenker has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>1            06/03/2010    01/2011</p> <p>Passenger train struck by object at Washwood Heath</p> <p>Status: Implemented </p>	<p>The purpose of this recommendation is to put in place a clear requirement to have safe system of work documentation for staff and OTP checked by a competent person other than its author.</p> <p>Network Rail should put in place a system that requires that all safe systems of work documents, including any subsequent changes, are independently checked by a competent person, and audit compliance with it.</p>	<p>ORR has reported that Network Rail now require that all Safe Systems of Work (SSoW) should be checked by a Controller of Site Safety (COSS). Whilst recognising the value of this, the RAIB is concerned that there is a risk that a SSoW developed by a Manager may not be challenged by the COSS. The issue raised in the investigation report, the absence of an independent check of SSoW developed by Track Section Managers and Assistant Track Section Managers has not been fully addressed. The RAIB has written to the ORR to express its concern.\$</p>
<p>2            06/03/2010    01/2011</p> <p>Passenger train struck by object at Washwood Heath</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to improve management surveillance and supervision at Sallley IMDU to detect instances of individual supervisors implementing unsafe systems of work and to reinforce the worksafe procedure.</p> <p>Network Rail should determine why its management systems did not prevent the unsafe system of work being used for the relaying and make the necessary changes to prevent recurrence. The investigation should also consider why staff did not attempt to invoke the worksafe procedure and how the worksafe procedure can be made more effective.</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

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<p>3            06/03/2010    01/2011</p> <p>Passenger train struck by object at Washwood Heath</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to extend the work that Network Rail is currently undertaking on behavioural issues associated with track worker safety to improve the training and assessment of existing staff (linked to recommendation 9 from the RAIB's Trafford Park investigation).</p> <p>Network Rail should extend the work it is undertaking to improve the methods and criteria used when selecting staff to undertake safety leadership roles to include consideration of the training and assessment of those staff who are already qualified in those roles.</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>4            06/03/2010    01/2011</p> <p>Passenger train struck by object at Washwood Heath</p> <p>Status: In-progress</p>	<p>The purpose of this recommendation is to ensure the adequacy of checks with the requirements of the rule book within possessions (including protection of adjacent open lines).</p> <p>Network Rail should review the adequacy of its arrangements for the routine checking of compliance with the rule book within possessions, including checks on compliance with rule book module OTP in respect of adjacent lines open to traffic. The review should consider the frequency of such checks and the competency of those involved. Any improvements identified as part of this review should be implemented.</p>	<p>Network Rail have outlined the actions to be taken in response to the recommendation.</p> <p>ORR are seeking further information.</p>
<p>2            22/12/2009    02/2011</p> <p>Near miss involving a freight train &amp; two passenger trains, Carstairs</p> <p>Status: Implemented</p>	<p>The intent of this recommendation is to ensure that any risks to the safety of the line resulting from falling or disturbed snow affecting different types of rolling stock are assessed and that rolling stock specific risk controls are considered in advance of adverse weather. For example, when snow is falling or is being disturbed by the passage of trains, there is less potential for snow and ice ingress when trains run at a reduced speed. A lower speed also allows the train to stop in a shorter distance than it would otherwise if it had a problem with its brakes due to snow or ice.</p> <p>Freight operating companies should carry out a review of the safety impact of their freight trains operating in snowy conditions. The review should take into account the likelihood of different types of rolling stock disturbing lying snow and the consequent impact on the operation of their brake equipment. The findings should inform a consideration of the need for rolling stock specific risk control measures to be imposed when justified by the conditions. These could include reducing the maximum permitted speed of some types of train, additional actions by train staff and the re-routing of certain types of rolling stock away from adverse winter weather or from routes containing steep gradients (paragraphs 141a, 141b, 143a, 144a</p>	<p>Freight operating companies have reported that they have taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

and 146b).

1	16/01/2010	04/2011	<p>Fatal accident at Moreton-on-Lugg, near Hereford</p> <p>Status: In-progress</p>	<p>The intention of this recommendation is, where necessary, to implement engineered safeguards at level crossings similar to Moreton-on-Lugg. The objective is to reduce the risk of signallers opening the crossing to road users when a train is approaching, particularly as a result of interruptions or other out-of-course events.</p> <p>Network Rail should identify level crossings operated by railway staff where a single human error could result in the road being opened to the railway when a train is approaching. At each such crossing, Network Rail should consider and, where appropriate, implement engineered safeguards. Safeguards for consideration should include additional reminder appliances, alarms to warn of the approach of trains, approach locking, locking of the route, run-by controls, and local interlocking of train detection and signalling systems with level crossing controls (paragraphs 175 and 178).</p>	<p>ORR reports that Network Rail were due to complete the installation of approach locking for level crossing barriers at 44 identified high priority sites, including Moreton - on - Lugg, by 31 March 2012. The remainder of the crossings without approach locking are to be fitted with approach locking by 31 March 2013.</p>
2	16/01/2010	04/2011	<p>Fatal accident at Moreton-on-Lugg, near Hereford</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is that implementation of Network Rail's level crossing risk management process will identify and assess the risks from all aspects of the design, operation and maintenance of equipment and systems, including signalling, so that mitigation measures can be identified and implemented.</p> <p>Network Rail should enhance its level crossing risk management process to include identification, assessment and management of the risk associated with:</p> <p>human error by signallers and crossing keepers;</p> <p>operational arrangements, in particular with regard to the ability of operators to cope with interruptions, such as telephone calls, and other out-of-course events;</p> <p>equipment design, in particular where it is not compliant with latest design standards; and</p> <p>maintenance and inspection arrangements, particularly where these are used to identify and remedy any equipment functional and performance deficiency.</p> <p>The process should allow for sufficient liaison between the relevant engineering and operational departments. When addressing risks identified by the implementation of the revised</p>	<p>ORR reports that Network Rail have carried out work to identify safety critical errors associated with Signallers and Crossing Keepers. The human failure modes identified are to be addressed by the new signaller competency process and incorporated into the current risk assessment process. Timescale for completion 31 May 2012.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>3            16/01/2011    04/2011</p> <p>Fatal accident at Moreton-on-Lugg, near Hereford</p> <p>Status: In-Progress</p>	<p>process, Network Rail should prioritise the implementation of required mitigation measures to level crossings where consequences of operator error are severe and not protected by engineered safeguards (paragraphs 171, 172a, 172b, 173, 174a, 174b, 176b and 177).</p> <p>The intention of this recommendation is to ensure that whenever signalling renewal or major maintenance work is planned, those responsible understand when it is necessary to formally evaluate the opportunity to improve compliance with the latest engineering standards.</p> <p>Network Rail should develop and implement (paragraph 176a):</p> <p>criteria for when it is necessary to formally assess the need to bring existing signalling and level crossing assets in line with latest design standards; and</p> <p>a process to record the findings of such assessments.</p>	<p>Network Rail is proposing a review of its policy in the areas identified in the recommendation.</p> <p>ORR are seeking further information.</p>
<p>4            16/01/2010    04/2011</p> <p>Fatal accident at Moreton-on-Lugg, near Hereford</p> <p>Status: Implementation ongoing</p>	<p>The intention of this recommendation is for Network Rail to understand the risk posed by the use of non-critical information systems in signal boxes and implement practical mitigation measures.</p> <p>Network Rail should assess the risk associated with the use of TRUST, and similar information systems, by signallers when undertaking safety critical activities, and implement appropriate mitigation measures. This assessment should include a review of the extent to which signallers may be distracted or misled, and the influence of factors such as the location and orientation of any associated equipment (paragraphs 171 and 172b).</p>	<p>ORR reports that Network Rail have a program of work to assess the risk associated with TRUST, and similar information systems.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>1            12/05/2010    05/2011</p> <p>Derailment engineering train between Gloucester Rd &amp; Earls Ct LU</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is for data from any equipment used to assess the track asset to show clearly what safety faults have been identified and where they are located. This will help to promote a situation where those track faults that are more reliably detected by asset inspection equipment are acted upon.</p> <p>London Underground, in consultation with Tube Lines, should arrange for all data on track faults identified by asset inspection equipment, such as the asset inspection train, to be presented clearly. The procedures for managing the data should indicate how required remedial actions are planned, prioritised and executed by those in receipt of the data (paragraph 148b).</p>	<p>London Underground, in consultation with Tube Lines have reported that they have taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>2            12/05/2010    05/2011</p> <p>Derailment engineering train between Gloucester Rd &amp; Earls Ct LU</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is for London Underground to make improvements to the way in which track faults are identified and classified during track inspections, thus reducing the risk that faults will be overlooked.</p> <p>London Underground, in consultation with Tube Lines, should review standard 1-159 'Track- dimension and tolerances' with a view to making changes to the standard or take other appropriate steps to make it easier for patrollers and inspectors to identify and record issues of concern (paragraph 151a).</p>	<p>London Underground, in consultation with Tube Lines have reported that they have taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>3            12/05/2010    05/2011</p> <p>Derailment engineering train between Gloucester Rd &amp; Earls Ct LU</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to allow sufficient time for track patrols and inspections. This will enable staff to meet the requirements of the relevant standards for these activities, so that track faults are not missed.</p> <p>Tube Lines should review and revise its patrol route risk assessments, and inspection routes, taking account of human factors issues, to ensure there is sufficient time available to complete thorough and detailed patrolling and inspection activities in accordance with relevant standards (paragraph 149a).</p>	<p>Tube Lines has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>4            12/05/2010    05/2011</p> <p>Derailment engineering train between Gloucester Rd &amp; Earls Ct LU</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is for patrollers and inspectors to be adequately trained and undertake regular assessments to ensure their ongoing competence.</p> <p>Tube Lines should review its training and competence management processes for patrollers and inspectors. The review should aim to establish a comprehensive training programme for each grade of staff and a regular cycle of rigorous competence assessments (paragraphs 148a and 149b).</p>	<p>Tube Lines has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>5            12/05/2010    05/2011</p> <p>Derailment engineering train between Gloucester Rd &amp; Earls Ct LU</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is for Tube Lines to modify its processes to make sure it assesses the effect of vacancies in safety-critical positions within Tube Lines asset maintenance organisation immediately. This should enable appropriate steps to be taken so that there is no detrimental effect on safety-critical activity.</p> <p>Tube Lines should modify its processes to include the requirement to actively monitor and assess safety critical vacancies within its asset maintenance organisation. Where key vacancies are identified the reasons for not filling the post should be explored and assessments undertaken to understand and control the risk arising. The review of key vacancies should</p>	<p>Tube Lines has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>6            12/05/2010    05/2011</p> <p>Derailment engineering train between Gloucester Rd &amp; Earls Ct LU</p> <p>Status: Implemented</p>	<p>not be limited to management grades but should include key personnel, such as those involved in asset inspections and asset condition recording (paragraph 151d).</p> <hr/> <p>The purpose of this recommendation is for Tube Lines to ensure that systematic and regular reviews are undertaken of the quality of track patrols and inspections, including the recording of faults found and their rectification. This should achieve a more rapid identification of lapses in the quality of track patrols and inspections which could result in safety-critical faults not being identified and rectified.</p> <p>Tube Lines should improve its assurance processes to ensure a robust system of assurance activities is undertaken, with particular emphasis on practical activities. The activities should target the quality of track patrols and inspections, and the identification and prioritisation of faults. The improvements should include a process for following-up and rectifying issues identified (paragraphs 150a, and 151d).</p>	<p>Tube Lines has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>7            12/05/2010    05/2011</p> <p>Derailment engineering train between Gloucester Rd &amp; Earls Ct LU</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is for London Underground to make improvements to its processes for following-up issues found during its audit and surveillance of Tube Lines track maintenance activities.</p> <p>London Underground should improve its assurance processes to ensure that issues identified during audit and surveillance of Tube Lines track maintenance activities are actively monitored and addressed by Tube Lines in a timely manner (paragraph 150a).</p>	<p>London Underground has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>8            12/05/2010    05/2011</p> <p>Derailment engineering train between Gloucester Rd &amp; Earls Ct LU</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is for London Underground to consider how the level of risk from ML faults should be evaluated after patrols and inspections have taken place in order to clarify the action required where there are multiple faults.</p> <p>London Underground, in partnership with its track maintainers, should review standard 1-159 'Track- dimension and tolerances' with the aim of providing guidance on the assessment of risk from ML faults. The guidance should address how the effect of other ML or SS faults in the same location or immediate vicinity should be evaluated so that impending problems at particular locations can be identified (paragraph 151b).</p>	<p>London Underground has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAI B)
<p>9            12/05/2010    05/2011</p> <p>Derailment engineering train between Gloucester Rd &amp; Earls Ct LU</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is for Tube Lines to consider the use of technology to assist patrollers and inspectors in recording and classifying track faults, thereby reducing the risk that faults will be overlooked.</p> <p>Tube Lines should review current technologies and, following production of an action plan, implement any that can assist patrollers and inspectors. This should include the consideration of the use of hand-held computer devices to record and classify faults and geometry recording equipment that can be moved along the track to record parameters such as track gauge and twist (paragraph 148a).</p>	<p>Tube Lines has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>1            30/03/2010    06/2011</p> <p>Track worker struck by a train at Cheshunt Junction</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to achieve consistently safe systems of work at junctions.</p> <p>Network Rail should assess the hazards and risk at each of its junctions where working with lookout protection is currently permitted with the objective of producing for each a set of predefined Safe Systems of Work taking into account local factors. These should identify the acceptability of this method of working, the protection arrangements for each part of the junction or work activity, and the specific position of safety (paragraph 155).</p>	<p>ORR has advised the RAI B that Nertwork Rail is developing an enhanced Safe System of Work planning system ehich should address most of RAI B's concerns.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p> <p>Implemented by alternative means.</p>
<p>2            30/03/2010    06/2011</p> <p>Track worker struck by a train at Cheshunt Junction</p> <p>Status: In-progress</p>	<p>The intention of this recommendation is to address the concern that extended sighting times, and consequent early warnings from lookouts, can cause staff to react with less urgency to initial warnings or to adopt unauthorised systems of work.</p> <p>Network Rail should evaluate the behaviour of staff working on the track at locations with extended sighting times. The objective of this evaluation shall be:</p> <ul style="list-style-type: none"> <li>a. to understand the methods adopted by track workers at such locations;</li> <li>b. to assess the risk introduced by extended warning times;</li> <li>c. to assess the risk introduced by any alternative working practices that may be identified by staff; and</li> <li>d. to consider the need for additional guidance to the COSS and other safety critical staff.</li> </ul> <p>Based on its understanding of current behaviour gained from this evaluation, Network Rail should establish a safe system of work to cover activities at locations with extended sighting times (paragraph 136).</p>	<p>Network Rail have outlined the actions to be taken in response to the recommendation.</p> <p>ORR are seeking further information.</p>


Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>1            04/05/2010    07/2011</p> <p>Runaway and derailment of wagons at Ashburys</p> <p>Status: In-progress</p>	<p>The purpose of this recommendation is to make a 'pull test' with the power brake released a requirement when leaving wagons on their handbrake regardless of whether the driver is on his own or is working with a shunter.</p> <p>Freight operators should ensure that their operating instructions include a 'pull test' when wagons are to be left to rely on their handbrakes for a time (DB Schenker reports that it has already taken this action).</p>	<p>Freight operators have outlined the actions to be taken in response to the recommendation.</p> <p>ORR are seeking further information.</p>
<p>2            04/05/2010    07/2011</p> <p>Runaway and derailment of wagons at Ashburys</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to ensure that the manufacturers' maintenance requirements for components are incorporated in the maintenance plan for the whole vehicle and that this is kept up to date.</p> <p>VTG should check that its maintenance plans incorporate the latest maintenance recommendations of suppliers of safety critical components used on the vehicles and update as necessary.</p>	<p>VTG has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>3            04/05/2010    07/2011</p> <p>Runaway and derailment of wagons at Ashburys</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to ensure that other wagons with the SAB/Haldex AA1 type slack adjuster are correctly inspected and maintained, including wagons covered by the PWRA.</p> <p>Operators of wagons fitted with SAB/Haldex AA1 type slack adjusters should, in conjunction with the maintainers and owners as appropriate, ensure that the maintenance plans are reviewed to confirm that they incorporate the manufacturer's current recommendations on their inspection and maintenance. Network Rail PWRA should issue a private owners circular letter to this effect to PWRA members.</p>	<p>Operators of wagons have reported that they have taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>4            04/05/2010    07/2011</p> <p>Runaway and derailment of wagons at Ashburys</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to find out whether it is practicable to put in place some means for rail organisations to be made aware of relevant component safety information arising from other industries.</p> <p>RSSB should investigate the practicability of distribution of safety information from other industries to the rail industry with regard to components that are common to both industries.</p>	<p>Operators of wagons have carried out a review in response to this recommendation. Operators of wagons propose no further action.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>



