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9 June 2011

Ms Carolyn Griffiths
Chief Inspector of Rail Accidents
Rail Accident Investigation Branch
Block A 2nd Floor
Dukes Court
Dukes Street
Woking
GU21 5BH

Dear Carolyn

Collision at Exeter St David's station

I write to report¹ on the consideration given and the action taken in respect of the recommendation addressed to ORR in the above report published on 21 June 2010.

The annex to this letter provides details of the consideration given / action taken, in respect of the recommendation, by each train and freight operating company.

There are actions outstanding for c2c, Chiltern Railways, Cross Country Trains, East Coast Mainline, Hull Trains, Freightliner, GB Railfreight, National Express East Anglia, Southern, West Coast Railway and Colas. We expect to update you on these actions by 13 September 2011.

We consider the remaining operators to have implemented the recommendation² and do not propose to take any further action in respect of these, unless we become aware that any of the information is inaccurate, in which case we will write to you again³

Yours Sincerely

Chris O'Doherty

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

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

³ In accordance with Regulation 12(2)(c)



Initial consideration by ORR

The recommendation contained in the report was addressed to ORR when RAIB published the report on 21 June 2010

After considering the report and recommendation, on 14 July 2010, ORR directed the recommendation to all mainline TOCs and FOCs and asked them to consider and where appropriate act upon and advise ORR of its conclusions.

Details of the consideration given and any action taken, in respect of the recommendation is provided below.

Recommendation 1

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.

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.

Details of steps taken or being taken to implement the recommendation East Midlands Trains Ltd

In its response dated 1 September East Midlands Trains Ltd stated:

Risks associated with level crossings are identified by East Midlands Trains , both reactively and proactively. Reactively, this is as a result of a operating incident occurring which either results in a level crossing being breached (ie SPAD which the train either stops on or passes over a level crossing) or an incident occurring which would be a result of level crossing contamination. Proactively, East Midlands Trains have route “Champions”. The purpose of route “Champions” is primarily to identify risks not just with level crossings but anything that may import risk into our business. The risks should wherever possible be followed up and closed out by East Midlands Trains Driver Managers.

The following locations have been identified as areas of risk or potential risk:

Lincoln to Peterborough

<i>Sincil Bank (Lincoln)</i>	<i>Down</i>	<i>SL7815</i>	<i>Protects Sincil Bank CCTV, possibility of low adhesion dropping down to signal as there are trees on left hand side.</i>
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Lincoln to Cleethorpes Route

<i>Spa Street Crossing Area</i>	<i>Down</i>	<i>BL7849</i>	<i>Protects Pelham Junction</i>
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Annex A

Possible low adhesion before signal due to tall trees on your left before crossing the river.

Littlefield Lane/Friargate

CCTV Up N/A

Wheelslip experienced in this area during leaf fall season when braking for Grimsby Town between level crossings.

Habrough Station Up/Down N/A

Wheelslip experienced in leaf fall and bad weather due to contamination on level crossing. Contamination can occur from petrol tankers.

Lincoln to Nottingham

Boultham CCTV & Skew Bridge Down NL7945 & NL7949

Possibly low adhesion due to level crossings and trees/bushes in the area.

Lincoln to Nottingham Up/Down N/A

All stations have level crossings, drivers can experience low adhesion along the complete route in leaf fall season in both directions.

Littlefield Lane/Friargate

CCTV Up N/A

Wheelslip experienced in this area during leaf fall season when braking for Grimsby Town between level crossings.

Habrough Station Up/Down N/A

Wheelslip experienced in leaf fall and bad weather due to contamination on level crossing. Contamination can occur from petrol tankers.

Lincoln to Doncaster

Saxilby Down SY24

Possible low adhesion between Kesteven AHB and Saxilby stop signal SY24, SY24R before Kesteven AHB

York to Scarborough

Bootham Lane LC (CCTV) Up

High risk area during low adhesion

Derby to Leicester

<i>Spondon Level Crossing CCTV</i>	<i>Down</i>	<i>High risk area during leaf fall season.</i>
Derby to Crewe		
<i>Tutbury & Hatton LC (MCB)</i>	<i>Up/Down</i>	<i>High risk during leaf fall season</i>
<i>Blythe Bridge LC (CCTV)</i>	<i>Up/Down</i>	<i>High risk during leaf fall. Tree felling has taken place at this location however adhesion risk still exists</i>

Briefing Of Risks

East Midlands Trains use various methods to brief these risks to Drivers. The methods used include notice case briefs, safety briefs, face to face briefs and briefing through news letters to depots. The method used to brief is dependent on the incident that may have occurred and the level of risk involved.

Drivers that are learning new routes are briefed and assessed against these risks and other high risks associated with routes such as right hand signals, inconsistent braking distances, multi SPAD signals, complex signalling centres, areas of known or potential railhead adhesion, signals effected by sunlight etc.

Other face to face briefs take place following line closures for drivers of first trains over the routes such as following the Christmas period.

Route champions review routes on a quarterly basis. Any new risks would be communicated to drivers through the most appropriate means.

ORR Decision

ORR has considered the information that East Midlands Trains has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – Implemented

First ScotRail Ltd

In its response dated 1 September 2010 First Scotrail Ltd stated;

As a result of this incident and subsequent recommendation, First ScotRail has reviewed all route risk arrangements and has subsequently updated its Safety Manual procedures SOM 107 Route Knowledge for Traincrew and SOM 107A Line of Route Risk Assessment, to include criteria relative to Level

Crossings on approach to a station platform where contamination from road vehicles could effect rail adhesion. This recommendation was also discussed at the First Group Rail Division Operational Standards Development Group meeting that was held on 12 August 2010 and it was agreed at this meeting that all First Group companies would add a change to the route risk procedures by the inclusion of criteria relative to level crossings on approach to a station platform where contamination from road vehicles could affect rail adhesion.

