

## Recommendation(s) Status: Overhead line failure, St Pancras International

This report is based on information provided to the RAIB by the relevant safety authority or public body.

The status of implementation of the recommendations, as reported to us, has been divided into six categories:

### Key to Recommendation Status

<b>Implemented:</b>	All actions to deliver the recommendation have been completed.
<b>Implemented by alternative means:</b>	The intent of the recommendation has been satisfied in a way that was not identified by the RAIB during the investigation.
<b>Implementation ongoing:</b>	Work to deliver the intent of the recommendation has been agreed and is in the process of being delivered.
<b>In-progress:</b>	The relevant safety authority has yet to be satisfied that an appropriate plan, with timescales, is in place to implement the recommendation; and work is in progress to provide this.
<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 the relevant safety authority or public body on the status of the recommendation.

RAIB concerns on actions taken by organisations in response to recommendations are reflected in this report and are indicated by one of the following:

-  The red triangle shows recommendations where the RAIB has 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, are inappropriate or insufficient to address the risk identified during the investigation.
-  The white triangle shows recommendations where the RAIB notes substantive actions have been reported, but the RAIB still has concerns.

Note: The tables which follow, report the status of recommendations on 31 December 2015. In some other cases the end implementer has already sent information to the relevant safety authority about the actions it has taken, or proposes to take and the safety authority is considering whether it is satisfied that those actions and the associated timescales are accepted.

Number/ Date/ Report No/ Inv Title / Current Status	Safety Recommendation	Summary of current status (based on latest report from the relevant safety authority or public body)
<p>1            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 that the correct spark gap is maintained to prevent the operation of the lightning arrester at lower than intended voltages.</p> <p>Eurostar should review, and amend if appropriate, the design and/or maintenance of the lightning arrester spark gap electrodes to further reduce the risk of reduction in the length of the gap.</p>	<p>ORR has reported that Eurostar 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            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 that sound quality management processes are in place to monitor the suitability of the installation, testing and commissioning procedures.</p> <p>ABB Power should review its quality management processes as they relate to the installation, testing and commissioning of safety related railway equipment.</p>	<p>ORR has reported that ABB Power 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            23/09/2009    12/2010</p> <p>Overhead line failure, St Pancras International</p> <p>Status: Implemented</p>	<p>The intent of this recommendation is to reduce the mechanical and electrical risk from broken cables from OHLE of the type currently in use at St Pancras falling onto the public or staff, particularly where it is in proximity to public areas of the station.</p> <p>Network Rail and EDF should investigate the possibility of reducing the risk associated with damaged OHLE of the tramway type used at St Pancras International falling onto station platforms. This investigation should include, but not be limited to:</p> <ul style="list-style-type: none"> <li>I improved electrical protection system (e.g. to deliver a more rapid response);</li> <li>I improved support for the contact wire;</li> <li>I enhanced resilience of the contact wire;</li> <li>I avoiding the use of automatic reclosure of circuit breakers supplying the tramway OHLE above platform tracks</li> </ul>	<p>ORR has reported that Network Rail and EDF 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            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</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>

Number/ Date/ Report No/  
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**Safety Recommendation**

**Summary of current status (based on latest report  
from the relevant safety authority or public body)**

protection against all reasonably foreseeable electrical hazards.

5            23/09/2009    12/2010  
Overhead line failure, St Pancras International  
Status: Implemented



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.

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.

Network Rail have carried out a review in response to this recommendation.  
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. \$

6            23/09/2009    12/2010  
Overhead line failure, St Pancras International  
Status: Implemented

The aim of this recommendation is to improve the awareness of new shift managers of the power supply control procedures.

NR (CTRL) should review the induction procedures for new shift managers so that they are made aware of:

I the safety procedures to be followed in response to any matter arising from the operation of the OHLE;

I the importance of carrying out the emergency isolation procedure immediately; and

I the procedures to be followed by EMMIS controllers to recover the situation following an automatic trip while ensuring safety

ORR has reported that Network Rail CTRL 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            23/09/2009    12/2010  
Overhead line failure, St Pancras International  
Status: Implemented

The purpose of this recommendation is to improve the safety of persons at St Pancras in the event of OHLE damage in the station.

Network Rail (CTRL) should make permanent the temporary instruction to EMMIS controllers that staff at St Pancras are to be contacted to confirm that all persons are in positions of safety before attempting to reclose a circuit breaker supplying the station that has opened automatically.

ORR has reported that Network Rail (CTRL) 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.