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<p>5            04/05/2010    07/2011</p> <p>Runaway and derailment of wagons at Ashburys</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to include a step in the VIBT procedure to examine the handbrake mechanism to check that it operates correctly and fully applies the brakes.</p> <p>Operators of freight wagons should, in conjunction with the maintainers and owners as appropriate, review their VIBT procedures for handbrake testing to ensure that they include checking that the handbrake is fully effective. Network Rail PWRA should issue a private owners circular letter to this effect to PWRA members.</p>	<p>Operators of freight wagons have reported that they have taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>6            04/05/2010    07/2011</p> <p>Runaway and derailment of wagons at Ashburys</p> <p>Status: In-progress</p>	<p>The purpose of this recommendation is to investigate whether wagons with single disc brakes pose a risk when operating on long gradients and arrange to have any operating restrictions found necessary to be published in the operating instructions, in accordance with Group Standard GE/RT8270 'Assessment of Compatibility of Rolling Stock and Infrastructure'.</p> <p>DB Schenker should confirm whether the operating restriction on wagons with only one brake disc per axle is still required and, if so, arrange for the restriction to be published.</p>	<p>ORR are seeking further information.</p>
<p>1            10/07/2010    08/2011</p> <p>Collision between train 1C84 and a tree at Lavington, Wiltshire</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is for Network Rail to be able to identify third party land upon which trees present the greatest risk to the railway.</p> <p>Network Rail should review and enhance its processes for gathering intelligence about neighbouring land where there may be a higher risk of tree fall affecting the railway. This might be achieved by modifying the remit for the national tree survey, before this is repeated, and/or by providing suitable guidance to local off-track teams (paragraph 95).</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>2            10/07/2010    08/2011</p> <p>Collision between train 1C84 and a tree at Lavington, Wiltshire</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is for Network Rail to raise the awareness of its neighbours to the risk their trees may present to the operational railway.</p> <p>Network Rail should develop and implement a plan, or adapt and enhance existing plans, to communicate with those of its neighbours whose land is considered to present a high risk of tree fall affecting the railway. The objective should be to inform them about their responsibilities and the threat their trees may present to the railway (paragraph 94).</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
113/08/201009/2011 Runaway of an engineering train from Highgate Status: Implemented	This recommendation is intended to provide sufficient and appropriate inputs to the future introduction of new and modified engineering trains and rail mounted plant.  LUL should, with assistance from Tube Lines, review and, where necessary, amend processes and practices so that adequate design, checking, approval and testing is provided for new and modified engineering trains and rail mounted plant. The processes and practices should include specifying and allocating sufficient staff with appropriate qualifications, defining the individual responsibilities and providing effective coordination between them (paragraphs 216b, 216d, 216e, 216f, 220a and 220b).	LUL has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
213/08/201009/2011 Runaway of an engineering train from Highgate Status: Implemented	This recommendation is intended to identify and remedy any existing approvals where the extent of specialist inputs may have been insufficient to provide reasonable assurance of compliance with the standards applicable at the time of approval.  In respect of engineering trains and rail mounted plant supplied by (or through) TransPlant: LUL should, with assistance from Tube Lines, review all existing approvals to determine whether the inputs to the approval process were sufficient to give reasonable assurance that adequate safety standards are met by safety critical equipment, operating procedures and documentation. If inputs were insufficient to give this assurance, LUL, with assistance from Tube Lines, should introduce a time-bound process to implement the measures needed to comply with appropriate safety standards (paragraphs 216b, 216d, 216e, 216f, 220a and 220b ).	LUL has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.
313/08/201009/2011 Runaway of an engineering train from Highgate Status: Implemented	This recommendation is intended to provide sufficient experienced staff involvement to the investigation of allegedly defective equipment so that lessons are learnt from equipment malfunctions before these result in an accident.  LUL should, with assistance from Tube Lines, review and, where necessary, amend the processes and practices used to investigate allegedly defective equipment. This review should cover the specification and implementation of adequate testing and the assessment of both defects and test results (paragraph 217).	LUL has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>4            13/08/2010    09/2011</p> <p>Runaway of an engineering train from Highgate</p> <p>Status: Implemented</p>	<p>This recommendation is intended to clarify the responsibilities of, and provide adequate instructions and training for, people involved in the recovery of engineering trains and rail mounted plant. The training process should include a means for identifying and resolving any problems, or improvements, identified during the training.</p> <p>LUL should, with assistance from Tube Lines, review and clarify the responsibilities of all staff who may be involved in the recovery of engineering trains and rail mounted plant. Where necessary, processes should be implemented to provide these staff with appropriate instructions, training and practice. This training process should include appropriate actions to be taken if problems, or possible improvements, are identified during training (paragraphs 216c, 218, 219 and 220c).</p>	<p>LUL has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>5            13/08/2010    09/2011</p> <p>Runaway of an engineering train from Highgate</p> <p>Status: Implemented</p>	<p>This recommendation is intended to minimise the risks associated with the operation of unbraked vehicles at the end of trains.</p> <p>LUL should, with assistance from Tube Lines, provide guidance and instructions to ensure a safe system of work to recover vehicles with defective or ineffective braking (paragraphs 216a, 216b and 220a).</p>	<p>LUL has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>6            13/08/2010    09/2011</p> <p>Runaway of an engineering train from Highgate</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to identify any shortcomings in the quality assurance processes applied to organisations supplying TransPlant with plant and equipment including design services.</p> <p>LUL should audit Tube Lines' supplier quality assurance system, as applied to TransPlant's suppliers, with particular emphasis on ensuring that responsibilities for design, checking and approval are clearly defined and then allocated only to people and organisations which have been verified as having the necessary competencies. LUL should close out this audit after ensuring that Tube Lines have undertaken any necessary corrective actions (paragraph 221).</p>	<p>LUL has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>7            13/08/2010    09/2011</p> <p>Runaway of an engineering train from Highgate</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to identify any shortcomings in the quality assurance processes applied within LUL in relation to the supply of safety critical design services by Tube Lines and organisations working for Tube Lines.</p> <p>LUL should review the level of assurance provided by LUL's audit regime for the design elements of safety critical services</p>	<p>LUL has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>1      20/07/2010      10/2011</p> <p>Runaway and collision of RRV near Raigmore, Inverness</p> <p>Status: Implemented </p>	<p>provided to LUL, by Tube Lines and its suppliers. If the existing audit regime does not provide an adequate level of assurance, LUL should introduce a time-bound process to implement the measures needed to achieve an adequate level of assurance (paragraph 221).</p> <hr/> <p>The intention of this recommendation is that RRVs of the type involved in the accident should be modified to prevent the circumstances arising in the future.</p> <p>Liebherr-Great Britain Ltd should undertake modifications to the type 1033, and similar RRVs (those RRVs with this type of interlocking design), to avoid the scenario where a machine that is in a free-wheel state is prevented from raising or lowering either rail axle. This should be achieved without the need for the machine operator to override the interlock function (paragraphs 204a, 204c).</p>	<p>Lieber confirms that a secondary independent proximity switch has been designed tested and approved that is designed to eliminate the risk of a free wheel situation occurring. The RAIB acknowledge the improvement but is concerned that the interlock would still prevent either road wheel from being lowered should both wheels become disengaged from the road wheels. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate. \$</p>
<p>2      20/07/2010      10/2011</p> <p>Runaway and collision of RRV near Raigmore, Inverness</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to improve the ergonomics and labelling of the RRV controls.</p> <p>Liebherr-Great Britain Ltd should undertake a review of the design of the human-machine interface on the type 1033, with particular reference to:</p> <p>ergonomics/labelling of buttons; and</p> <p>counter-intuitive operating procedures and specific operation of the HA and VA controls in the RRV machine cab;</p> <p>and implement the findings of this review on existing machines, and amend its procedures to require an ergonomic assessment to be included in the design process (paragraph 205a).</p>	<p>Liebherr-Great Britain Ltd has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>3      20/07/2010      10/2011</p> <p>Runaway and collision of RRV near Raigmore, Inverness</p> <p>Status: In-progress</p>	<p>The intention of this recommendation is that an appropriate safety integrity level (SIL) for the control systems of RRV machines should be established and implemented on future builds.</p> <p>Network Rail should undertake a review of the safety requirements that it specifies for RRVs, with the objective of determining an appropriate safety integrity level (SIL) for any safety functions that are required within the control systems of the machine, and implementing verification and approval arrangements that are appropriate for this SIL. This should, among other things, provide assurance that potential</p>	<p>Network Rail have outlined the actions to be taken in response to the recommendation. ORR are seeking further information.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
	failure modes of interlocks, and similar safety systems, have been identified and suitably mitigated (with reference to actions taken following the RAIB's RRV Class Investigation recommendations 1 & 2) (paragraph 206).	
4      20/07/2010      10/2011  Runaway and collision of RRV near Raigmore, Inverness  Status: Implemented	<p>The intention of this recommendation is that the role of the machine controller, in respect of the deployment of the rail wheels of an RRV, should be clarified.</p> <p>Network Rail should undertake a review of the role of the machine controller for all types of RRV during on and off-tracking, with particular emphasis on whether it is necessary for the controller to advise the machine operator on whether the rail wheels of the RRV are fully deployed (with reference to the RAIB's RRV Class Investigation recommendation 2). This review should take into account the potential for operator error and/or the malfunction of the machine (paragraph 205).</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
1      06/06/2010      11/2011  Accident at Falls of Cruachan, Argyll  Status: In-progress	<p>The intention of this recommendation is to ensure that for earthworks in Scotland sufficient vegetation clearance is undertaken to allow adequate examination and evaluation of slopes to determine their condition.</p> <p>In respect of earthworks in Scotland, Network Rail should review its existing arrangements for the clearance of vegetation to enable examinations and evaluations of earthworks to be carried out. If this review indicates that the current arrangements do not enable a sufficient understanding of their condition of earthworks to be obtained, and if there is no alternative means of assessing the risks associated with such slopes, Network Rail should define the extent of vegetation clearance that is required to enable examinations and evaluations to be carried out, and then implement a strategy for achieving it (paragraph 137a).</p>	<p>Network Rail have outlined the actions to be taken in response to the recommendation.</p> <p>ORR are seeking further information.</p>
2      06/06/2010      11/2011  Accident at Falls of Cruachan, Argyll  Status: Implementation ongoing	<p>The intention of this recommendation is that where a cutting comprises mixed ground of soil and rock, all parts of the slope should be examined and reported.</p> <p>In respect of all cuttings equal to, or greater than, three metres high through mixed ground of soil and rock, Network Rail should implement arrangements so that (paragraphs 137b and 139b):</p> <p>in accordance with NR/L3/CIV/065, examination results are reported for both the soil and rock materials; and</p> <p>both the soil slope hazard index and the rock slope hazard index</p>	<p>Network Rail have outlined the actions to be taken in response to the recommendation. Target date Sept 2012 status to be confirmed.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
	are reported.	
<p>3            06/06/2010    11/2011</p> <p>Accident at Falls of Cruachan, Argyll</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to improve Network Rail's management of its earthworks by requiring examiners and examining engineers to give their professional judgement on the condition of earthworks; to take that judgement into account when managing earthworks; and to resolve any inconsistencies between successive condition ratings determined from the SSHI or the RSHI.</p> <p>Network Rail should amend its earthworks management system so that (paragraphs 137g and 139c):</p> <p>earthwork examiners and earthwork examining engineers record on all examination reports whether, in their professional judgement, the condition ratings determined by the SSHI and RSHI are a reasonable reflection of slope condition;</p> <p>where examiners and examining engineers disagree with the SSHI and/or RSHI condition ratings, their judgement of the slope condition rating should be recorded on the examination report and taken into account when deciding how to manage the earthwork; and</p> <p>any inconsistencies between condition ratings from successive examinations should be identified and resolved.</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>4            06/06/2010    11/2011</p> <p>Accident at Falls of Cruachan, Argyll</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to identify whether the process for planning remediation works which includes the use of the Earthworks Prioritisation Model could be changed to improve the likelihood of remedial works being carried out before failure occurs.</p> <p>In the light of experience, and the associated application of professional judgement, Network Rail should review the process for planning remediation works which includes using the Earthworks Prioritisation Model and, if necessary, make any changes to it so that the likelihood of remedial works being carried out before the occurrence of the failure of earthworks is improved (paragraphs 138 and 139a).</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>5            06/06/2010    11/2011</p> <p>Accident at Falls of Cruachan, Argyll</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is to improve the calculation of the rock slope hazard index so that it gives a more realistic indication of a railway rock cutting's condition.</p> <p>Network Rail should review the algorithm which calculates the</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>6            06/06/2010    11/2011</p> <p>Accident at Falls of Cruachan, Argyll</p> <p>Status: Implemented</p>	<p>rock slope hazard index so that its output gives a more realistic indication of a railway rock cutting's condition (paragraph 139c).</p> <hr/> <p>The intention of this recommendation is to reduce the risk of lighting diffusers and other saloon interior panels becoming displaced and causing injuries to persons on board trains in the event of an accident.</p> <p>First ScotRail should assess the risk of lighting diffusers and other saloon panels in the interiors of trains that it operates becoming displaced in the event of an accident such that they may cause injuries to those on board. Any necessary remedial measures to reduce the risk should be implemented (paragraph 139d).</p> <p>This recommendation may also apply to other train operating companies.</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>1            02/02/2010    12/2011</p> <p>Investigation into safety of AOCLs on Network Rail's infrastructure</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is that Network Rail should upgrade the highest risk AOCLs by fitting barriers, or implementing other measures to deliver an equivalent or improved level of safety, such as by closing crossings.</p> <p>The RAIB envisages that when identifying those crossings to be upgraded, special consideration should be given to those 32 crossings with an enhanced likelihood of a road vehicle and train collision (listed at appendix D). However, it is anticipated that Network Rail's more detailed assessment of risk, taking into account factors such as the speed of trains, may identify different and/or additional crossings for upgrade.</p> <p>The RAIB is aware that Network Rail's development of retrofit half barriers should allow a cost effective upgrade, but if this development is not completed and proved in the near future, the upgrading of the highest risk AOCLs should still be implemented based on existing forms of level crossing protection.</p> <p>In addition, the RAIB is of the view that the implementation of a programme to upgrade AOCL crossings should not be delayed by the need to review and improve existing risk assessment management arrangements (as outlined in Recommendation 3).</p> <p>Network Rail should immediately implement a programme to upgrade the highest risk AOCLs. The crossings for upgrade should be selected by appropriately skilled personnel, on the basis of factors that include:</p>	<p>ORR has reported that Network Rail is looking to upgrade about 70 AOCL including all crossings identified by the RAIB. Two trial sites are to be commissioned in Ardrossen by June 2012, upgrading of other sites planned over the next 2 years. Network Rail have outlined the actions to be taken in response to the recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

their past record of incidents and accidents;

an assessment of risk and the safety benefit of the upgrade; and

the human factors issues present at each.

Upgrades should consist of fitting barriers, or other measures delivering an equivalent or improved level of safety (paragraph 153).