ORR felt that the above response did not adequately demonstrate that First Scotrail fully understood the recommendation as it related solely to low adhesion conditions when entering stations.. ORR wrote to First Scotrail on 14 January 2011 asking for further clarification. First Scotrail responded on 25 February 2011 with the additional information below:

Further to our previous correspondence on the 1 September 2010, to respond to your letter of 14 January 2011 you ask that we confirm we have considered and addressed all hazards immediately beyond a level crossing such as high risk signal, permissive working and bay platforms, also to confirm we have highlighted the possibility of drivers encountering unexpected low adhesion conditions and the risk arising from wheel slide within route learning and briefing material.

As stated previously First ScotRail have updated our Safety Manual procedures SOM 107 Route Knowledge for Traincrew and SOM 107A Line of Route Risk Assessment to include criteria relative to Level Crossings on approach to a station platform where contamination from road vehicles could effect rail adhesion, to make this statement clearer the section concerned states "Road vehicle level crossing which has a station or signal which can display a stop aspect in its vicinity".

The term "Station" is used as a generic term for locations which could include permissive working facilities or bay platforms and as part of the assessment of risk the operations representative would consider the specific station layout, however to make this clearer we will further update SOM 107 Route Knowledge for Traincrew and SOM 107A Line of Route Risk Assessment to include the specific items to consider in relation to the term "Station" this will be completed by no later than 31st March 2011. The potential for Driver's to encounter unexpected low adhesion conditions and the risk arising from wheel slide is already a feature of Driver Training and Briefing material as such the potential for this to occur at road vehicle level crossings is considered in SOM 107 Route Knowledge for Traincrew which requires that identified route risks are trained and assessed.

To increase Driver awareness of this risk as part of our current update of the First Scotrail Train Braking Instructions (due to introduction of a new traction type) we will ensure the potential low adhesion risk at road vehicle level crossings is made more explicit. This will also be completed by no later than 31st March 2011.

ORR Decision

ORR has considered the response and the additional information that First ScotRail has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – Implemented

North Yorkshire Moors Railway Enterprise Ltd

In its response dated 21 July 2010 North Yorkshire Moors Railway Enterprise Ltd stated;

The recommendation is only partially relevant to the North Yorkshire Moors Railway and is not relevant to the operations governed by the Railway Safety Certificate and Licence for the following reasons:

- *The North Yorkshire Moors Railway certificated operation is restricted to the route between Whitby and Battersby in the county of North Yorkshire. At no point on this route are similar Infrastructure conditions to those at Exeter St Davids found. There are no level crossings on the immediate approach to any of the stations where another train might be stationary, nor to bay platforms nor on the immediate approach to junctions or high risk signals;*
- *The North Yorkshire Moors Railway operates locomotive hauled trains using steam and heritage diesel locomotives on the certificated route. All traction units are equipped with sanding and all vehicles are clasp braked. The North Yorkshire Moors Railway does not operate class 142 or similar two axle lightweight diesel rail cars or multiple unit vehicles fitted with disc brake;*
- *North Yorkshire Moors Railway Drivers operating over this route are trained and assessed to understand the risks identified and associated with this route.*

On the Heritage operation between Pickering and Grosmont only one location has been identified which has a remotely similar configuration to Exeter St Davids Red Cow crossing. This is the approach to Grosmont station from the South. Permissive passenger working is authorised into platform 2, but the authority is rarely used. Locomotives are attached to empty carriages and passenger trains in platform 2 on a regular basis under well used and well understood station yard working arrangements. These movements cross the road at a level crossing at the immediate approach to Grosmont station.

Drivers are fully trained and assessed on the risks associated with the working throughout the route between Pickering and Grosmont including the attaching of locomotives to trains at Grosmont. There have been no recorded instances of locomotive 'picking up their wheels' when attaching to a train at Grosmont, in a variety of weather conditions. A reminder has however been posted to drivers, and copies of the RAIB report have been circulated.

ORR Decision

ORR has considered the information that North Yorkshire Moors Railways has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – Implemented

West Coast Trains Ltd (Virgin Trains)

In its response dated 23 July 2010 West Coast Trains Ltd stated;

Having reviewed the 127 level crossings which West Coast Trains services operate over, we have identified two which match the criteria outlined in Recommendation 1 of the RAIB report. These are as follows:

1) Logan's Road LC (CCTV) Motherwell

This level crossing has a potential issue when approached in the up direction only. This crossing is located around ½ mile north of Motherwell station.

The risk posed by Lesmahagow Jn which runs across the WCML from Coatbridge to Hamilton Central (speed 15 mph), Logans Road LC lies 200m on the approach to M398 signal which protects Lesmahagow Jn, the junction being a further 150m beyond M398. Should a train be required to stop at M398 and experience poor adhesion from the crossing forward, there is a potential to pass at Danger signal M398 and reach the junction itself. The total distance from crossing to conflict point is around 350m.

The station itself does not present a risk as West Coast Trains do not carry out permissive working at this location

2) Parrot's LC (UWC)

As known as 'Ruttermac Farm', this level crossing is located on the line between Stone and and Norton Bridge Jn is a risk in Up direction.

The crossing is around 100m on the approach to NS5 (formerly identified as NB5) Around 250 metres beyond this signal is the Up Fast line of the WCML (speed 90 mph). A train experiencing adhesion issues approaching this signal and passing it at danger could cause a conflict at Norton Bridge Jn, a further 250m beyond the signal. The line speed on the approach is 75 mph, dropping to 30mph, just before the junction.

The distance from the crossing to the conflict point is around 350m.

It should be noted that if a West Coast Trains service was being stopped at either of the signals associated with the level crossings, as part of a normal signalling sequence, the train should be travelling no more than 20 mph as it

passes either crossing in order to comply with Virgin Trains Professional Driving Policy.

West Coast Trains Actions in response to Recommendation1

Virgin trains undertake to carry out the following actions to address the content of the recommendation:

1) Route Risk Assessments and Briefing materials

Highlight within the route risk assessments and route learning and briefing materials associated with Logans Road LC and Parrots Crossing LC, of the possibility of drivers encountering unexpected low adhesion conditions at that crossing and the risk arising from wheelslide.

Target for completion 31 August 2010

2) National Driver awareness of Level Crossing Adhesion Issues

Include in the Autumn 2010 Safety Brief, delivered between August and October 2010, a national briefing item to all drivers on the risks of rail head contamination associated with level crossings using the Exeter St Davids incident as a case study.

Target for completion 31 October 2010

3) Local Driver awareness of specific risks associated with Identified Level Crossings

Include in the Autumn 2010 Safety Brief, delivered between August and October 2010, a local briefing item to drivers who operate over routes which include Logans Road LC and Parrots Crossing LC, outlining the specific risks of rail head contamination associated with these level crossings

Target for Completion 31 October 2010.

West Coast Trains believes the actions outlined will alert drivers to the possibility of low adhesions conditions in the vicinity of level crossings located in close proximity to other hazard and will address the purpose of Recommendation 1 as detailed in the RAIB report

ORR wrote to West Coast trains on the 14 January 2011 asking for confirmation that it had carried out its planned actions. West Coast Trains provided this confirmation on 14 January 2011.

ORR Decision

ORR has considered the information that West Coast Trains has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – Implemented

Grand Central Rail

In its response dated 17 September Grand Central Rail reported;

As this accident involved a type of train which is quite different to those operated by Grand Central, a class 142 DMU, means the risk of adhesion induced sliding is less for its trains. Grand Centrals actions have therefore consisted of:

- *The Safety and Standards Manager wrote to each of its driver managers highlighting the recommendation, putting it into perspective for the Grand Central operation and asking them to review their respective areas of responsibility accordingly. Two possible areas of concern have been identified:*
 - 1) *Church Street crossing on the approach to Hartlepool Station.*
Although no problems have been reported in this area, this may be due to the following;
 - *Maximum speed on approach to the crossing and through the station is 20mph;*
 - *The Grand Central train is booked to stop at Hartlepool station*
 - *The station is on a steady incline*
 - *The next signal after the crossing is approximately 150m beyond the station*
 - 2) *East Boldon Crossing on the approach to East Boldon Station*
This area is renowned for low rail adhesion however the following need to be taken into account for Grand Central Services;
 - *Grand Central trains do not stop at East Boldon station*
 - *East Boldon station is set on a long straight section of the line giving good visibility to the driver*
 - *Grand Central Trains follow Metro trains on this section of line, therefore line speed is reduced.*
- *The Safety and Standards Manager has issued the Grand Central Drivers Autumn Adhesion awareness briefing for 2010 and has included a reference to the Exeter St Davids collision within this.*

ORR Decision

ORR has considered the information that Grand Central Trains has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – *Implemented*

Arriva Trains Wales Ltd (ATW)

In its response dated 16 August 2010 Arriva Trains Wales Ltd stated;

ATW is reviewing its current (train driver) route risk assessments to ensure that they incorporate and highlight locations where the hazard, noted in Recommendation 1, exist. This task will be completed by 30 September 2010. Any identified changes to the (train driver) route risk assessments, as a result of the review, will be highlighted in route learning and briefing material that is made available to ATW drivers. This task will be completed by 30 September 2010. All ATW drivers will be briefed on any identified changes to the above documents. This task will be completed by 31 October 2010.

ORR wrote to Arriva Trains Wales on the 17 February 2011 asking for confirmation that it had carried out its planned actions. Arriva Trains Wales provided this confirmation on 4 March 2011.

ORR Decision

ORR has considered the information that Arriva Trains Wales has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – Implemented

c2c Rail Ltd

In its response dated 19 July 2010 c2c Rail Ltd stated;

The c2c route risk assessment includes all locations where hazards exist immediately beyond a level crossing, the information from the route risk assessment is included within the route guide which is issued and briefed to all drivers. When any changes are identified to the route risk assessment, the route guide is revised and briefed to drivers.

ORR did not consider that the response fully addressed the recommendation, we wrote to c2c on 14 January requesting confirmation that the c2c route guide specifically addresses the possibility of low adhesion and the risk of wheel slide at the identified locations where hazards (high risk signals, bay platforms or stations with permissive working) exist immediately beyond a level crossing. The response received on 19 January is below:

I can confirm that the c2c Driver Route Information Guide (c2c SM20.11) does identify on the route diagrams all areas where low adhesion and the risk of wheel slide have been identified. The guide shows the start and end of all

sections on each running line, where there is a risk of low adhesion or wheel slide.

ORR Decision

ORR has considered the information that c2c has provided and concluded that the response is too general on the adhesion risk and does not take into account the activities on level crossings that can produce adhesion risk.

Status – In progress, ORR will provide a further update to RAIB by 13 September 2011

Chiltern Railways Co Ltd

In its response dated 9 August 2010 Chiltern Railways stated its,

Route risk assessment and route learning/briefing material would be reviewed and any changes required, if any, would be discussed at its Operational Safety and Standards group meeting on 26 August 2010.