2	02/02/2010	12/2011	<p>Investigation into safety of AOCLs on Network Rail's infrastructure</p> <p>Status: Implemented</p>	<p>In parallel with, but not delaying Recommendation 1 the intention of this recommendation is that Network Rail reviews the existing risk assessments of all AOCLs to identify whether all the relevant human and local factors have been identified and appropriate mitigations implemented. Where this is not the case, a prioritised programme of improvements should be implemented:</p> <p>Network Rail should review its risk assessments at AOCLs to identify whether:</p> <p>all the relevant human and local factors have been identified (consideration should be given to the human factors issues in appendix F); and</p> <p>all appropriate mitigation measures have been implemented.</p> <p>Where omissions are identified, these should be rectified by a prioritised programme of improvements (paragraph 168).</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
3	02/02/2010	12/2011	<p>Investigation into safety of AOCLs on Network Rail's infrastructure</p> <p>Status: In-progress</p>	<p>In parallel with, but not delaying Recommendation 1, the intention of this recommendation is to improve the risk assessment of level crossings by the correct identification of specific human factors issues and other local factors, and the implementation of appropriate mitigation measures:</p> <p>Network Rail should review, and as necessary update, its processes, guidance, training and briefing of its staff, on how to identify and assess the specific human and local factors at level crossings, so that it can establish whether further mitigation measures should be implemented (paragraph 169).</p>	<p>Network Rail has reported that it is undertaking a program of improvements to its level crossing risk management process. This includes guidance and training to assess human and local factors at level crossings. This is due to be implemented by 31 May 2012.</p> <p>Network Rail have outlined the actions to be taken in response to the recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>



Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation		Summary of current status (based on ORR's report to RAIB)
3 05/11/2010 13/2011 Bridge strike & RV incursion onto roof of passing train nr Oxshott Stn Status: Implemented	<p>The purpose of Recommendation 3 is to incorporate checks of visibility markings protecting railway overbridges within the existing structures examination regime, and to promote the reporting of vehicular damage to aid the identification of sites where risk mitigation may be required.</p> <p>Network Rail should include, within its annual examination of rail overbridges, the requirement for the structures examiner to identify and record any highway features which may increase the risk to the railway such as absence, obscuration or poor condition of parapet end markers. Network Rail should also improve its management arrangements for reporting such issues to the relevant highway authority, and when it becomes aware of damage to structures caused by road vehicles (paragraph 98b).</p>		<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
1 17/08/2010 14/2011 Collision tanker & train Sewage Works Lane, near Sudbury, Suffolk Status: Implemented	<p>The intent of Recommendation 1 is for Network Rail to remind authorised 'business' users at user worked crossings of their responsibility to brief their own employees and contractors who may not know how to use such crossings safely.</p> <p>Network Rail should use the circumstances of this accident to remind authorised users who are also businesses of their responsibilities to brief staff and contractors on the safe use of user worked crossings (paragraph 194b).</p>		<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
2 17/08/2010 14/2011 Collision tanker & train Sewage Works Lane, near Sudbury, Suffolk Status: In-progress	<p>The intent of Recommendation 2 is for Network Rail to consider ways of managing the predictable risk that arises at user worked crossing equipped with telephones where long waiting times are frequently experienced by road users.</p> <p>Network Rail should consider ways of managing the risk at user worked crossings equipped with telephones where long waiting times can arise as a result of the signaller having no means of knowing where trains are located, and implement any reasonably practicable measures identified (paragraph 195a).</p>		<p>Network Rail have outlined the actions to be taken in response to the recommendation. A commitment has been made to implement a solution at long sections at 200 crossings by the end of 1/4/2014 with the remaining long sections to follow. A further update has been promised to the RAIB by 31 January 2013.</p> <p>ORR are seeking further information.</p>
3 17/08/2010 14/2011 Collision tanker & train Sewage Works Lane, near Sudbury, Suffolk Status: Implemented	<p>The intent of Recommendation 3 is for Network Rail to clarify, enhance and provide additional guidance on its requirements for information gathering and consultation with authorised users at user-worked crossings so that local factors can be properly dealt with in the risk assessment process.</p> <p>Network Rail should review the relevant procedures in its Operations Manual and make, as a minimum, the following requirements explicit:</p>		<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

a. correspondence should be sent to all authorised users when trigger risk assessments are to be undertaken inviting them to participate, as well as when routine risk assessments are planned;

b. engagement with authorised users should be sought as part of the response to near-miss incidents;

c. reference to information held within the controlling signal box such as requests to use the crossing and the occurrence book should be a mandatory element of data gathering for all risk assessments; and

d. where businesses are authorised users and have a facility in close proximity to the crossing, independent sources (such as site logs) should be sought and used, where possible, to obtain intelligence on crossing usage for all risk assessments (paragraph 195b and 195c).

4	17/08/2010	14/2011	<p>The intent of Recommendation 4 is to ensure Network Rail reviews the safety of Sewage Works Lane UWC with Anglian Water to identify the measures that can be taken by one or both parties to address the safety risk.</p> <p>Taking account of the accident on 17 August 2010 and intelligence in this report about the extent of misuse at the crossing, Network Rail should, in conjunction with Anglian Water, make a thorough and realistic assessment of the risk at Sewage Works Lane UWC, making allowance for local factors at the crossing that influence the risk to users, with a view to identifying and implementing measures to reduce the risk to all users at the crossing. This assessment must include consideration of options to manage the risk of misuse arising from long waiting times for road users (paragraphs 195e and 195f).</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
5	17/08/2010	14/2011	<p>The intent of Recommendation 5 is for Network Rail to review the costs and benefits of combining the data gathering, processing and assessment roles for level crossing risk assessment, taking account of the possible benefit of one person or a dedicated team having all the necessary knowledge to make an accurate assessment of the risk.</p> <p>Network Rail should review its level crossing management processes to establish the costs and benefits of making data gathering, processing and risk assessment of a level crossing</p>	<p>B.~ (Dutyholder name) have outlined the actions to be taken in response to the recommendation. Implementation of this recommendation has a target date of 31 December 2013</p>

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the responsibility of a single person or a dedicated team with a comprehensive understanding of the operating environment at that crossing, and make changes to those processes as appropriate in the light of the outcome from the review (paragraphs 195e, 195f and 195g).

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6            17/08/2010    14/2011  
Collision tanker & train Sewage Works Lane,  
near Sudbury, Suffolk  
Status: Implemented

The intent of Recommendation 6 is for owners and operators of Class 156 units to cooperate on producing a review of the crashworthiness performance of the tables and determine whether the table design should be changed. This review may have relevance for other classes of rolling stock which share a similar design of table to the class 156.

Owners of class 156 units should assess whether or not there is a case for improving the crashworthiness performance of the tables on Class 156 units and implement any measures found to be reasonably practicable. When undertaking this assessment, the owners should seek the co-operation of operators of Class 156 units (paragraph 196).

Porterbrook leasing co has advised ORR that it is to fit a new design of table as part of the heavy overhaul programme planned to start in 2012. Angel trains has concluded that it is not cost effective to implement the new design of tables but is to consult with its customers and will consider its position.

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1            17/08/2010    15/2011  
Uncontrolled freight train runback between  
Shap and Tebay, Cumbria  
Status: In-progress

The intention of this recommendation is for DB Schenker to reduce the number of shifts that cause fatigue. This recommendation may apply to other freight train operating companies.

DB Schenker should, in consultation with its drivers:

a. identify the shifts on which their drivers experience high levels of fatigue<sup>26</sup>, and give particular consideration to the impact on drivers working the first in a series of night shifts;

b. improve the identified shifts, for example by changing the transition to them, their duration and the duties carried out on them, with shifts of the highest risk improved ahead of those of lower risk;

c. assess the findings of drivers on the changed shifts to confirm that those shifts are improved; and

d. share its findings with the Office of Rail Regulation

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DB Schenker have carried out a review in response to this recommendation and are liaising with ORR. ORR are seeking further information.

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>2            17/08/2010    15/2011</p> <p>Uncontrolled freight train runback between Shap and Tebay, Cumbria</p> <p>Status: Implemented</p>	<p>The intention of this recommendation is for the rail industry to provide guidance on how to reduce the number of shifts that cause fatigue.</p> <p>The Office of Rail Regulation should take into account the train operator findings from Recommendation 1d and provide updated and enhanced guidance on shifts that cause high levels of fatigue, which should include:</p> <p>a. ways to improve those shifts, for example by changing the transition to them, the number of consecutive shifts, their duration and the duties carried out on them;</p> <p>b. advice on the limitations of mathematical models used to predict fatigue, and how they may be used as part of a fatigue risk management system.</p>	<p>ORR has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>3            17/08/2010    15/2011</p> <p>Uncontrolled freight train runback between Shap and Tebay, Cumbria</p> <p>Status: In-progress</p>	<p>The intention of this recommendation is to provide the rail industry with information on the accuracy of mathematical models used to predict fatigue.</p> <p>The Office of Rail Regulation should arrange for a programme of work to analyse and compare existing mathematical models used to predict fatigue, including the Fatigue and Risk Index, and then provide information to the rail industry on the accuracy of those models.</p>	<p>ORR has submitted a research proposal to RSSB. An update to RAIB has been promised for January 2013.</p>
<p>1            28/12/2010    16/2011</p> <p>Derailment in Summit tunnel, near Todmorden, West Yorkshire</p> <p>Status: Implementation ongoing</p>	<p>The intent of this recommendation is to reduce the amount of ice forming in Summit tunnel's ventilation shafts by improving the arrangements for managing the water seeping through the shaft's lining, eg by changing the drainage arrangements. These changes should also stop the water from falling directly onto the tracks below.</p> <p>Network Rail should review how the arrangements for managing water within Summit tunnel can be improved, decide what actions it is reasonably practicable to take, and implement them. The review should specifically consider what can be done to manage the water seeping through the ventilation shaft linings and reduce the amount of ice forming during periods of freezing temperatures (paragraphs 149a, 149b and 152a).</p>	<p>Network Rail have outlined the actions to be taken in response to the recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>2            28/12/2010    16/2011</p> <p>Derailment in Summit tunnel, near Todmorden, West Yorkshire</p> <p>Status: Implementation ongoing</p>	<p>The intent of this recommendation is to prevent the first train, after a cessation of traffic due to extreme weather, from passing at the line's maximum permitted speed through or over an unsafe structure. By identifying which structures on a route are at risk of becoming unsafe due to extreme weather, Network Rail can then check their state prior to reopening the route, eg by using the first service train to examine the route, a route proving train or staff on foot.</p> <p>Network Rail should identify the structures (as defined in NR/L3/CIV/006/1C) where passengers or staff might be put at risk when train services are resumed following an extended cessation of traffic during, or following, periods of extreme weather (as defined in NR/L2/OPS/021). Network Rail should then put in place procedures that result in checks that it is safe for trains to operate at the permitted line speed over or through these structures before resuming the train service (paragraphs 149e, 151c and 152c).</p>	<p>Network Rail have outlined the actions to be taken in response to the recommendation. Target date October 2012 status to be confirmed.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>3            28/12/2010    16/2011</p> <p>Derailment in Summit tunnel, near Todmorden, West Yorkshire</p> <p>Status: Implementation ongoing</p>	<p>The intent of this recommendation is to ensure that the hazards of ice formation on structures and the subsequent hazards during thaw conditions (eg ice falls onto the track) are included throughout Network Rail's weather management processes, so that they can be risk assessed and mitigated. For example, extreme cold weather events are not specifically included within NR/L3/TRK/1010 and EWAT conferences do not consider the hazards that might be present when operating trains once extreme cold weather conditions end and a thaw sets in.</p> <p>Network Rail should review and implement changes to its weather management processes to take into account the potential hazards created by extreme cold weather events and subsequent thaw conditions (paragraphs 150a and 151d).</p>	<p>Network Rail have outlined the actions to be taken in response to the recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>4            28/12/2010    16/2011</p> <p>Derailment in Summit tunnel, near Todmorden, West Yorkshire</p> <p>Status: Implementation ongoing</p>	<p>The intent of this recommendation is to give Network Rail staff the skills and knowledge to carry out additional inspections to look for ice on structures during periods of extreme cold weather, as Network Rail infrastructure maintenance's routine inspection regime may be too infrequent. Staff need to know what they need to do, where and when they should be doing it and the actions they should take once ice is found. This will support the implementation of NR/L3/TRK/1010 and the extreme weather plan, which require these additional inspections to take place. The staff undertaking these inspections should also know what potential hazards may be present and understand how to do the inspections while maintaining their own safety.</p>	<p>Network Rail have outlined the actions to be taken in response to the recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>5            28/12/2010    16/2011</p> <p>Derailment in Summit tunnel, near Todmorden, West Yorkshire</p> <p>Status: In-progress</p>	<p>Network Rail should provide training and information to its staff on carrying out the inspections of those structures which are at risk from ice in extreme cold weather. The training and information should include guidance on managing the hazards to staff while carrying out these inspections (paragraphs 149c and 149d).</p> <hr/> <p>The intent of this recommendation is for safety actions and safety related information originating from Network Rail's buildings and civils – asset management function to be managed to an appropriate conclusion when it is passed to other parts of Network Rail's organisation.</p> <p>Network Rail should put in place processes for the management and distribution of safety actions and safety related information originating from Network Rail's buildings and civils – asset management function. This should include a process for systematically reviewing the resolution of necessary safety actions and a process for passing safety related information to other parts of Network Rail's organisation, including confirmation that it has been received, understood and acted upon (paragraphs 151a and 151b).</p>	<p>ORR are seeking further information. An update to RAIB is promised for November 2012.</p>
<p>4            05/02/2011    17/2011</p> <p>Derailment of a passenger train near Dryclough Jcn, Halifax</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to provide support to the MPCs to allow them to determine who is best placed to deal with problems reported via community relations concerning structures and earthworks and to define a system, including time limits, so that structures and earthworks staff can correctly prioritise their work.</p> <p>Network Rail should put in place adequate arrangements for dealing with external reports on possible problems with its structures and earthworks, and provide appropriate training and guidance to its community relations staff (including MPCs). The arrangements should include guidance on appropriate response times for both community relations and structures and earthworks staff when dealing with these reports, the basis upon which the reports should be prioritised and a system to ensure that defects identified are followed through.</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>1            08/11/2010    18/2011</p> <p>Station overrun at Stonegate, East Sussex</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to ensure that safety related maintenance activities are managed effectively.</p> <p>London &amp; South Eastern Railway Ltd should carry out a management review to examine why the deficiencies in the processes for replenishment of sand had not been identified and</p>	<p>London &amp; South Eastern Railway Ltd has reported that it has taken actions in response to this recommendation.</p> <p>ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>2            08/11/2010    18/2011</p> <p>Station overrun at Stonegate, East Sussex</p> <p>Status: Implemented</p>	<p>rectified prior to the overrun at Stonegate. The lessons learnt from this review should be implemented by making suitable changes to management systems to provide confidence that such deficiencies will be identified in the future for all safety related maintenance activities (paragraph 222d).</p> <hr/> <p>The purpose of this recommendation is to ensure that missed work activities do not affect the safe operation of trains.</p> <p>London &amp; South Eastern Railway Ltd should introduce management systems to prevent trains that require safety related maintenance work from re-entering service until that work has been completed (paragraph 224b).</p>	<p>London &amp; South Eastern Railway Ltd has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>3            08/11/2010    18/2011</p> <p>Station overrun at Stonegate, East Sussex</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to ensure that trains that rely on sand for braking in low adhesion conditions always have that sand available.</p> <p>London &amp; South Eastern Railway Ltd should review the arrangements and processes for train sand replenishment, so that they are compatible with known worst case rates of sand usage and take account of any inherent delays in actioning replenishment, and implement any revised arrangements arising from this review (paragraph 224a).</p>	<p>London &amp; South Eastern Railway Ltd has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>1            23/03/2011    20/2011</p> <p>Train passed over Lydney level crossing with crossing barriers raised</p> <p>Status: Implemented</p>	<p>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.</p> <p>Network Rail should modify procedures so that:</p> <ul style="list-style-type: none"> <li>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;</li> <li>b. there is clear guidance on the information to be contained in all box instructions;</li> <li>c. training material is reviewed, and updated as necessary, concurrently with the associated box instructions; and</li> <li>d. reviews of box instructions and associated training material should be subject to checking, at least on a sample basis.</li> </ul> <p>(paragraphs 145d, 145e, 146, 147a, 149a and 150.)</p>	<p>Network Rail has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>2            23/03/2011    20/2011</p> <p>Train passed over Lydney level crossing with crossing barriers raised</p> <p>Status: In-progress</p>	<p>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.</p> <p>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 (paragraphs 145d, 147a, and 147c).</p>	<p>Network Rail have outlined the actions to be taken in response to the recommendation.</p> <p>ORR are seeking further information.</p>
<p>3            23/03/2011    20/2011</p> <p>Train passed over Lydney level crossing with crossing barriers raised</p> <p>Status: In-progress</p>	<p>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.</p> <p>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 (paragraph 145e).</p>	<p>Network Rail have carried out a review in response to this recommendation. Network Rail propose no further action. ORR not content with dutyholder response, further engagement ongoing / proposed.</p>
<p>1            03/07/2011    04/2012</p> <p>Boiler incident on the Kirklees Light Railway</p> <p>Status: Implementation ongoing</p>	<p>The purpose of this recommendation is to complete the Kirklees Light Railway Safety Management System and implement it by a defined date. This may also be applicable to other heritage railways.</p> <p>Kirklees Light Railway should, within a timescale agreed with the Office of Rail Regulation, complete and fully implement a safety management system that is comparable with good practice in the heritage sector, and relevant standards and guidance. This should include the identification of risks, determination of safety critical elements of competence and the training and assessment to deliver it (paragraph 94). The Kirklees Light Railway should confirm that the recently-introduced training syllabus and competency arrangements (paragraph 98) are consistent with this.</p>	<p>Kirklees Light Railway have outlined the actions to be taken in response to the recommendation. Target date is July 2013. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>2            03/07/2011    04/2012</p> <p>Boiler incident on the Kirklees Light Railway</p> <p>Status: Implemented</p>	<p>The purpose of this recommendation is to make clear to staff preparing locomotives which items must always be checked and provide positive indication that they have done this.</p> <p>Kirklees Light Railway should revise its locomotive preparation</p>	<p>Kirklees Light Railway has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>



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checklist to make clear which items must always be checked  
and which are dependent on the outcome of other checks  
(paragraph 95).