In a further response dated 10 September 2010 Chiltern Railways confirmed it has;

reviewed its route learning/briefing material in line with Recommendation 1 and concluded that a few minor amendments are required. Chiltern Railways also advised it is currently in the process of updating all its route maps and briefing material in readiness for the infrastructure changes resulting from project Evergreen 3 and it would ensure the amendments referred to above will be included in the updating process.

ORR noted the intention to update all route maps and briefing materials however there was no indication of when this was to be complete other than being ready for the infrastructure changes resulting from project Evergreen. We wrote to Chiltern on 14 January 2011 asking for reasoning as to why it did not propose to update briefing material for existing infrastructure and also a date for when you expect the briefing material to be updated. The response, received on 23 February 2011, is below:

The reason for delaying the briefing until the route maps had been updated to include EG3, is due to the fact that the route changes significantly after the May 2011 EG3 commissioning, however you will no doubt be aware that the introduction of the new Mainline timetable has now been delayed until September 2011.

With this in mind, it is my intention to include in the next round of Driver Safety days, a brief on the one area of risk on our infrastructure, this being the level crossing at the south end of Cradley Heath. The next round of Safety Briefs commences in March 2011.

ORR Decision

ORR considered that confirmation of when the stated briefings would be completed was necessary, we wrote to Chiltern on 21 April asking for this information.

Status – In progress. ORR will provide further information to RAIB by 13 September 2011.

Cross Country Trains Ltd

In its response dated 9 September 2010 Cross Country Trains Ltd stated;

It is reviewing risk assessments and route knowledge data bases. It is already focused on adhesion hotspots and briefs drivers on risk associated with wheel slide. The above steps are incorporated in the driver brief due to be completed in October and will have route risk assessment amendments (where necessary) in place by December 2010.

ORR noted the response from XC Trains Ltd and the review of risk assessments and route knowledge databases but felt the response did not specifically address locations where hazards exist immediately beyond level crossings.

The additional information below was provided by Cross Country Trains on 23 March 2011

Cross Country Trains can confirm it has reviewed the routes and circumstances that are applicable and can confirm that both our Operations Standards Manager and our Driver Standards Manager have completed this review, we have not encountered or identified similar locations giving rise to the risk – we have however briefed in accordance with the headline risk. Our records and training material/route risk assessments going forward have all been amended.

ORR Decision

Having considered the additional information provided by Cross Country Trains, ORR accepts that a review has been undertaken however clarification is needed on the identification of locations as expressed in the recommendation rather than 'similar locations' as stated in the response.

Status – In progress ORR will provide an update to RAIB by 13 September 2011.

DB Schenker Rail (UK) Ltd

In its response dated 16 July 2010 DB Schenker Rail (UK) Ltd stated;

Section 4.3 DBS/OS/001 which refers to route learning and route risk assessment would be amended to reflect the possibility of low adhesion conditions after passing over level crossings that have or could become affected by road treatment or other contamination. The amendment will be made as soon as possible.

ORR wrote to DB Schenker on 20 April 2011 requesting confirmation that the proposed amendment has been completed and it specifically refers to locations where hazards exist immediately beyond a level crossing such as

high risk signals, bay platforms or stations with permissive working' as stated in the recommendation. DB Schenker provided this confirmation on 20 April 2011.

ORR Decision

ORR has considered the information that DB Schenker Ltd has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – *Implemented*

Direct Rail Services Ltd (DRS)

In its response dated 23 July 2010 DRS stated;

FP 0409 01 Train Dispatch Risk assessment has been amended to include specific consideration of crossing risk adjacent to stopping points which is used for every charter train operated by DRS.

ORR wrote to DRS on 11 January 2011 explaining that DRS needed to consider the range of hazards RAIB specifically listed in the recommendation and the need to draw these to the attention of its drivers.

ORR confirmed that DRS had satisfactorily acted upon the recommendation by the Regional Operations Manager during an ORR site inspection at Grangemouth on 17 February 2011 and again subsequently at a site meeting in Crewe with the Regional Operations Manager on 22 February 2011.

ORR Decision

ORR has considered the information that DRS has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – *Implemented*

East Coast Mainline Ltd

In its response dated 2 September 2010 East Coast Mainline Ltd stated it;

views the risk of low adhesion at level crossings as a generic rather than a specific route risk (the risk of low adhesion applies at all level crossings). Based on the outcome of the investigation into The Exeter St Davids collision, East Coast has reviewed and where necessary enhanced the training and briefing it provides, to train drivers, on the risks of low adhesion associated with crossings. As far as route risk assessment is concerned, high risk signals etc are already identified and if there are risks of low adhesion on the approach to such a signal or other stopping point, then that would be included in the risk assessment and briefed accordingly. This would include risks of low adhesion posed by level crossings. East Coast has recently commenced a detailed review of its Route Risk assessments and will ensure that the risk from level crossings will be reviewed as part of this programme. Because of the extent of East Coast routes, the thoroughness of the four stage route assessment process now used by East Coast and the comprehensive driver briefs generated from this, the review is not expected to be completed until March 2011.

ORR wrote to East Coast Mainline on 28 March 2011 requesting confirmation that it had carried out its planned actions.

Status – In progress. ORR will provide further information to RAIB by 13 September 2011.

First Capital Connect

In its response dated 31 August 2010 First Capital Connect stated;

First Capital Connect have been undertaking an extensive review of all its level crossings using the risk criteria in the recommendation. This review was scheduled for completion with a briefing being issued to all drivers on 4 September. First Capital Connect have also amended the route risk assessments standard criteria to include risks beyond level crossings such as bay platforms, signals and permissive working. All route risk assessments are being reviewed to take this into account.