**Summary of current status (based on ORR's report to  
RAIB)**

Recommendations made in RAIB reports published in 2012

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>1            20/02/2010    01/2012</p> <p>Passenger train derailment near East Langton, Leicestershire</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to reduce the risk of recurrence of a similar final drive gearbox failure on the Meridian and similar fleets.</p> <p>Bombardier Transportation, in conjunction with Voith, should undertake a design review of the final drive gearboxes and axles used on the Meridian and Voyager fleets (Class 220, 221 and 222) and, where appropriate, implement design and maintenance improvements, including verification of the over-temperature detection, to reduce the risk from loss of output bearing interference fits on the axles (paragraphs 189, 191a).</p>	<p>Awaiting response</p>
<p>2            20/02/2010    01/2012</p> <p>Passenger train derailment near East Langton, Leicestershire</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is that safety lessons from the East Langton investigation, in particular that a final drive output bearing failure can lead to axle failure, are captured in procedures for the design and assembly of final drive gearboxes at new build and overhaul, to maintain adequate bearing interference fits.</p> <p>ROSCOs and other Contracting Entities (purchasers of rolling stock), and Entities in Charge of Maintenance (responsible for overhaul of rolling stock) should review, and where appropriate improve, the design, manufacture and overhaul procedures used for final drive gearboxes in their current and future fleets, in particular those featuring hollow axles, by checking that they adequately address the following factors:</p> <p>I reduction in the size of output bearing seats due to shrinkage arising from other nearby interference fits and/or wear during service;</p> <p>I bearing bore growth during the service life of the bearing (eg obtained by measuring a sample of bearings);</p> <p>I bearing seats being made undersize; and</p> <p>I detection of overheating output bearings.</p> <p>(paragraph 189).</p> <p>Note for information relating to Recommendation 2: In conjunction with the publication of this report, the RAIB has written to the European Rail Agency (ERA) to request their assistance with the dissemination of the identified issues to national safety authorities and national investigation bodies in other member states of the European Union, for their information and action as appropriate to their circumstances.</p>	<p>Awaiting response</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>3            20/02/2010    01/2012</p> <p>Passenger train derailment near East Langton, Leicestershire</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to improve the failure detection capability of oil sampling regimes for final drive gearboxes to reduce the risk of future axle failure.</p> <p>Bombardier Transportation should review the final drive oil sampling regime on the Meridian and similar fleets (including consideration of sampling frequency and consistency, action levels, oil colour and use of cumulative trending) and, where necessary, make changes to maximise effectiveness in detecting impending failures (paragraph 189e).</p>	Awaiting response
<p>4            20/02/2010    01/2012</p> <p>Passenger train derailment near East Langton, Leicestershire</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is that train crew are familiar with, and practised in, on-board alarm handling procedures so that correct and timely action is taken to minimise adverse consequences of an out-of-course incident.</p> <p>East Midlands Trains should provide practical, rolling stock specific, initial and refresher training, that includes the simulation of on-board emergency and out-of-course situations. This should enable drivers and train crew to maintain their understanding of, and familiarity with, correct alarm handling in various scenarios (paragraphs 190 and 191c).</p>	Awaiting response
<p>1            08/01/2011    02/2012</p> <p>Tamper driver struck by a train at Torworth level crossing</p> <p>Status: Awaiting response</p>	<p>The purpose of Recommendation 1 is to bring about a sustainable change to how engineering train drivers, ground staff and on-track machine crews access work sites by implementing measures to support industry processes for providing them with a safety briefing.</p> <p>Network Rail and its contractors who operate trains in engineering possessions should jointly review the means by which engineering train drivers and on-track machine crews (and associated ground staff) can best be provided with sufficient information relating to both railway and construction risk before walking to, or entering, a work site. This review should address:</p> <p>I the validation, and incorporation in a suitable safety standard, of arrangements agreed between Network Rail and its haulage suppliers and contractors operating on-track machines, relating to the provision of a safety briefing before entering a work site;</p> <p>I the preparation of explanatory briefing material and additional training on the procedures to be followed to obtain safety briefings;</p>	Awaiting response

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I explicit consideration of the risks associated with access to site, including safety briefing issues, at an appropriate stage in the planning process for engineering activities; and

I the need for clarification or amendment of the relevant rules and procedures relating to walking to trains and on-track machines when these are in possessions and work sites.

The outcome of this review, and any appropriate additional measures identified, should then be implemented by Network Rail and a procedure put in place to monitor their effectiveness (paragraphs 133a, 133b, 133d, 134a to 134c, 136a and 136b).

1            08/03/2011    03/2012  
Two incidents involving track workers btw  
Clapham Jcn & Earlsfield  
Status: Awaiting response

The purpose of this recommendation is to reduce the potential for unsafe actions to be taken by a COSS when required to carry out unplanned work in unfamiliar and complex situations.

Awaiting response

Network Rail should review and, if necessary, revise the arrangements for unplanned / emergency work (paragraphs 123a and 123b) to reduce the potential for:

- a. confusion when attempting to apply the rules for working in a possession but outside a work site (paragraph 125a); and
- b. confusion when sharing line blockages (paragraph 126a).

Options for consideration should include:

I simplification of the rules, and / or improved COSS training, relating to working in a possession but outside a work site;

I means to control the risk associated with a COSS planning the system of work in unfamiliar and complex situations (such as restricting the definition of an 'emergency situation' or by introducing additional checks on the proposed system of work);

I a review of the risk of shared line blockages for unplanned works and the identification of alternative approaches; and

I adoption of situational risk assessments to inform decision making in unfamiliar and complex situations (such as the 'Take Time' process being trialled by the Wessex Route).

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>2            08/03/2011    03/2012</p> <p>Two incidents involving track workers btw Clapham Jcn &amp; Earlsfield</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to reduce the pressure on an engineering supervisor and / or COSS when there is an unplanned interruption to the normal passage of trains, due to a possession overrun or the need for emergency engineering access.</p> <p>Network Rail should develop a set of proposals for managing the pressures related to train performance on those responsible for setting up protection arrangements for access to the railway in unplanned and / or emergency situations (paragraph 124a). This might include (but should not be limited to):</p> <p>a. improving the mutual understanding of the challenges faced by shift leaders in maintenance delivery units and incident controllers at route control centres, for example by providing regular experience of working in each others' environments;</p> <p>b. a suitable briefing to remind trackside staff, as well as route controllers, that trackside staff themselves should decide the most appropriate protection arrangements for carrying out emergency work; and</p> <p>c. the provision of clear protocols on communication and co-ordination arrangements in situations where pressure may arise particularly where performance may conflict with safety.</p>	<p>Awaiting response</p>
<p>3            08/03/2011    03/2012</p> <p>Two incidents involving track workers btw Clapham Jcn &amp; Earlsfield</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to determine whether, following the proposed changes to Assessment in the Line, the workload of Track Section Managers is reasonable. If necessary, the role should be restructured to strengthen the supervision of staff competence.</p> <p>Network Rail should review the workload of Track Section Managers, to determine whether it is reasonable, taking account of the changes which are due to be introduced in 2012 as part of the 'Assessment in the Line review project'. This review should include the requirement to manage technical, managerial and administrative tasks; specific attention should be given to the work associated with the management of staff competence and on-site surveillance. If this review identifies that the workload of the role is unreasonable following the proposed changes, practical steps should be taken to restructure responsibilities to improve the delivery of safety-related activities (paragraph 125b).</p>	<p>Awaiting response</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>4            08/03/2011    03/2012</p> <p>Two incidents involving track workers btw Clapham Jcn &amp; Earlsfield</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to improve the competence of track maintenance staff in safety-critical roles, particularly when exposed to situations with which they are unfamiliar.</p> <p>Network Rail should review the adequacy of training and assessment of track maintenance staff to deliver practical competence, particularly in skills or situations which are encountered infrequently (paragraph 125b). Where necessary, improvements should be made to enhance current processes. Consideration should be given to:</p> <ul style="list-style-type: none"> <li>a. the extent to which it is appropriate to have detailed and complex rules for responding to infrequently-encountered situations;</li> <li>b. methods of providing experience in situations which an individual may encounter infrequently;</li> <li>c. identifying methods of assessment for situations which it is unlikely a line manager would normally be able to observe;</li> <li>d. reassessing safety-critical competences when there are significant changes in an individual's work pattern, eg changing from day patrolling to planned maintenance work on permanent night shifts; and</li> <li>e. reinforcing the need for regular face-to-face reviews of staff performance and competence by line managers.</li> </ul>	<p>Awaiting response</p>
<p>5            08/03/2011    03/2012</p> <p>Two incidents involving track workers btw Clapham Jcn &amp; Earlsfield</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to increase the likelihood that a signaller will be correctly informed that an ESR has been implemented by an appropriate person.</p> <p>Network Rail should amend its company standards to clarify who is responsible for informing the signaller that the equipment for an emergency speed restriction has been set up, and that it is no longer necessary to caution trains (paragraph 126b).</p>	<p>Awaiting response</p>
<p>1            03/07/2011    04/2012</p> <p>Boiler incident on the Kirklees Light Railway</p> <p>Status: Implementation ongoing</p>	<p>The purpose of this recommendation is to complete the Kirklees Light Railway Safety Management System and implement it by a defined date. This may also be applicable to other heritage railways.</p> <p>Kirklees Light Railway should, within a timescale agreed with the Office of Rail Regulation, complete and fully implement a safety management system that is comparable with good</p>	<p>Kirklees Light Railway have outlined the actions to be taken in response to the recommendation. Target date is July 2013. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>2            03/07/2011    04/2012</p> <p>Boiler incident on the Kirklees Light Railway</p> <p>Status: Implemented</p>	<p>practice in the heritage sector, and relevant standards and guidance. This should include the identification of risks, determination of safety critical elements of competence and the training and assessment to deliver it (paragraph 94). The Kirklees Light Railway should confirm that the recently-introduced training syllabus and competency arrangements (paragraph 98) are consistent with this.</p> <hr/> <p>The purpose of this recommendation is to make clear to staff preparing locomotives which items must always be checked and provide positive indication that they have done this.</p> <p>Kirklees Light Railway should revise its locomotive preparation checklist to make clear which items must always be checked and which are dependent on the outcome of other checks (paragraph 95).</p>	<p>Kirklees Light Railway has reported that it has taken actions in response to this recommendation. ORR proposes to take no further action unless they become aware that the information provided becomes inaccurate.</p>
<p>1            06/04/2011    05/2012</p> <p>Partial failure of Bridge 94, near Bromsgrove</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to promote the improvement of asset knowledge and to assist asset maintainers and railway staff in identifying the location of structures on site.</p> <p>Network Rail should introduce a programme of marking the position of all track-supporting structures which are not apparent from the surface, so that their presence can be taken into account by those responsible for managing incidents, maintaining the railway, and designing and upgrading infrastructure (paragraphs 109, 112 and 114).</p>	<p>Awaiting response</p>
<p>2            06/04/2011    05/2012</p> <p>Partial failure of Bridge 94, near Bromsgrove</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to address the risk arising from visual examinations being incomplete as a result of access constraints.</p> <p>Network Rail should review the ways in which it visually examines those structures which cannot be seen from a safe observation location and where access is constrained. This review should consider the ways in which effective examinations can be carried out, and where this cannot be achieved, alternative measures to manage the risk. Any necessary improvements to the examinations regime identified in the review should be implemented (paragraph 110a).</p>	<p>Awaiting Response</p>



Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>3            06/04/2011    05/2012</p> <p>Partial failure of Bridge 94, near Bromsgrove</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to enhance the information available to staff reviewing examination reports.</p> <p>Network Rail should improve reference information available to those responsible for reviewing structures examination reports, to enhance the accuracy and effectiveness of the report review and evaluation processes (paragraph 111).</p>	<p>Awaiting Response</p>
<p>1            26/05/2011    07/2012</p> <p>Safety incident between Dock Junction and Kentish Town</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is to improve the way in which incidents involving stranded trains are currently handled across the network with a view to implementing good practice and with the objective of train operators reviewing existing protocols, or jointly developing and agreeing with Network Rail new protocols, that can be applied to the management of all such events.</p> <p>Train operating companies and Network Rail routes over which they operate, should review existing protocols, or jointly develop a new protocol, for stranded trains in accordance with the contents of ATOC / Network Rail Good Practice Guide GPD SP01 'Meeting the needs of passengers when trains are stranded'. The protocols should also consider:</p> <ul style="list-style-type: none"> <li>I the key findings from this investigation;</li> <li>I the different arrangements in place for the interface between Network Rail and train operators' control functions;</li> <li>I the different approaches to managing incidents and good practice applied in different parts of the main-line and other railway networks;</li> <li>I the need to identify who will take the lead role in managing the incident and how key decisions will be recorded and shared between the affected organisations;</li> <li>I the need to provide on site support to the traincrew of such trains in managing passengers' needs;</li> <li>I the need to provide technical support to the train crew of stranded trains, with a particular focus on means of communicating and the need for coordinating the technical and operational response to such incidents;</li> <li>I the need to recognise when minor operational occurrences have the potential to develop into major incidents unless decisions are taken in a timely and decisive manner;</li> </ul>	<p>Awaiting response</p>

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I the views of passenger interest groups and emergency services: and

I the positive and negative role that can be played by social networking sites in the management of such incidents

2	26/05/2011	07/2012	<p>The intent of this recommendation is to ensure that First Capital Connect safety related processes in relation to emergency preparedness are managed effectively.</p> <p>First Capital Connect should carry out a review of its management processes referred to in this report to examine why it did not identify and address deficiencies in emergency preparedness prior to the incident. The lessons learnt from this review should lead to changes in management systems to provide confidence that all such deficiencies will be identified in the future (paragraphs 190h, 192a, 192c, 192f and 196f).</p>	Awaiting response
<p>Safety incident between Dock Junction and Kentish Town</p> <p>Status: Awaiting response</p>				
3	26/05/2011	07/2012	<p>The intent of this recommendation is for safety related lessons learnt during Significant Performance Incident Reviews and other incident review processes to be effectively tracked, implemented and shared with other railway operators, as appropriate.</p> <p>Network Rail and the train operators should amend their processes so that safety lessons identified during Significant Performance Incident Reviews and other incident review processes can be effectively monitored through to closure, and actions taken as appropriate. The process should also include a mechanism for advising other railway operators of safety lessons that may be relevant to them (paragraph 192e).</p>	Awaiting response
<p>Safety incident between Dock Junction and Kentish Town</p> <p>Status: Awaiting response</p>				
1	05/06/2011	08/2012	<p>The aim of this recommendation is to improve the detail of pedestrian injury data to better understand the role of tram front end design in minimising injury.</p> <p>UK tram operators should work together to improve the data collection on tram front end collisions with pedestrians. This is to include greater detail on the type and severity of any injury received as far as possible, and the likely points of contact with the tram (paragraph 82).</p>	Awaiting response
<p>Fatal accident at Piccadilly Gardens, Manchester</p> <p>Status: Awaiting response</p>				