ORR wrote to First Capital Connect on the 14 January 2011 asking for confirmation that it had carried out its planned actions, First Capital Connect provided confirmation on 12 February 2011.

ORR Decision

ORR has considered the information that First Capital Connect has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – Implemented

First Great Western Ltd (FGW)

In its response dated 6 September 2010 First Greater Western Ltd stated;

FGW have identified the locations where hazards exist immediately beyond a level crossing. The route risk assessment template has been modified to include questions that address level crossing related poor rail adhesion risks. FGW are currently undergoing a routine review of the FGW suite of route risk assessments and as part of this review the assessments will be modified to reflect the new template. This workstream is scheduled for completion by the 31 October 2010. Any new risks identified as part of this review will be mitigated by alterations to the appropriate route training package and route risk briefing. FGW Autumn preparedness already includes driver briefing and these will include reference to the RAIB recommendation and rail adhesion risks that may occur after passing over a level crossing. This will be completed by 1 October 2010

ORR wrote to First Great Western on the 14 January 2011 asking for confirmation that it had carried out its planned actions. First Great Western provided this confirmation on 12 February 2011.

ORR Decision

ORR has considered the information that First Great Western has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – Implemented

Hull Trains Co Ltd

In its response dated 15 October 2010 Hull Trains Co Ltd stated;

Hull Trains stop at Howden Station which is a station located either side of a level crossing. Howden station is already identified in the Operational Route Risk Assessments and driving assessment standard. The current safety brief is reminding drivers of the hazard of low adhesion conditions in the vicinity of level crossings.

ORR considered that the response did not fully address the recommendation and wrote to Hull Trains on 14 January asking for confirmation that Howden Station is the only identified location where hazards exist immediately beyond

a level crossing and provide an explanation as to why Howden station (i.e bay platform, permissive working) is regarded as high risk . The response received on 14 January is below:

As confirmed previously Howden station is the only station to which First Hull Trains call at where there could be a similar occurrence to the incident. Due to the proximity of the crossing to the platform(s) drivers are reminded of the potential of low adhesion at the crossing which may be caused by other factors such as rail head contamination and the need to report such incidents immediately to Operational Control.

ORR Decision

ORR has considered the additional information information that Hull Trains has provided and concluded that we still require confirmation that it has addressed high risk signals.

Status – In progress. ORR will provide an update to RAIB by 13 September 2011.

First Keolis Holdings Ltd (Transpennine Express(TPE))

In its response dated 1 September 2010 First Transpennine Express stated;

TPE has amended its Operation Manual Procedure OM 2.6 to reflect the requirements of the recommendation in full. TPE is currently re working all its route risk assessments on a route by route basis, this project is being facilitated by the TPE Standards Manager Operations and whilst some work is complete, full completion will be achieved by the end of October 2010. All route risk assessments will feature in route learning and will be briefed to drivers in the face to face briefing process, this work is ongoing and will continue as each route risk assessment is complete.

ORR considered more information was needed and wrote to TPE on 14 January 2011 requesting confirmation that it has updated its route risk assessments and briefed the changes out to its drivers and provide a timescale when you expect the work to be complete. The response received on 14 January is below:

TPE have reviewed all the recommendation in the report and encompassed them into their Operations Standard OM2.6, this change has brought about a full review their route risk assessments and briefed to drivers in a face to face briefing process. I can confirm it does address high risk signals, bay platforms, permissive working etc.

ORR Decision

ORR has considered the information that First Transpennine Express has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – Implemented

Freightliner Ltd

In its response dated 6 September Freightliner Ltd stated;

The recommendation was accepted by Freightliner and in order to alert its train drivers to the possibility of low adhesion conditions in the vicinity of level crossings (located in close proximity to other hazards) the issue is to be included in its new 'Four Seasons' document which is to be issued to all train drivers in a book format (this publication is due to go to the printers very shortly and is hoped to be distributed to drivers by the end of October). The content has formed part of current and planned safety briefs to drivers. This will highlight risks and considerations for train drivers specific to certain times of the year. It is also to be included on the new cycle of the regular safety briefs which all drivers receive. The Senior Driver Standards manager has added the subject to the agenda for the next meeting of the driver standards managers where they will be told to add this as a consideration to their depots Route Risk Assessments

ORR felt it was not sufficient for Freightliner to simply to refer to low adhesion precautions at level crossings. We wrote to Freightliner on 11 January 2011 explaining the need to consider the range of hazards RAIB have specifically listed in the recommendation. In particular to review its passenger operations (charters etc) where permissive working etc may apply and demonstrate that they have considered where they need to draw their attention to drivers. The response below was received on 14 January 2011.

With regards to the points mentioned,

- 1/ We do not work Passenger Trains.*
- 2/ We do not work Charters.*
- 3/ We do not work into bay platforms.*

In respect to Permissive working, any Driver who is route learning will be briefed on the route and the risks for that route. They will also use their Sectional appendix in relation to locations that are worked under permissive working.

I will send out an E/Mail to the other Depots regarding this issue and again I will raise this issue at my next Managers meeting in February. I will also put Permissive working on our next safety briefing.

ORR Decision

ORR has considered the information that Freightliner has provided and verified the above actions had been completed at a meeting with Freightliner on 7 February 2011 but concluded that it has not addressed the purpose of the recommendation.

Status – In progress. ORR will provide a further update to RAIB by 13 September 2011.

GB Railfreight Ltd (GBRf)

In its response dated 31 August 2010 GB Railfreight Ltd stated;

The report had been reviewed and the recommendations made are not applicable to GBRf as it does not operate this type of traction, therefore this is a nil return.

In a further response received on 4 January 2011 GBRf confirmed:

It has made amendments to GBRf's Guide to Operations Managers on the undertaking of route risk assessments which now highlights the need to consider specific risks associated with approaching high risk situations (e.g. level crossings and locations where permissive working is in operation) as part of the route risk assessment process.

The Guide is about to be issued to GBRf's operations managers and this will be supported by the appropriate management brief.

ORR Decision

ORR has considered the information that GBRf has provided and concluded that, it does not address the purpose of the recommendation.

Status – In progress. ORR will provide an update to RAIB by 13 September 2011.

Heathrow Express

In its response dated 23 September 2010 stated;

Heathrow Express has reviewed the recommendation and determined that it is not applicable to its operations as there are no level crossings on the line of route over which Heathrow Express and Heathrow Connect services travel. Heathrow Express and Heathrow Connect are therefore not taking any further action in respect of this recommendation.

ORR Decision

ORR has considered the information that Heathrow Express has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

- has taken the recommendation into consideration;

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

Status – Implemented

London & Birmingham Railway Ltd (London Midland)

In its response dated 31 August 2010 London Midland stated;

The report and recommendation were considered by its Recommendation Review Group (RRG) on 29 July 2010. RRG endorsed the Recommendation, and tasked the Operations Standards Manager with identifying locations where the hazards described in the recommendation may be present, updating route risk assessments, learning and briefing materials as appropriate, and preparing a brief to drivers to raise their awareness of the hazards and the risk arising from wheel slide. The target completion date for that work was 30 September 2010.

ORR wrote to London Midland on the 14 January 2011 requesting confirmation that it had carried out its planned actions. London Midland provided this confirmation on 25 February 2011.

ORR Decision

ORR has considered the information that London Midland has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – Implemented

London Overground Operations Ltd (LOROL)

In its response dated 26 August 2010 London Overground Operations Ltd stated;

There are only two level crossings in total on the network served by LOROLs trains and only one level crossing with a station immediately beyond the level crossing – at Acton Central. However, the platform is a through platform and permissive working is not allowed so the risk associated with the hazard is low. Nevertheless the briefing material which is being produced for drivers for the autumn season will include information on the possibility of drivers encountering unexpected low adhesion conditions at that location. The briefing cycle begins on 6 September and will be concluded by the end of November 2010. LOROL is also currently revising the procedure for carrying out route risk assessments to include the lessons learned from the Exeter St Davids accident. The procedure should have been updated, approved and authorised by Managing Director by the end of September 2010.

ORR wrote to LOROL on the 14 January 2011 requesting confirmation that it had carried out its planned actions, on 4 March 2011 LOROL confirmed:

the briefing has been completed. The North London Line which is the only route over which LOROL operates which includes level crossings has been significantly upgraded under the North London Route Improvement Project (NLRIP) which was completed at the end of February 2011. As a result a major exercise to revise route risk assessments for that route is currently underway. The decision was taken in late October 2010 to delay the re-issue of LOROL's route risk assessment procedure until this exercise is completed. However I can confirm that the lessons of the Exeter St David's RAIB report will be included in the route risk assessment for Acton Central and will be applied in the subsequent revision to the procedure which is due for completion in the summer.

ORR Decision

ORR has considered the information that LOROL has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – Implemented

Merseyrail Electrics

In its response dated 2 September Mersey Rail Electrics stated;

Following a review of the Merseyrail Electrics network train operations to recommendation 1 from the RAIB investigation report into train collision at St Davids station on 4 January 2010, Merseyrail Electrics do not believe that the recommendation is applicable due to a number of factors. Throughout the network whilst there are a small number of level crossings (14), analysis of the current route risk assessments indicates no hazards immediately beyond these locations. Permissive working on the Merseyrail Electrics Network is limited to terminal end locations and the nearest level crossing in the vicinity of such locations is at a distance in excess of ¼ of a mile. In order to mitigate the risk associated with low rail head adhesion Merseyrail Electrics have a number of control measures including:

- *Driver Competence Management Systems (including professional driving policy, route risk assessments, driver briefing)*
- *Exceptional railhead procedure (TW1, section 17)*
- *Bespoke location instructions to provide advice to drivers of poor railhead conditions*
- *Manual and automatic sanders fitted to all ME fleet.*

Merseyrail Electrics has confirmed it actively monitors and manages the risks associated with low railhead adhesion as part of its risk control process.

ORR has considered the information that Merseyrail Electrics has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – Implemented

National Express East Anglia (NXEA)

In its response dated 6 September 2010 National Express East Anglia stated;

The NXEA route risk assessment process includes all locations immediately beyond a level crossing where hazards exist, including high risk signals, bay platforms and stations with permissive working. Once a higher risk scenario has been determined this is included in the Route Atlas and the route specific guide which is briefed to drivers. The route risk assessments are kept under review and any changes are incorporated into the Route Atlas and the route guides, and then communicated to its drivers.

ORR noted that the response gave no reference to low adhesion risk, we wrote to NXEA on 14 January 2011 asking it to confirm that its route risk assessment, Route Atlas and route specific guide addresses the possibility of drivers encountering unexpected low adhesion conditions and the risk arising from wheel slide in the vicinity of level crossings. On 7 March 2011 NXEA confirmed:

NXEA has this covered in our Safety Management Procedures section 4 of the Safety Manual 4.8 Risk Assessments for Route Knowledge standard, there are references to low adhesion in sections: -

8.1.6 Lineside signage; location and meaning of lineside signs, e.g. countdown markers, fire zone, area of poor rail head conditions etc.

8.1.8 Level crossings; the location of level crossings, including any relevant speed restrictions and special working arrangements.