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>2            05/06/2011    08/2012</p> <p>Fatal accident at Piccadilly Gardens, Manchester</p> <p>Status: Awaiting response</p>	<p>The aim of this recommendation is to better understand the design of tram front ends and their potential for injuring pedestrians in collisions.</p> <p>UK tram operators in conjunction with UKTram (as a representative body of UK light rail operators), and in consultation with tram owners, should undertake research into the potential for the reduction of injuries to pedestrians involved in front end collisions with trams. Operators should understand the likely ways in which pedestrians can come into contact with the fronts of trams, and the severity of any consequential injuries. Should this research show that it is appropriate to implement design changes, either to existing trams or emerging new designs, these should be done (paragraph 88b).</p>	<p>Awaiting response</p>
<p>1            10/10/2011    09/2012</p> <p>Person trapped in doors and pulled along platform at King's Cross Stn</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is that the practicability of providing a modified door seal arrangement on Class 365 trains, when the existing seals are replaced during the major overhaul due between 2013 and 2015, should be assessed. If such modifications are practicable for Class 365 trains, consideration should be given to:</p> <p>modifying any similar doors on other classes of trains; and</p> <p>using modified seals if these are available when seal replacement is undertaken before the next major overhaul (eg following damage).</p> <p>As some trains with similar doors are owned by other organisations, the owner of Class 365 trains should make available to these organisations the information needed for them to determine whether they should consider modifying doors on any of their trains.</p> <p>Eversholt Rail UK (Ltd) should determine whether the next planned replacement of Class 365 door seals provides an opportunity to modify the seal arrangements to reduce the risk associated with trapping of objects and people to be as low as reasonably practicable. If such modification is found to be reasonably practicable, Eversholt Rail UK (Ltd) should:</p> <p>determine whether a similar modification is appropriate for other classes of train owned by the Eversholt Rail Group;</p> <p>determine whether such modifications should be applied if seals require replacement before the scheduled date; and</p>	<p>Awaiting response</p>

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make available to other train owners suitable and sufficient information for these owners to establish whether a similar approach should be considered for any of their train doors (paragraph 48).

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1	03/10/2011	10/2012	<p>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.</p> <p>Taking account of the deficiency in sighting time for vulnerable users, Network Rail should:</p> <p>a. Consider whether improvements can be made to sighting towards the east for pedestrians on the south side of Mexico footpath crossing (paragraph 128a).</p> <p>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)</p>	Awaiting response
<hr/>				
2	03/10/2011	10/2012	<p>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 hrs and 23:00 hrs.</p> <p>RSSB should:</p> <p>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</p> <p>b. using the data obtained from implementing part a of this</p>	Awaiting response

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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 hrs and 23:00 hrs and take actions, if appropriate (paragraph 129b).

3      03/10/2011      10/2012  
Fatal accident at Mexico footpath crossing  
(near Penzance)  
Status: Awaiting response

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:

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

I marking and signing the optimum decision point at each crossing;

I using that decision point in estimates of sighting distance at footpath and other crossings; and

I 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).

Awaiting response

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>4            03/10/2011    10/2012</p> <p>Fatal accident at Mexico footpath crossing (near Penzance)</p> <p>Status: Awaiting response</p>	<p>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.</p> <p>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 (paragraph 130d).</p>	<p>Awaiting response</p>
<p>5            03/10/2011    10/2012</p> <p>Fatal accident at Mexico footpath crossing (near Penzance)</p> <p>Status: Awaiting response</p>	<p>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.</p> <p>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:</p> <p>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</p> <p>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).</p>	<p>Awaiting response</p>
<p>1            19/06/2011    11/2012</p> <p>Incident at Llanbadarn Automatic Barrier Crossing (LM) nr Aberystwyth</p> <p>Status: Awaiting response</p>	<p>The intention of this recommendation is that high risk locally monitored automatic crossings in areas signalled by ERTMS should be provided with an engineered safeguard to reduce the risk of train driver error.</p> <p>Network Rail should develop an engineered safeguard to reduce the risk of trains being operated under ERTMS passing over locally monitored automatic crossings (ie AOCL and ABCLs) when the crossings have not operated. This solution should then be applied at Llanbadarn ABCL crossing and, if appropriate, at higher risk crossings on the Cambrian lines and as part of future</p>	<p>Awaiting response</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>2            19/06/2011    11/2012</p> <p>Incident at Llanbadarn Automatic Barrier Crossing (LM) nr Aberystwyth</p> <p>Status: Awaiting response</p>	<p>ERTMS installations. Assessments of risk should include an evaluation of human factors, previous history, including recorded incidents and accidents (paragraph 179).</p> <hr/> <p>The intention of this recommendation is to provide automatic protection at Llanbadarn crossing (similar to that provided at manned barrier crossings) and to remove the plunger at Aberystwyth station.</p> <p>Network Rail should change the design of circuitry at Llanbadarn ABCL to remove the need for a train driver on Network Rail to operate the plunger before departing Aberystwyth station, but still retain an interface between Network Rail and Vale of Rheidol Railway at the crossing to avoid 'blocking back' of road vehicles (paragraphs 178 and 180).</p>	Awaiting response
<p>3            19/06/2011    11/2012</p> <p>Incident at Llanbadarn Automatic Barrier Crossing (LM) nr Aberystwyth</p> <p>Status: Awaiting response</p>	<p>The intention of this recommendation is that the train operating company undertake a study into drivers workload when departing Aberystwyth station.</p> <p>Arriva Trains Wales should carry out a human factors analysis and risk assessment of the workload of drivers when departing Aberystwyth station under different ERTMS modes and implement any findings (paragraph 178).</p>	Awaiting response
<p>4            19/06/2011    11/2012</p> <p>Incident at Llanbadarn Automatic Barrier Crossing (LM) nr Aberystwyth</p> <p>Status: Awaiting response</p>	<p>The intention of this recommendation is to improve the style of driving.</p> <p>Arriva Trains Wales should review the way in which drivers interact with ERTMS and DMIs and develop new training and on-going competence checks to encourage a move away from the 'head down' style of driving undertaken by some drivers under ERTMS (paragraphs 118 and 178).</p>	Awaiting response
<p>5            19/06/2011    11/2012</p> <p>Incident at Llanbadarn Automatic Barrier Crossing (LM) nr Aberystwyth</p> <p>Status: Awaiting response</p>	<p>The intention of this recommendation is to clarify the type and quality of documents being submitted as part of a deviation (including a derogation) from Railway Group Standards.</p> <p>Network Rail should review its processes for seeking deviation (including derogation) from Railway Group Standards and Technical Specifications for Interoperability. The review should include consideration of the extent and nature of the risk assessments that should be carried out, and the supporting information provided, for each deviation request (paragraph 179).</p>	Awaiting response

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>6            19/06/2011    11/2012</p> <p>Incident at Llanbadarn Automatic Barrier Crossing (LM) nr Aberystwyth</p> <p>Status: Awaiting response</p>	<p>The intention of this recommendation is to ensure that location specific risks are considered when standards committees approve, and RSSB authorise, deviations (including derogations). The outcome of these considerations should be recorded.</p> <p>RSSB should review and, if necessary, amend the processes and guidance applicable to Standards Committees and RSSB when taking decisions about applications to deviate from Railway Group Standards. This should include:</p> <p>I considering the provision of guidance for Standards Committees on how to make the necessary judgement about whether the risk assessment and supporting analysis is suitable and sufficient and the extent to which location specific risks should be taken into account; and</p> <p>I guidance on how the basis of the Standards Committee's decisions should be recorded.</p> <p>(paragraphs 179 and 180.)</p>	<p>Awaiting response</p>
<p>1            10/04/2011    12/2012</p> <p>Detachment of a cardan shaft at Durham station</p> <p>Status: Awaiting response</p>	<p>The objective of this recommendation is to ensure that the industry completes the work that has already started on reviewing the end float and alignment requirements, as well as the bearing fit as soon as possible and incorporates the relevant changes in a revised overhaul procedure. This recommendation also includes the need for the industry to review the performance of the oil pump particularly in light of the more recent incident at Plawsworth (paragraph 151).</p> <p>The owners of class 14x vehicles, in consultation with suppliers of overhaul services, should review the final drive design, design tolerances and the maintenance processes in respect of:</p> <p>I end float setting (paragraphs 154a and 154b);</p> <p>I input and pinion shafts alignment (paragraph 154c);</p> <p>I fit of the bearings in the housing bore (paragraph 155a); and</p> <p>I oil pump performance (paragraph 155d).</p> <p>Any required changes identified by the review should be suitably documented and incorporated in overhaul procedures. This recommendation applies to the modified design of the final drive (paragraph 159b).</p>	<p>Awaiting response</p>



Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>2            10/04/2011    12/2012</p> <p>Detachment of a cardan shaft at Durham station</p> <p>Status: Awaiting response</p>	<p>The objective of this recommendation is to ensure that designers of railway equipment validate any changes to the design of safety critical components.</p> <p>The owners of class 14x vehicles should review the adequacy of their existing arrangements for ensuring that the suppliers of their equipment validate changes to the design of safety critical components (paragraphs 158c and 159b).</p>	Awaiting response
<p>3            10/04/2011    12/2012</p> <p>Detachment of a cardan shaft at Durham station</p> <p>Status: Awaiting response</p>	<p>The objective of this recommendation is to ensure that Northern Rail has in place risk control measures to detect impending final drive failures before they occur.</p> <p>Northern Rail, in consultation with the owners of class 14x vehicles, should develop, validate and implement measure(s) to identify and prevent the onset of failure of a recently overhauled final drive so as to prevent complete failure where practicable (paragraphs 156 and 166).</p> <p>Note: the measure(s) implemented to address this recommendation may be appropriate to all class 14x final drives.</p>	Awaiting response
<p>4            10/04/2011    12/2012</p> <p>Detachment of a cardan shaft at Durham station</p> <p>Status: Awaiting response</p>	<p>The objective of this recommendation is to ensure that key design information is made available to companies undertaking work on class 14x final drives.</p> <p>For class 14x vehicles, vehicle owners in consultation with operators should review whether the necessary technical information for the maintenance and overhaul information of the class 14x final drives is still available and if it is, they should arrange for it to be sourced. This information should be kept by the vehicle owners and made available to all existing and future operators, maintainers and overhaulers as relevant (paragraphs 158a and 158b).</p> <p>Note: the principle outlined in this recommendation may also apply to other traction and rolling stock equipment and other fleets of train.</p>	Awaiting response
<p>5            10/04/2011    12/2012</p> <p>Detachment of a cardan shaft at Durham station</p> <p>Status: Awaiting response</p>	<p>The objective of this recommendation is to ensure that the final drives are tested in conditions representative of their operational duty before being released to the operator.</p> <p>The owners of class 14x vehicles should review the testing of the final drives after overhaul to confirm that it is done in conditions sufficiently representative of their operational duty</p>	Awaiting response

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and where appropriate amend the testing requirements accordingly. The following areas should be considered:

I operational speed;

I loading on the shafts; and

I external environmental conditions (paragraph 155c).

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6            10/04/2011    12/2012  
Detachment of a cardan shaft at Durham  
station

Status: Awaiting response

The objective of this recommendation is to ensure that Northern Rail's plans for dealing with accidents and incidents are adequate.

Northern Rail should complete the review of its procedures governing post-accident actions and implement any necessary changes to ensure that the risks to personnel and the environment from movement of damaged trains and trains with defective equipment is appropriately managed (paragraphs 159a and 167).

Awaiting response

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1            11/07/2011    13/2012  
Train departed with doors open, Warren  
Street, Victoria Line, London

Status: Awaiting response

The intention of the recommendation is that train operators should be issued with clear instructions on the action that they should take in the event of an activation of the sensitive edge system and should be briefed on their content.

In the light of the Warren Street incident, LUL should review the current instructions on the action that train operators should take in the event of the sensitive edge system being activated. This should include, in particular:

I the options available to train operators for dealing with activations of the sensitive edge system and which option should be used first in specific circumstances;

I under what circumstances the sensitive edge override should be used; and

I the information provided by the TCMS to see whether there is suitable and sufficient information to train operators about using the override.

Any necessary changes to the instructions should be implemented, and train operators briefed and/or trained, as appropriate, on the changes made (paragraph 131c)

Awaiting response

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<p>2            11/07/2011    13/2012</p> <p>Train departed with doors open, Warren Street, Victoria Line, London</p> <p>Status: Awaiting response</p>	<p>The intention of the recommendation is to identify why LUL did not follow good practice for the introduction of the sensitive edge override modification and why this was not detected.</p> <p>In relation to the sensitive edge override modification, LUL should review how its process for managing engineering change and the associated management controls was not followed, and why it did not adequately identify the risks associated with the design modification. The review should include:</p> <p>I why good and established practice in engineering change management was not followed during the design and introduction of the sensitive edge override modification with particular reference to the specification of requirements and the risk assessment of the proposed changes; and</p> <p>I why the management system and controls did not identify or correct the design deficiencies relating to the sensitive edge override modification.</p> <p>LUL should implement any necessary changes to its process for managing engineering change and associated management controls (paragraph 131d.ii).</p>	<p>Awaiting response</p>
<p>3            11/07/2011    13/2012</p> <p>Train departed with doors open, Warren Street, Victoria Line, London</p> <p>Status: Awaiting response</p>	<p>The intention of the recommendation is that LUL's competence management arrangements for train operators should:</p> <p>a) identify those who are unable to reliably and correctly respond to out-of-course events (including faults and failures); and</p> <p>b) incorporate arrangements designed to eliminate or resolve the competence deficiencies identified.</p> <p>In the light of the findings of this investigation, LUL should review those elements of its competence management system that relate to the ability of train operators to respond to out-of-course events, faults and failures. This should take into account:</p> <p>I how the evidence from train operators' performance in practical training and instruction is captured and dealt with by the competence management system;</p> <p>I how the evidence from train operators' performance in incidents in service is captured and dealt with by the competence management system (paragraph 124); and</p> <p>I how LUL acts on any deficiencies identified from the above, relating to a train operator's ability to recognise and correctly</p>	<p>Awaiting response</p>

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respond to an out-of-course event, with the aim of eliminating any competence deficiencies identified, including how corrective action plans are developed, implemented and monitored to successful conclusion.

LUL should implement any necessary changes to the competence management system (paragraph 131d.iii).

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4            11/07/2011    13/2012  
Train departed with doors open, Warren  
Street, Victoria Line, London  
Status: Awaiting response

The intention of the recommendation is that train operators should be aware that operational or technical advice is available when required and they should know how to obtain it so that they can effectively resolve faults and failures and avoid mistakes which could reduce safety.

Awaiting response

LUL should review how and in what circumstances train operators should request assistance following defects in service and implement any changes found necessary. This should include the adequacy of the competence management system and competence assessment of train operators in requesting assistance when needed. In addition:

I train operators should be reminded of the availability of operational and technical advice when they are unable to resolve train defects and how they can obtain it; and

I service controllers should be reminded that they should challenge train operators if they believe them to be acting outside LUL's mandatory instructions (paragraph 131d.vi).

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1            10/09/2011    14/2012  
Incident involving runaway track maintenance  
trolley nr Haslemere  
Status: Awaiting response

The purpose of this recommendation is to improve the effectiveness of the pre-use checks on a trolley and to raise the awareness of hand trolley controllers of the importance of the automatic function of trolley brakes.