9.1.20 Areas listed where known low rail head adhesions conditions can exist.

Reference is also made in Appendix SM4.8/B, this is an essential element risk which is detailed below.

- *Exceptional low adhesion areas, known low adhesion areas and other locations affected by seasonal or climatic factors.*

ORR Decision

Having reviewed the additional information ORR considers that NXEA have not confirmed that its route specific risk assessments have been updated. ORR wrote to NXEA on 21 April requesting this confirmation.

Status – *In progress*. ORR will provide further information to RAIB by 13 September 2011.

Northern Rail Ltd

In its response dated 3 August 2010 Northern Rail Ltd stated;

Northern Rail already has specific questions in its Line of Route Risk Assessment procedure relevant to high risk signals and other locations, requiring potential hazards to be identified and recorded, but confirmed it will amend this procedure to add specific reference to level crossings to take into account the risk from materials deposited on the road and carried onto the track. This will then be considered in a review of all Line of Route Risk Assessments which is expected to be concluded by January 2011.

Having reviewed its incident records, in recent years there are only two identified locations where incidents of low adhesion related to crossings have been reported – Connonley and Retford. Northern Rail has inserted a paragraph on the risk of track contaminants being carried over from crossings into its Professional Drivers Policy (PDP), which has just been reviewed and is currently being printed. We expect to have issued this revised PDP by end of September 2010.

Northern Rail will include an article on this incident and the risk of track contaminants being carried over from crossings in the next issue of our Driver briefing magazine, CAB, to raise driver awareness in advance of the coming Autumn period. This will be published by early October 2010.

ORR wrote to Northern Rail on 14 January 2011 requesting confirmation that its planned actions had been completed. Northern Rail provided this confirmation on 28 January 2011.

ORR Decision

ORR has considered the information that Northern Rail has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – *Implemented*

Stagecoach South Western Trains Ltd (SWT)

In its response dated 30 July 2010 South Western Trains Ltd stated;

The SWT Professional Driving Policy has been revised to enhance instructions to drivers about the possibility of encountering low adhesion conditions when entering station platforms. This was issued in May 2010. The SWT Head of Operational Standards has devised an autumn brief, which will be issued to all drivers on a personal basis. This brief specifically highlights the danger of contamination at level crossings on the approach to station platforms. These will be issued w/c September 2010. The current safety briefing material for SWT drivers also highlights the dangers of level crossing contamination. This will begin 15 August 2010. SWT route learning material for drivers is being revised and updated to include warnings for level crossing contamination where necessary. This work has started, and is due for completion by November 2010.

ORR considered that the response did not fully address the recommendation as it only related to low adhesion conditions when entering station platforms. We wrote to South Western Trains on 14 January requesting confirmation that it had considered other hazards beyond level crossings such as high risk signals. The response below was received from SWT on 22 February 2011:

We think we already have some of this covered within our Driving Policy in several sections as well as our Autumn brief but as you state it does not cover all the issues. With this in mind we have made sure all our drivers are aware of the possibility of low adhesion at level crossings at any time of the year and specifically where there are bay platforms, high risk signals and permissive working. The autumn safety brief made special reference to level crossings. We are also working on revising our route risk assessments and route maps further following these comments.

ORR Decision

ORR has considered the information that South Western Trains has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – Implemented

London and Southeastern Railway Ltd

In its response dated 2 August 2010 London and Southeastern Railway Ltd stated;

Southeastern Railway has appointed an Operational Standard Specialist to carry out a full review of its Driver Route Book with the purpose being to identify locations beyond crossings that could be considered as being an area of high risk from contamination and where in its opinion advance warning in route assessments and route training materials would be advantageous to the driver. The review will take in locations of both public and farm crossings which once completed will require a revised version of the Driver Route Book to be made available to all drivers. Drivers will be advised of the changes to this publication and will be directed to the Southeastern document library where they will be able to access or download relevant information. The timescale for re-issue of the Driver Route Book is to coincide with the start of the leaf fall season 2 September 2010.

ORR wrote to London and South Eastern Railway on 14 January 2011 requesting confirmation that its planned actions had been completed. London and Southeastern Railway provided this confirmation on 14 January 2011.

ORR Decision

ORR has considered the information that London and Southeastern Railway has provided and concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it:

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

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

Status – *Implemented*

Southern Railway Ltd

In its response dated 16 July 2010 Southern Railway Ltd stated;

Information on this accident and suitable advice as contained in the recommendation will be included in our September drivers brief. In addition Southern have included this advice in its autumn seasonal plan and training such that all its drivers will be notified of this.

ORR wrote to Southern Railway Ltd on 14 January 2011 requesting confirmation that it has specifically addressed the issues stated in the recommendation.

In a further response provided on 25 February Southern Railway confirmed it is:

currently reviewing all its route risk packs as a result of a number of significant infrastructure changes and also in light of the recommendation. These route packs will be issued and briefed to all our drivers as part of the normal autumn briefing process which will start in August this year.

ORR Decision

ORR has reviewed the information that Southern Railway has provided but does not consider that evidence has been provided to confirm that Southern has taken steps to brief its drivers, we also note it does not expect to do so until August 2011. We wrote to Southern on 21 April 2011 requesting details of when the briefing process will be completed.

Status – In progress – ORR will provide further information to RAIB by 13 September 2011.

West Coast Railway Company Ltd

In its response dated 31 August 2010 West Coast Railway Company Ltd stated;

West Coast Railways will be including the lessons learned from the Exeter St Davids collision in its next Safety Brief to Drivers to ensure that all drivers are aware of the risks and can take mitigating action. The problem is not so likely to affect WCR type services, due to the number and type of vehicles it operates.

ORR wrote to West Coast Railway on 14 January 2011 requesting confirmation that it has reviewed its route risk assessments and subsequently highlighted the possibility of drivers encountering unexpected low adhesion conditions which exist immediately beyond a level crossing. The response below was received on 24 February 2011.

West Coast Railways operates Charter trains over the entire NR network. To review all of the areas, which may contain risks as outlined in the Exeter report will take some months to achieve, given the size of the company, and the resources available. WCR considered the importance of the lessons learned such that a more immediate action was required.

The WCR safety brief system works as follows: -

- a) Items are identified by the operations management team from, incident, which have occurred, and near misses identified, and any issues raised by other bodies (ORR / RAIB / NR / RSSB or other TOC/FOC's). Also any issues raised by staff, either by suggested subject, or raised as issues.*
- b) A Safety Brief document in the form of a newsletter is given to each member of staff to study.*
- c) All staff attend a Safety Brief, where the contents of the Briefing document are discussed in detail, including background circumstances, causes, and mitigations. A senior member of the operations management team conducts these briefings.*

The contents of the Exeter report are part of the current briefing cycle, which is at present, in progress. Drivers are being made well aware of the factors regarding adhesion problems over Road Level Crossings, which are actually well understood by our Drivers (particularly steam Drivers, where poor adhesion on level crossings is already a factor for consideration). We are

highlighting the risk surrounding risks at permissive platforms & lines, and dead end bay lines etc, where the consequence of a 'fail to stop' would be especially significant.

There are two mitigating factors that should be taken into account due to the almost unique type of operations run by WCR.

- 1) *Our trains are more akin to traditional types of train, where train formations change on a job-by-job basis. That means that Drivers drive each particular train on it's own performance. One of the root causes of Exeter type incidents is that most TOC Drivers drive the same type and formation of train everyday, and the expectation by some is that a train will behave in the same way on every occasion. One area that has been identified as a significant risk to WCR operations in an incident of poor adhesion such as Exeter, is that a light locomotive would be at higher risk than say a 12 coach train. This is being highlighted as part of the briefing process.*
- 2) *The profile of WCR Drivers is different to any other company. Our Drivers are almost 'hand picked', based on personal recommendation. Our Drivers tend to have retired from other TOC's, and the vast majority are what you might term 'Driver +'. Many of our staff are former Driver Instructors, Inspectors, and Traincrew Managers, who will have experience in identifying risks at specific locations.*

WCR will continue to update route risk assessment information as quickly as is reasonable. In the meantime we consider that identifying the cause and effect of the Exeter incident to our staff will reduce the risk significantly.

ORR Decision

ORR has considered the information that Weat Coast Railways has provided but clarification that it has highlighted high risk signals as well as '*risks at permissive platforms & lines, and dead end bay lines*' is required.

Status – In progress ORR to provide an update to RAIB by 13 september 2011.

Wrexham Shropshire and Marylebone Railway Co Ltd

In its response dated 1 September 2010 Wrexham, Shropshire and Marylebone Railway Co Ltd stated it has;

- *amended its line of route risk assessment to reflect hazard identification of 'low adhesion conditions in the close proximity to other hazards;*
- *that its line of route risk assessments are being updated accordingly;*
- *that its line of route maps will be updated to reflect the revisions to the risk assessments.*

- *Key outputs from the above will be included in our autumnal briefing program.*

ORR Decision

Wrexham Shropshire and Marylebone Railway Co Ltd has ceased trading.
No further action.

Colas Rail

In its response dated 29 November 2010 Colas Rail stated:

Colas Rail operated the Multi Purpose Vehicles (MPVs) on behalf of Network Rail on the Southern territories from the vehicles entering operation through to 2009 for the railhead treatment contract and is therefore well acquainted with the hazards of contaminated railheads and the consequences of not treating rails in adverse winter weather conditions.

With regard to the incident at Exeter St. David's, Colas Rail will issue all its train drivers with a bulletin on the incident and steps to take to prevent a recurrence on Colas Rail contracts. Bulletins are forwarded to driver along with their weekly notices so no delay is typically incurred in drivers receiving these notices. In the event of an urgent operating notice having to be issued, a system has been created whereby all drivers are sent a text message thereby eliminating any delays in the receipt of these messages.

The Colas Rail Professional Driving Policy for drivers includes leaf fall and winter driving techniques; the policy includes such issues as:

- *low adhesion*
- *brakes and braking techniques*
- *Reporting of rail head conditions*

The previous three operating notices sent to drivers concerning low adhesion issues were dated July 2009, October 2009 and November 2009 with instructions to adhere to the company's driving policy reiterating the points set out above.

In addition, a new Colas Rail Control Room operating procedure has been written (OCC-034 "Leaf Fall Operating Advice") which allows for weather reports concerning the predicted condition of high risk weather and low adhesion forecasts to be forwarded to our train drivers. The Control Room operations team log on to the leaf fall prediction web site at 05.00 every morning and where there exists the possibility of low railhead adhesion then drivers are informed of the low adhesion areas when they book on for undertaking rail vehicle movements. The Control Room staff monitors the leaf fall prediction website 24/7; should any deterioration in the weather be detected then that information is forwarded to the drivers by text message.

ORR Decision

ORR, considered the above response was concerned mainly with leaf fall, we wrote to Colas Rail on 20 April 2011 requesting confirmation that the Colas

Rail Professional Driving Policy for drivers and the new Colas Rail Control Room operating procedure identifies the specific hazards stated in the recommendation i.e. hazards that exist immediately beyond level crossings such as high risk signals and bay platforms with permissive working.

Status: *In progress*: ORR will provide RAIB with further information by 13 September 2011.