Awaiting response

Network Rail should review and revise the material used for training and assessing the competence of hand trolley controllers, such that the required pre-use checks for all trolleys are clearly and concisely stated in a form which is readily accessible to hand trolley controllers. These checks should be consistent with the requirements of Handbook 10 of the Rule Book, and should include a functional brake test using the brake handle to test automatic operation of the brake. The revised material should also incorporate suitable references to the risk arising from the use of trolleys on gradients (paragraphs 98 and 99).

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>2            10/09/2011    14/2012</p> <p>Incident involving runaway track maintenance trolley nr Haslemere</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to provide assurance that the risk associated with the design of a new product has been assessed and mitigated before it is approved for use by Network Rail.</p> <p>Network Rail should clarify the responsibilities for the specification, assessment, approval and introduction to use of each new item of plant that has the capability to import risk to the operational railway. These responsibilities should include confirming that:</p> <p>a. a design risk assessment has been carried out, taking account of realistic and potential failure modes, the way the equipment is used and the effects of wear and tear (paragraph 101);</p> <p>b. the supplier has produced operational and maintenance instructions which provide appropriate mitigation for the risks (paragraph 103a); and</p> <p>c. Network Rail has incorporated the manufacturer's instructions into its own work instructions or assessed the risk of adopting an alternative approach (paragraph 103b).</p>	<p>Awaiting response</p>
<p>3            10/09/2011    14/2012</p> <p>Incident involving runaway track maintenance trolley nr Haslemere</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is for Torrent Trackside to improve the competence of its staff to maintain plant.</p> <p>Torrent Trackside should improve its processes for providing suitable maintenance information, documents and training to its personnel for all of the plant which they may be required to service. The information provided to its staff should be sufficient to enable them to discharge their responsibilities competently and safely (paragraph 102).</p>	<p>Awaiting response</p>
<p>4            10/09/2011    14/2012</p> <p>Incident involving runaway track maintenance trolley nr Haslemere</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is for Network Rail to enhance its process for taking action on RAIB recommendations applicable to other areas, or which are relevant to its own operations but have been addressed to other operators.</p> <p>Network Rail should review and, if necessary, revise its processes for taking action on RAIB recommendations, so that suitable actions can be identified, implemented and tracked through to closure. These may have been made for a different system, for example road-rail vehicles instead of trolleys, or may be relevant to its own operations but addressed to other operators (paragraph 103c).</p>	<p>Awaiting response</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>5            10/09/2011    14/2012</p> <p>Incident involving runaway track maintenance trolley nr Haslemere</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is for Network Rail to determine whether further action is required to improve the culture at Havant track maintenance depot, pending implementation of its national safety culture initiatives.</p> <p>Network Rail should review the actions it has taken at Havant depot since the incident, taking account of the issues identified in this report. If appropriate, it should prepare and implement an action plan for any additional actions necessary to provide an adequate level of safety (paragraph 104a). The review should include (but not necessarily be limited to):</p> <ul style="list-style-type: none"> <li>a. compliance with rules and procedures;</li> <li>b. reporting of safety-related incidents; and</li> <li>c. management of defective equipment.</li> </ul>	<p>Awaiting response</p>
<p>6            10/09/2011    14/2012</p> <p>Incident involving runaway track maintenance trolley nr Haslemere</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is for Network Rail to take account of known areas of poor mobile phone reception when planning infrastructure work with the potential to affect the safety of the line.</p> <p>Network Rail should collate information on known areas of poor mobile phone reception on its infrastructure and, where necessary, make arrangements for alternative means of communication between front-line staff with safety responsibilities (paragraph 104b).</p>	<p>Awaiting response</p>
<p>1            24/08/2011    15/2012</p> <p>Fatal accident Gipsy Lane Footpath Crossing, Needham Market, Suffolk</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is for Network Rail to improve the safety of pedestrians at Gipsy Lane crossing.</p> <p>Network Rail should arrange for the closure of Gipsy Lane footpath crossing. If Network Rail is not granted permission by the local council to close Gipsy Lane footpath crossing, it should take appropriate risk-reduction measures so that pedestrians have sufficient time to cross safely, and are adequately warned of approaching trains (paragraphs 117a and 117b).</p>	<p>Awaiting response</p>
<p>2            24/08/2011    15/2012</p> <p>Fatal accident Gipsy Lane Footpath Crossing, Needham Market, Suffolk</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is for Network Rail to improve the accuracy and consistency of data collected at level crossings during site visits and make certain that any changes to previous data are fully understood.</p> <p>Network Rail should have effective systems in place for accurate information gathering during data collection visits at</p>	<p>Awaiting response</p>

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level crossings. Any changes from previous data collected should be clearly understood and feedback given to the relevant person where data is incorrect (paragraphs 117c, 117d, 117e, 117f and 119a). This includes data relating to:

I the number of crossing users where the quick census is undertaken;

I the use of whistle board protected crossings during the night-time quiet period;

I use of the crossing by vulnerable users;

I location of whistle boards;

I crossing length;

I traverse distance; and

I distance from each crossing gate and decision point to the nearest rail.

3            24/08/2011    15/2012  
Fatal accident Gipsy Lane Footpath Crossing,  
Needham Market, Suffolk  
Status: Awaiting response

The intent of this recommendation is for Network Rail to develop guidance for use by the level crossing teams on the circumstances under which short-term mitigation measures are to be implemented at level crossings that have insufficient sighting or warning of approaching trains (paragraphs 117d, 117f, 118 and 119d).    Awaiting response

Network Rail should develop its guidance for use by level crossing teams to include:

I a clear definition of what constitutes a 'higher than usual' number of vulnerable users;

I implementing risk-reduction measures at crossings that have deficient sighting or warning times; and

I when speed restrictions must be imposed, what type of speed restriction is to be used (emergency, temporary or permanent) and the timescales for imposing speed restrictions.

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<p>4            24/08/2011    15/2012</p> <p>Fatal accident Gipsy Lane Footpath Crossing, Needham Market, Suffolk</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is for Network Rail to enhance the cost-benefit analysis function within the ALCRM so that all benefits are properly considered.</p> <p>Network Rail should combine within the ALCRM the two different cost-benefit analysis tools currently used by the level crossing risk management teams so that all benefits are properly considered as part of the cost-benefit analysis of risk reduction measures (paragraph 119b).</p>	<p>Awaiting response</p>
<p>1            12/06/2011    16/2012</p> <p>Track worker struck by a train at Stoats Nest Junction</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is to achieve, as soon as reasonably practicable, full implementation of processes intended to ensure that managers do not undermine the safety related responsibilities of controllers of site safety.</p> <p>Network Rail should develop a time based programme which expedites the implementation of its existing activities designed to improve safety culture and qualities of safety leadership for:</p> <p>a. track maintenance staff; and</p> <p>b. their managers.</p> <p>Activities covered by this programme should include steps to enhance the quality of safety leadership provided by the COSS, and to address the behaviour of managers when working on site such that this role of the COSS is not undermined.</p>	<p>Awaiting response</p>
<p>1            18/07/2011    17/2012</p> <p>Container train accident near Althorpe Park, Northamptonshire</p> <p>Status: Awaiting response</p>	<p>The intention of this recommendation is to make other companies, which design, modify or repair freight containers, aware of the criticality of bolted joints so that full consideration is given to ensuring that their integrity is sufficient for foreseeable in-service loads.</p> <p>The Health and Safety Executive should issue a safety bulletin to make manufacturers and users of converted freight containers aware of the need for a competent assessment of the adequacy of bolted joints, which are used to secure exterior attachments, when designing, modifying or repairing containers. It should also ask the organisations authorised to approve containers to cascade this information to their clients (paragraphs 102a and 102b).</p>	<p>Awaiting response</p>



Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>2            18/07/2011    17/2012</p> <p>Container train accident near Althorpe Park, Northamptonshire</p> <p>Status: Awaiting response</p>	<p>The intention of this recommendation is to ensure that, in the short term, CSC approval gives assurance that a competent organisation has considered the detachment hazards highlighted by this accident and judged that the associated risks are acceptable.</p> <p>The Heath and Safety Executive should request that the International Maritime Organization issue a safety brief to all bodies authorised to approve freight containers in accordance with the International Convention for Safe Containers. This should advise them of the need to consider the integrity of all exterior attachments, and their fixings, against all foreseeable in-service loads when approving new, modified or repaired containers (paragraphs 38, 39, 41,102c and 104).</p>	Awaiting response
<p>3            18/07/2011    17/2012</p> <p>Container train accident near Althorpe Park, Northamptonshire</p> <p>Status: Awaiting response</p>	<p>The intention of this recommendation is to ensure that, in the longer term, CSC approval gives assurance that the risk of a structure detaching from a freight container is acceptably low during handling and for all modes of surface transportation.</p> <p>The Health and Safety Executive should request that the International Maritime Organization reviews international reports of structural detachment from freight containers and evaluates the risk to human life during transportation and handling. If appropriate, it should update the International Convention for Safe Containers to include requirements for the integrity of all exterior attachments, and their fixings, against all foreseeable in-service loads (paragraphs 38, 39, 41, 102c and 104).</p>	Awaiting response
<p>4            18/07/2011    17/2012</p> <p>Container train accident near Althorpe Park, Northamptonshire</p> <p>Status: Awaiting response</p>	<p>The intention of this recommendation is that rail freight operators have arrangements in place sufficient to manage the risk associated with the structural integrity of freight containers carried on the railway. These management arrangements should not be solely reliant on visual checks, because structural defects may be hidden. Management of the risk could be achieved through:</p> <p>I demonstration of compliance to safety requirements (eg of the CSC), and, where necessary, additional actions to address risks not covered; or</p> <p>I structural assessments by a suitable qualified and experienced person.</p> <p>Implementation of the above could be through setting specific contractual requirements or by checking that there is evidence when accepting the container onto the railway.</p>	Awaiting response

Note: once Recommendation 2 (International Maritime Organization to issue a safety brief) or Recommendation 3 (updating of the CSC) has been implemented, compliance with the CSC would be sufficient in its own right.

Freightliner should review its current operating procedures and conditions of acceptance for freight containers. It should confirm that the arrangements in place to ensure that containers (including any externally attached structures) have been assessed as having sufficient structural integrity are sufficient for the risk posed (paragraph 103a). This recommendation may also be applicable to other train operators that carry freight containers.

1	27/07/2011	18/2012	<p>The purpose of Recommendation 1 is to achieve a standardised procedure for monitoring and recording the degradation of switches at risk of causing derailment and the planning of timely maintenance intervention or renewal of worn components before the limits in the 053 standard are exceeded. This is particularly necessary for switches in high risk areas such as the approaches to busy stations which are exposed to high levels of wear, where access for inspection and maintenance is limited and where their availability for service is critical.</p> <p>Network Rail should provide guidance on maintenance intervention limits and their application to manage wear on switch rails as part of its asset management strategy to reduce the likelihood of switches failing the 053 standard and the risk of derailment (paragraph 176).</p>	Awaiting response
<hr/>				
2	27/07/2011	18/2012	<p>The purpose of Recommendation 2 is to gain assurance that the mechanisms of derailment are fully understood, that these are fully addressed by the inspection procedures in the 053 standard and that the inspection procedures are uniformly applied as intended.</p> <p>a. Network Rail should carry out a thorough technical review of the 053 standard to satisfy itself that it has a full understanding of how the standard addresses the following:</p> <p>I the risk of derailment from worn wheels on a switch rail that is compliant with the TGP8 gauge (paragraphs 172 and 179a);</p> <p>I the practicability of achieving a 1:600 gradient when blending-out a grinding repair of switch rail damage, or for removing a</p>	Awaiting response

derailment hazard 1 (paragraphs 173); and

l the potential risk of a ramp being created by the introduction of a switch rail that is failing gauge 2 in the first metre, between a sidworn stock rail and wheel flange, particularly where the wheel flange is in flange contact with the stock rail (paragraph 172).

b. In the short term, Network Rail should also review the scope for misinterpretation and inconsistent application of the standard's requirements and take any necessary action, for example, through briefing and its competence management system, to ensure that there is a common understanding and application of the standard's procedures for inspection and repair (paragraph 179b).

3	27/07/2011	18/2012	<p>The purpose of Recommendation 3 is to achieve a means for gauging the flange contact angle of switch rails which reduces the reported difficulties of use of the current TGP8 gauge and which engenders greater confidence in the readings obtained.</p> <p>Network Rail should investigate potential improvements to the TGP8 gauge for conducting detailed inspections to the 053 standard, or develop an alternative means for assessing the flange contact angle of switch rails. The aim should be to provide a more accurate and objective method for determining a non-compliant flange contact angle on a switch rail and which is more ergonomically suited to on-track conditions of use (paragraph 179c).</p> <p>Network Rail should then take steps to implement any improvements identified, or introduce any alternative assessment method, and train/brief staff as necessary.</p>	Awaiting response
Derailment at Princes Street Gardens, Edinburgh				
Status: Awaiting response				
4	27/07/2011	18/2012	<p>The purpose of Recommendation 4 is to extend the criteria for fitting automatic lubricators to high risk switches which may not qualify for automatic lubrication under current standards.</p> <p>Network Rail should consider whether the criteria specified in NR/L3/TRK/3510/A01 for the installation of automatic lubricators on switches should be extended to include the high rails of switches subject to sidewear in areas, such as the approaches to busy stations, where access for maintenance is limited, and where automatic lubrication could slow the development of sidewear and mitigate the risk of derailment (paragraph 175b).</p>	Awaiting response
Derailment at Princes Street Gardens, Edinburgh				
Status: Awaiting response				

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>5            27/07/2011    18/2012</p> <p>Derailment at Princes Street Gardens, Edinburgh</p> <p>Status: Awaiting response</p>	<p>The purpose of Recommendation 5 is to address factors which were also found in the RAIB's investigation of similar derailments at London Waterloo and Exhibition Centre, Glasgow.</p> <p>Network Rail should review the actions taken in response to the recommendations in the RAIB report 44/2007 to identify why these were insufficient to prevent the recurrence of issues they were intended to address. The review should include an assessment of how operational expectations of availability for service influence the implementation the 053 standard and consider the need for a reappraisal of how derailment risks at switches are managed to prevent their recurrence in future (paragraphs 173, 174a to 174c, 175a, 176, 177, 179f and 180 to 185).</p>	<p>Awaiting response</p>
<p>1            26/08/2011    19/2012</p> <p>Derailment at Bordesley junction, Birmingham</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is to reduce the risk of operating a privately owned wagon over the national network once a fleet wide problem has been identified. It aims to improve the likelihood that the Network Rail Network Certification Body (previously known as the PWRAMG), in conjunction with private wagon owners, will implement short term measures, such as additional maintenance checks, to manage the risk in advance of a longer term solution.</p> <p>Network Rail through its Network Certification Body<sup>11</sup> should review its own processes to make sure that the risks of continuing to operate a fleet of wagons are managed once a fleet wide problem is discovered. The review should consider including processes for:</p> <ul style="list-style-type: none"> <li>I assessing the risk of continued operations and identifying the need for any immediate measures that need to be taken to control the risk;</li> <li>I identifying the long term measures that need to be taken to resolve the fleet wide problem; and</li> <li>I assigning responsibilities, priorities and timescales for implementing and managing both the immediate and long term measures.</li> </ul> <p>Once the review has identified what reasonable improvements can be made to the processes, the Network Certification Body should implement them (paragraphs 138a, 138c, 138cii and 140a).</p>	<p>Awaiting response</p>

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<p>2            26/08/2011    19/2012</p> <p>Derailment at Bordesley junction, Birmingham</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is to prevent a PHA wagon from entering into service with worn suspension components, which can increase the likelihood of the suspension locking-up, increasing the risk of a derailment. This can be achieved through a detailed review, from first principles, of how the suspension components on a PHA wagon wear. The maintenance plan should then be revised as necessary. The review should also address the current anomaly in the PPM &amp; VIBT maintenance plans which calls for certain components to be examined when they cannot be seen if the wheelset is in place.</p> <p>Network Rail through its Network Certification Body, and in conjunction with Lafarge Aggregates Ltd and Wabtec Rail Limited, should lead a fundamental review of how the suspension of the PHA wagon is maintained. The review should call upon relevant technical expertise to:</p> <p>I look at how the suspension works as a whole and understand the role that each individual component performs; and</p> <p>I use this knowledge to document the actions for maintaining a fully functioning suspension, which may include monitoring, measuring and setting limits for the permitted overall amount of wear in the suspension and also individual component wear, including specific actions and limits set to account for those components that are not fully visible when the wheelset is in place.</p> <p>Once the review has decided what actions it is reasonable to take, they should be implemented in the maintenance plans for the PHA wagon fleet (paragraphs 138a, 138b, 138c and 138ciii).</p>	<p>Awaiting response</p>
<p>3            26/08/2011    19/2012</p> <p>Derailment at Bordesley junction, Birmingham</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is to reduce the risk of operating the PHA wagon fleet by implementing modifications that have been tested and shown to reduce the number and duration of suspension lock-ups on these wagons. It will also require Lafarge to set a timescale for rolling out the modifications to all of its PHA wagons.</p> <p>Lafarge Aggregates Ltd should, with reference to POCL 651, implement suspension modifications to its fleet of PHA wagons as soon as practicable to reduce the likelihood of suspension lock-ups (paragraphs 138a, 138c and 138ci).</p>	<p>Awaiting response</p>

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<p>4            26/08/2011    19/2012</p> <p>Derailment at Bordesley junction, Birmingham</p> <p>Status: Awaiting response</p>	<p>At present, Network Rail track quality supervisors will only be told the lines and mileages to be worked on during a shift, although sometimes they may be asked to give priority to part of the planned mileage. If their brief included information on what the work was aiming to achieve (eg to improve the general track quality, address a number of discrete track geometry faults, etc), Network Rail's track quality supervisors could make better informed decisions on what work to prioritise if the planned work needs to be changed at short notice (eg time is reduced due to a late start).</p> <p>Network Rail should review and implement changes to its processes for briefing staff responsible for controlling the work carried out by on-track machines, so that their briefings will include information on whether any part of the work should be given priority over another and the reasons for such prioritisation (paragraph 138g).</p>	<p>Awaiting response</p>
<p>1            19/12/2011    20/2012</p> <p>Collision between a train and lorry on Llanboidy AHB level crossing</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to make the crossing, as viewed by a road user, more closely parallel to the rest of the road and hence provide a clear exit if the user is on the crossing when the barriers start to lower.</p> <p>Network Rail should develop an alternative arrangement for Llanboidy level crossing to reduce the apparent misalignment of the road over the crossing relative to the approaches and to bring the road markings and positioning of equipment including road traffic signals into compliance with current traffic signs regulations. Having developed a suitable design, Network Rail should propose to the ORR a revision of the Llanboidy level crossing order accordingly.</p>	<p>Awaiting response</p>
<p>2            19/12/2011    20/2012</p> <p>Collision between a train and lorry on Llanboidy AHB level crossing</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to give guidance on how to deal with crossings where site constraints force the road over the crossing to not be parallel with its approaches and to ask crossing designers to consider the escape route beyond the crossing rather than just the gap at the barrier line (chapter 2, paragraph 245 of the ORR guide).</p> <p>ORR should revise Railway Safety Publication 7 'Level crossings: A guide for managers, designers and operators' to provide:</p> <p>I guidance on how to assess the misalignment between the centreline of the road over the crossing and the road approaches and how to mitigate its effects; and</p>	<p>Awaiting response</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
	I guidance supplementing the existing requirement for a 3 m minimum gap between barrier tip and road edge to ensure consideration of the actual vehicle exit path taking into account the largest vehicle permitted to use the crossing without telephoning the signaller.	
3      19/12/2011      20/2012 Collision between a train and lorry on Llanboidy AHB level crossing Status: Awaiting response	The purpose of this recommendation is to ensure that the effect of misalignment of the road is taken account of in the Network Rail level crossing risk management process.  Network Rail should revise its risk management process for level crossings to take account of risks arising from the misalignment of the road over the crossing relative to the rest of the road.	Awaiting response
4      19/12/2011      20/2012 Collision between a train and lorry on Llanboidy AHB level crossing Status: Awaiting response	The purpose of this recommendation is to prevent parked staff vehicles causing traffic to block back onto a level crossing, in particular vehicles of maximum legal dimensions.  Network Rail should provide guidance to its staff and contractors on where to park their vehicles when working on or around level crossings where there is potential for such vehicles to block the access and egress from the crossing.	Awaiting response
5      19/12/2011      20/2012 Collision between a train and lorry on Llanboidy AHB level crossing Status: Awaiting response	The purpose of this recommendation is to find a means of mitigating the risk to the driver from detachment of the cab GRP structure during a collision.  Angel Trains should investigate and, where appropriate implement, means of mitigating the risk to cab occupants from detachment of the cab GRP panels in class 175 units during a collision.	Awaiting response
6      19/12/2011      20/2012 Collision between a train and lorry on Llanboidy AHB level crossing Status: Awaiting response	The purpose of this recommendation is to reassess the risks associated with coupler bump stop mounting and retention arrangement.  Alstom and Angel Trains should assess the safety risks of the existing design of the coupler lateral bump stop mounting. Where it is reasonably practicable to reduce the risk of a bump stop detaching and derailing the train, then these improvements should be implemented.	Awaiting response

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>1            20/04/2011    21/2012</p> <p>Collapse of the OHL near to Jewellery Quarter Tram Stop, Midland Metro</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to prevent damage to tensioned components within the Midland Metro OLE system which may result in their failure.</p> <p>National Express Midland Metro should determine the minimum mechanical clearance necessary around tensioned components within the OLE system to prevent contact that may damage them. It should introduce controls to prevent smaller clearances than this minimum from either being introduced into the system or developing during operational service and not being detected (paragraphs 128b, 129d, 130c and 130d).</p>	Awaiting response
<p>2            20/04/2011    21/2012</p> <p>Collapse of the OHL near to Jewellery Quarter Tram Stop, Midland Metro</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to ensure that persons holding responsibility for directing work on the OLE on the Midland Metro and/or for passing it as being fit for service have access to up-to-date and relevant information regarding its correct installation and configuration.</p> <p>National Express Midland Metro should ensure that staff within its organisation that hold responsibility for supervising work on the OLE and/or for passing it as being fit for service have access to the information needed for them to confirm its correct installation and configuration. This information should be up-to-date and accurate and would typically include items such as manuals, drawings or other supporting documents. This information should be made available to any third-parties undertaking similar duties (paragraph 130a).</p>	Awaiting response
<p>3            20/04/2011    21/2012</p> <p>Collapse of the OHL near to Jewellery Quarter Tram Stop, Midland Metro</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to ensure that the mechanism(s) by which operating loads are able to deform the twin track bracket arm assembly at 18512 pole are identified and addressed.</p> <p>National Express Midland Metro should determine how the operating loads within the OLE are able to cause the type of deformation observed in the twin track bracket arm assembly at 18512 pole in July 2011. It should identify and implement appropriate measures to remove the causes of this deformation (paragraphs 128c and 129c).</p>	Awaiting response
<p>4            20/04/2011    21/2012</p> <p>Collapse of the OHL near to Jewellery Quarter Tram Stop, Midland Metro</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to ensure that the ability of bracket foot assemblies to rotate freely is not restricted by contact between pole bracket clevises and clevis covers.</p> <p>National Express Midland Metro should inspect the tensioned section of the OLE to ensure that there is clearance between the</p>	Awaiting response



Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
	clevises of OLE pole brackets and the clevis covers of bracket foot assemblies sufficient to allow these assemblies to rotate freely around pole bracket pins. Any inadequate clearances identified should be rectified (paragraph 129a).	
<p>5            20/04/2011    21/2012</p> <p>Collapse of the OHL near to Jewellery Quarter Tram Stop, Midland Metro</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to ensure that National Express Midland Metro identifies OLE components that may affect the safe operation of the tramway and controls any changes made to them.</p> <p>National Express Midland Metro should identify those OLE components which may affect the safe operation of the tramway. It should review the current processes and practices intended to control changes to these components and implement any actions required to ensure that effective change control is exercised in the future (paragraphs 129a and 131a).</p>	<p>Awaiting response</p>
<p>6            20/04/2011    21/2012</p> <p>Collapse of the OHL near to Jewellery Quarter Tram Stop, Midland Metro</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to ensure that any risks created by a driver becoming incapacitated during an incident are assessed and that appropriate mitigation measures are adopted by National Express Midland Metro.</p> <p>National Express Midland Metro should assess what, if any, risks would be created by a driver becoming incapacitated during an incident. It should identify and implement appropriate measures to manage any identified risks, such as additional training for CSRs (paragraph 131b).</p>	<p>Awaiting response</p>
<p>7            20/04/2011    21/2012</p> <p>Collapse of the OHL near to Jewellery Quarter Tram Stop, Midland Metro</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to ensure that the mandatory competencies of drivers and CSRs are assessed and that those found critical to the safe operation of the Midland Metro are subject to a competence management system that ensures they are achieved and maintained.</p> <p>National Express Midland Metro should review the current mandatory competences held by drivers and CSRs in order to identify those which are essential to the safe operation of the Midland Metro. It should identify and implement appropriate measures to ensure that all such competences are maintained (paragraph 131d).</p>	<p>Awaiting response</p>

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>1            22/10/2011    22/2012</p> <p>Fatal accident at James Street station, Liverpool</p> <p>Status: Awaiting response</p>	<p>The objective of this recommendation is to reduce train dispatch accident risk by improving the way in which trains are operated.</p> <p>Merseyrail should evaluate equipment and operational arrangements that allow the person responsible for train dispatch to:</p> <ul style="list-style-type: none"> <li>a. observe the platform and train without interruption for as long as possible, ideally until the train has left the platform; and</li> <li>b. stop the train directly and quickly in an emergency.</li> </ul> <p>Equipment and operational arrangements should be evaluated for existing trains and platforms, and for planned changes and upgrades. The outcome of the evaluation should be a plan to implement appropriate measures to improve safety at the platform/train interface.</p>	Awaiting response
<p>2            22/10/2011    22/2012</p> <p>Fatal accident at James Street station, Liverpool</p> <p>Status: Awaiting response</p>	<p>The objective of this recommendation is to reduce the likelihood of falls through the platform edge gap.</p> <p>Merseyrail, in consultation with Merseytravel, Network Rail and other relevant industry bodies, should evaluate equipment and methods that reduce the likelihood of a person falling through the platform edge gap. Platform edge gap fillers and vehicle body side panels should be included in the evaluation, the outcome of which should be a plan to implement measures when appropriate to do so, for example when trains or the infrastructure are changed, improved or replaced.</p>	Awaiting response
<p>3            22/10/2011    22/2012</p> <p>Fatal accident at James Street station, Liverpool</p> <p>Status: Awaiting response</p>	<p>The objective of this recommendation is for the rail industry to be provided with guidance on reducing risk at the platform/train interface.</p> <p>The Office of Rail Regulation should, in conjunction with railway industry parties, ensure that the findings of this report are taken into account in published guidance on the types of measures that promote the safe movement of trains from platforms through the adequate control of risk. The areas that should be the subject of particular consideration in such guidance are:</p> <ul style="list-style-type: none"> <li>a. equipment and methods which enable the person responsible for dispatch to observe the platform/train interface without interruption for as long as possible, ideally until the train has left the platform;</li> <li>b. equipment and methods which enable the person responsible</li> </ul>	Awaiting response

for dispatch to stop a train quickly in an emergency; and

c. adaptation of trains and infrastructure to reduce the size of the platform edge gap when this is possible and appropriate, for example in connection with investment in new trains and infrastructure.

1	21/05/2012	23/2012	<p>The intention of the recommendation is that the North Yorkshire Moors Railway should review and improve its safety management arrangements relating to shunting. In particular, it is important that the rules covering shunting represent best practice and that training ensures, and assessment tests, a correct understanding of the dangers inherent in shunting and the control measures in place to allow shunting to be carried out safely. As a minimum, it is intended that the review includes consideration of:</p> <ul style="list-style-type: none"> <li>• updating the North Yorkshire Moors Railway's rule book to include relevant rules covering shunting contained in the national network rule book that may reflect learning from accidents that have occurred;</li> <li>• improving the method of training so that it is more formalised and reflects a specific syllabus appropriate to the necessary competence to be achieved;</li> <li>• how assessment and re-assessment should cover all the necessary areas of competence relating to shunting and how the outcomes of assessments should be documented; and</li> <li>• the system of management checks and how they should be documented.</li> </ul> <p>The North Yorkshire Moors Railway should review its safety management arrangements with regard to shunting. The review should particularly take into account the adequacy of, and best practice in, the following:</p> <ul style="list-style-type: none"> <li>• the rules covering shunting;</li> <li>• the method of training staff to undertake shunting duties;</li> <li>• the method of assessment of staff, which should include elements of both practical and written assessment, being passed out for shunting duties for the first time and on subsequent occasions; and</li> </ul>	Awaiting response
<p>Fatal accident at Grosmont, North Yorkshire Moors Railway</p> <p>Status: Awaiting response</p>				

- the system of management checks confirming that safe methods are being applied.

The North Yorkshire Moors Railway should implement any necessary changes and should document the revised safety management arrangements (paragraphs 69a and 69b).

Note that the principles outlined in this recommendation may apply to other heritage railway operators.

1	03/02/2012	24/2012	<p>The intention of this recommendation is that Virgin Trains' drivers have sufficient competence in route knowledge and that this knowledge is regularly reinforced by practical application.</p> <p>Virgin Trains should review, and amend as necessary, its route knowledge training and assessment process so that the risk from drivers exceeding permissible speeds at diverging junctions is adequately controlled. The review should consider the need to reinforce the knowledge by driving over the routes concerned, cab simulation, video based scenario training, or other suitable techniques, and the required frequency of each (paragraph 115a(i)).</p> <p>Note that the principle applied by this recommendation may apply to other train operators.</p>	Awaiting response
<hr/>				
2	03/02/2012	24/2012	<p>The intention of this recommendation is that, at potentially high risk diverging junctions, such as those where the approach speed is 60 mph (96 km/h) or greater and requiring a reduction in speed of a third or more, the risk from a train overspeeding on a diverging route following the clearance of the junction signal under approach control conditions is reduced. Different or additional mitigation may be justified depending on the level of risk identified; this may include replacement by position light junction indicators; replacement of junction indicator by one in modern equivalent form; alteration to signalling controls etc.</p> <p>Network Rail, in conjunction with train operators, should assess the risk from overspeeding at potentially high risk diverging junctions with approach control following the clearance of the junction signal. As a minimum, the scope should include consideration of:</p> <p>I junctions where the speed of the diverging route is significantly lower than the approach speed;</p> <p>I junction signals fitted with standard alphanumeric route</p>	Awaiting response

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indicators; and

I the type of traction using the junction and its ability to  
accelerate following the clearance of the junction signal from red.

The outcome of the risk assessments should be used to  
determine whether different/additional mitigation is required  
(paragraph 115a(iii))

3            03/02/2012    24/2012  
Derailment at Bletchley Junction, Bletchley  
Status: Awaiting response

The intention of this recommendation is to clarify the safety  
significance of the Weekly Operating Notice with respect to the  
information that drivers need to know and the best way to  
present and distribute this information.

Awaiting response

Network Rail, in conjunction with train operating companies,  
should review and where necessary modify the Weekly  
Operating Notice to identify the information that drivers need to  
assure safety and how this content is presented so that it can be  
readily assimilated (paragraph 116a).

1            30/11/2011    25/2012  
Road vehicle incursion and collision with train  
at Stowmarket Road  
Status: Awaiting response

The purpose of this recommendation is for Suffolk County  
Council to validate, and where necessary improve, the way it  
manages all risk from road vehicle incursions.

Awaiting response

Suffolk County Council (SCC) should commission an  
independent review of the actions it has taken following the  
accident in order to assess their completeness and  
effectiveness. In particular this should address the following  
areas (paragraph 141c):

I The processes that are in place to ensure all road vehicle  
incursion locations are identified, assessed (possibly making  
use of recent internet tools (such as Google Earth / Street  
View)), acted upon (including consideration of low-cost  
mitigation measures as well as more expensive options),  
monitored and periodically reviewed. If actions are identified,  
SCC should develop and implement a time-bound programme  
that will be shared with DfT and Network Rail and progress  
reported to those bodies. This process should be documented  
and supervised by senior SCC management.

I Staff are trained and procedures in place for undertaking and  
reviewing risk assessments of road vehicle incursion locations.

I Data management systems (Accsmap and SCC Indexing  
system) and associated documents are in place to ensure that  
all data relating to injury and non-injury accidents at road vehicle

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incursion locations can be captured and identified for analysis and review.

I Processes are in place to ensure that information about road vehicle incursion incidents is shared between all interested parties.

I Processes are in place to ensure that staff are aware of the Department for Transport guidance on the road vehicle incursion and risk assessment process.

Any areas for further improvement should be implemented. Progress with the implementation of identified risk mitigation measures should be reported to DfT and notified to Network Rail.

2 30/11/2011 25/2012  
Road vehicle incursion and collision with train  
at Stowmarket Road

Status: Awaiting response

The purpose of this recommendation is for Network Rail to improve the way in which it manages the risk from road vehicle incursions.

Network Rail should review, and take actions to improve, the effectiveness of its processes for managing the risk from road vehicle incursions. Factors for consideration should include:

I the exchange and management of information between different departments within Network Rail;

I the profile of RVI within relevant working groups including those involving external parties;

I the effectiveness of communications with bodies outside of Network Rail including arrangements for the reporting of all incursion incidents to local highway authorities and police forces; and

I arrangements for managing the relationship with local highway authorities and the monitoring of actions taken following assessments of road vehicle incursion risk (paragraphs 139, 141d, 142a, 144 and 145).

Awaiting response

3 30/11/2011 25/2012  
Road vehicle incursion and collision with train  
at Stowmarket Road

Status: Awaiting response

The purpose of this recommendation is for Network Rail to validate its existing list of locations with significant RVI risk.

Network Rail should review its current data on road vehicle incursion sites, possibly making use of recent internet tools (eg Google Earth / Street View), to determine whether its knowledge of all current road vehicle incursion locations is complete and to assess any that had not previously been considered (paragraph

Awaiting response

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	142a and 144).	
<p>4            30/11/2011    25/2012</p> <p>Road vehicle incursion and collision with train at Stowmarket Road</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to improve the flow of information to key parties in the county of Suffolk.</p> <p>Suffolk County Council should brief parish and district councils, and Suffolk Constabulary on possible vehicle incursion locations to encourage the reporting of road traffic concerns at or near such places. The way in which this information is managed should be captured within a SCC procedure (paragraph 141c).</p>	Awaiting response
<p>5            30/11/2011    25/2012</p> <p>Road vehicle incursion and collision with train at Stowmarket Road</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to clarify which body has regulatory and enforcement responsibility concerning highway authorities' implementation of measures to reduce road vehicle incursion risk. Any changes to the existing arrangements will need to be reflected in amendments to the Memorandum of Understanding and will take into account relevant findings in the final report of the Law Commissions on level crossings and any subsequent changes to legislation.</p> <p>The Office of Rail Regulation and the Health and Safety Executive should jointly review their current Memorandum of Understanding and amend it as necessary to define clearly the responsibilities of each party in relation to enforcing actions to mitigate the risk arising from road vehicle incursions onto the railway. The revised Memorandum of Understanding should take into account the findings of the Law Commissions on level crossings, when published, and include:</p> <p>I a clear definition of the circumstances under which each party takes responsibility for enforcement; and</p> <p>I a mechanism for resolving disputes over enforcement responsibility.</p> <p>The Health and Safety Executive and the Office of Rail Regulation should jointly define a time-bound programme for the development and implementation of the review and consider actions that should be taken in the interim period if an amendment to current legislation is required to achieve the desired outcome (paragraph 142d).</p>	Awaiting response

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on ORR's report to RAIB)
<p>6            30/11/2011    25/2012</p> <p>Road vehicle incursion and collision with train at Stowmarket Road</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is for the DfT to improve its intelligence on the number and status of road vehicle incursion sites.</p> <p>DfT should undertake a review of all outstanding road vehicle incursion sites and establish a regime to continuously monitor progress with the implementation of the required risk mitigation measures (paragraphs 142b and 142c).</p>	Awaiting response
<p>7            30/11/2011    25/2012</p> <p>Road vehicle incursion and collision with train at Stowmarket Road</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is for the lessons learnt from this investigation to be disseminated to local highway authorities.</p> <p>DfT should implement a programme and forum to disseminate the key findings of this report to all local highway authorities. In particular, highway authorities should be reminded of the need to:</p> <p>I ensure that time-bound programmes of action are taken to mitigate risk at known high risk road vehicle incursion locations;</p> <p>I reliably capture all data on all road accidents that have occurred near the railway boundary;</p> <p>I engage with Network Rail, British Transport Police and local police road safety units to ensure that there are processes in place to share intelligence relating to known or new road vehicle incursion locations; and</p> <p>I ensure that all current and new staff are aware of the procedures relating to the risk from road vehicle incursion sites (paragraphs 142b and 142c).</p>	Awaiting response
<p>8            30/11/2011    25/2012</p> <p>Road vehicle incursion and collision with train at Stowmarket Road</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to achieve better co-ordination between databases so that relevant intelligence is shared.</p> <p>DfT should, in consultation with ACPO, undertake a review of existing data systems (eg Accsmap/Crash system/National Resilience Extranet) to improve the ways in which data relevant to the risk of vehicle incursions can be exchanged and shared with interested parties such as Network Rail, highways authorities and the police (paragraphs 142b,142c and 144).</p>	Awaiting response



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<p>9            30/11/2011    25/2012</p> <p>Road vehicle incursion and collision with train at Stowmarket Road</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to achieve better exchange of data between Local Resilience forum 'responders' so that relevant intelligence on outstanding high risk locations is shared.</p> <p>The DfT should, in consultation with the Civil Contingencies Secretariat (Resilience, Capabilities and Risks) and Local Resilience Forums incorporate into the local risk assessment guidance the need to consider the potential for serious accidents at high-risk road vehicle incursion locations (particularly those where mitigation measures have yet to be implemented) (paragraph 143).</p>	<p>Awaiting response</p>
<p>1            12/04/2012    26/2012</p> <p>Person trapped in train door at Jarrow station, Tyne &amp; Wear Metro</p> <p>Status: Awaiting response</p>	<p>The purpose of this recommendation is to reduce the number of deliberate door obstructions on the Tyne and Wear Metro network, by raising passenger awareness, thereby reducing the risk from future trap and drag incidents.</p> <p>DB Regio Tyne and Wear should:</p> <p>a. develop its current actions, reported at paragraph 77, to reduce the frequency of door obstruction by passengers into an ongoing long term strategy and implement this; and</p> <p>b. introduce a system of monitoring the frequency of door obstructions on its network, in order to check the efficacy of the measures implemented in (a) and to optimise the strategy where appropriate (paragraphs 71 and 75).</p>	<p>Awaiting response</p>
<p>2            12/04/2012    26/2012</p> <p>Person trapped in train door at Jarrow station, Tyne &amp; Wear Metro</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is that the reliability of the door control circuits on the TWM trains is increased in order to minimise the risk of a similar malfunction to that which occurred in this incident.</p> <p>DB Regio Tyne and Wear should identify ways to improve the reliability of the door obstruction detection and traction interlock systems, including consideration of improvements in:</p> <p>I design of the control circuitry;</p> <p>I ingress protection of the microswitches;</p> <p>I switch cleaning method;</p> <p>I replacement procedures;</p> <p>and implement identified improvements (paragraph 72).</p>	<p>Awaiting response</p>

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<p>3            12/04/2012    26/2012</p> <p>Person trapped in train door at Jarrow station, Tyne &amp; Wear Metro</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is that the visibility of the platform/ train interface at stations on the TWM is as clear as reasonably practicable and consistent with the dispatch arrangements for each station.</p> <p>DB Regio Tyne and Wear should:</p> <p>a. review the visibility of trapped passengers from driving cabs at stations on its network, including consideration of how lighting, shadows at different times of the day, colour of passenger's clothing and train paint schemes may adversely affect that visibility; and</p> <p>b. implement identified improvements, to include consideration of realignment of platform mirrors and provision of additional CCTV monitors (paragraph 74).</p>	<p>Awaiting response</p>
<p>4            12/04/2012    26/2012</p> <p>Person trapped in train door at Jarrow station, Tyne &amp; Wear Metro</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is that the test method used for checking the door obstacle extraction forces is aligned with those specified in the relevant industry standards.</p> <p>DB Regio Tyne and Wear should change the test method it uses for checking compliance of its train doors against the obstacle extraction forces specified in Railway Group Standard GM/RT2473, so that it is also aligned with the requirements specified in BS EN 14752:2005 (paragraph 76).</p>	<p>Awaiting response</p>
<p>5            12/04/2012    26/2012</p> <p>Person trapped in train door at Jarrow station, Tyne &amp; Wear Metro</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is to clarify the test method used to measure the obstacle extraction force specified in Railway Group Standard GM/RT2473.</p> <p>RSSB should clarify the section in Railway Group Standard GM/RT2473 relating to the obstacle extraction force (section B6.3b) with respect to the geometry and material of the test obstacle and the direction of pull, and/or cross reference BS EN 14752 (paragraph 76).</p>	<p>Awaiting response</p>
<p>1            28/01/2012    27/2012</p> <p>Fatality at Johnson's Footpath Crossing near Bishop's Stortford, Herts</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is to identify reasonably practicable ways of improving the conspicuity of miniature stop light indications at pedestrian crossings, in order to reduce the potential for a level crossing user to be unaware of a red light. This is increasingly important where pedestrians may be distracted by personal music devices and smartphones.</p> <p>Network Rail should investigate ways to make cost-effective improvements to the conspicuity of visual warnings of</p>	<p>Awaiting response</p>

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	<p>approaching trains, taking account of the findings of relevant RSSB research projects. Such improvements might include moving existing miniature stop light indications to the near side of the railway, or the provision of 'back-to-back' or 'side-to-back' indications. The results of this investigation should be used to determine the optimum configurations for new installations, as well as the situations in which it would be reasonably practicable to enhance existing installations. If appropriate, Network Rail should then arrange for the Level Crossing Risk Management Toolkit to be updated accordingly (paragraph 74a).</p>	
<p>2            28/01/2012    27/2012</p> <p>Fatality at Johnson's Footpath Crossing near Bishop's Stortford, Herts</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is to prevent signage from obscuring approaching trains at crossings which are equipped with miniature stop lights, thus providing users with an additional warning of an approaching train.</p> <p>Network Rail should amend its guidance on risk mitigations to take account of possible improvements in the visibility of approaching trains at level crossings equipped with miniature stop lights, particularly where signage or other level crossing equipment may obscure the view of the line (paragraph 74a).</p>	<p>Awaiting response</p>
<p>3            28/01/2012    27/2012</p> <p>Fatality at Johnson's Footpath Crossing near Bishop's Stortford, Herts</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is to make a comprehensive set of risk reduction measures available to level crossing managers.</p> <p>Network Rail, in consultation with RSSB, should review the thirteen level crossing risk reduction options identified in RSSB research report T730, to determine whether or not each option should be included as a mitigation available to those responsible for managing the risk at level crossings (paragraph 75b). Network Rail should embed the findings of this review in its management of level crossing risks, and communicate these changes to all relevant staff. Guidance should be provided to the relevant staff on potential costs and benefits, as well as the specific circumstances in which each measure might be effective.</p>	<p>Awaiting response</p>
<p>1            04/09/2011    28/2012</p> <p>Ufton AHBC level crossing</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is to ensure that signallers can see appropriate information on the VDU screen when considering whether to remove reminders from signals and points using controls on IECC workstation VDUs. These include reminders on signals that are used to protect an automatic crossing under local control.</p> <p>Network Rail should identify, and provide a time bound plan to</p>	<p>Awaiting response</p>

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2      04/09/2011      28/2012 Ufton AHBC level crossing Status: Awaiting response	<p>eliminate, all IECC VDU controls which permit a signal or point reminder to be removed in situations where the signaller cannot see sufficient on-screen messages and indications to inform the decision whether to remove the reminder (paragraph 155).</p> <p>The intent of this recommendation is to provide an interface which reduces the likelihood of IECC signallers setting a route over an automatic half barrier level crossing under local control without advising the level crossing attendant and cautioning the train driver. The intent will be satisfied if a similar message is displayed in other crossing failure conditions and/or if the interface is provided within IECC software in a manner which provides a lower safety integrity level than required for some other signalling applications.</p> <p>In respect of automatic half barrier level crossings supervised from IECC installations, Network Rail should consider interfacing information about level crossing status with signal controls to reduce the risk of signallers permitting a train to pass over the crossing without applying the rules applicable to local control. Network Rail should include consideration of a warning or reminder which must be acknowledged on each occasion that a signaller attempts to set a route over a level crossing under local control. If found practical, Network Rail should modify standards and specifications to require this feature in future IECC upgrades and new installations (paragraph 158).</p>	Awaiting response
3      04/09/2011      28/2012 Ufton AHBC level crossing Status: Awaiting response	<p>The intent of this recommendation is to ensure that, when automatic half barrier level crossings are under local control, IECC displays provide conspicuous warnings compatible with Network Rail's IECC control and indication specification.</p> <p>Network Rail should review the local control indications displayed in respect of automatic half barrier level crossings on the Thames Valley Signalling Centre (TVSC) VDUs to identify any inconsistencies with the associated Network Rail specification requirements. If any of these inconsistencies have the potential to have a significant adverse effect on safety, Network Rail should amend the indications displayed at TVSC and/or the Network Rail IECC control and indication specification so that appropriately positioned conspicuous indications are displayed on all IECC VDUs (paragraph 156).</p>	Awaiting response

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<p>4            04/09/2011    28/2012</p> <p>Ufton AHBC level crossing</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is to ensure that the planned arrangements for setting up, alteration and handing back of possessions, and any planned signalling input to associated activities, does not cause an excessive workload for any signaller.</p> <p>Network Rail should examine and implement ways in which the workload of signallers can be kept within reasonable levels during engineering possessions, particularly those involving multiple changes to possession limits. This work should aim to avoid, where practical, situations in which signallers must delay engineering work or train services in order to avoid excessive workload (paragraphs 155 and 157).</p>	<p>Awaiting response</p>
<p>5            04/09/2011    28/2012</p> <p>Ufton AHBC level crossing</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is to assist incident investigation and competence management of signallers by recording, and facilitating playback of, all signallers' actions during their work at workstations included in future IECC projects.</p> <p>Network Rail should modify appropriate standards and specifications so that future IECC installations include a system to fully record signaller's actions. Information recorded should include:</p> <p>I reminder appliance override;</p> <p>I signaller's selection of VDU view; and</p> <p>I the view used when controls are operated using a VDU view.</p> <p>Where practical, the system should incorporate a playback feature (paragraph 158).</p>	<p>Awaiting response</p>
<p>6            04/09/2011    28/2012</p> <p>Ufton AHBC level crossing</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is to provide consistent and appropriate instructions to level crossing attendants about the positioning of red lamps and flags used when level crossings are under local control.</p> <p>Network Rail should review the existing requirements concerning the number of red flags or lights to be placed on each side of a level crossing under local control. Network Rail, if necessary in co-operation with the RSSB, should then take appropriate action to ensure that the correct, clear and consistent information is included in training, instructions and rules applicable to level crossing attendants (paragraph 158).</p>	<p>Awaiting response</p>

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<p>7            04/09/2011    28/2012</p> <p>Ufton AHBC level crossing</p> <p>Status: Awaiting response</p>	<p>The intent of this recommendation is to correct a misunderstanding among some engineering supervisors concerning the requirement for red lights or flags to be displayed at level crossings at all times when they are under local control unless the barriers are lowered.</p> <p>Network Rail should re-brief staff that level crossing attendants' red lamps/ flags must never be removed when level crossings are under local control and the barriers are raised or the gates are open (paragraph 158).</p>	<p>Awaiting response</p>

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