

## Recommendation(s) Status: Class investigation into rail breaks on the East Coast Main Line

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 ORR's report to RAIB)
<p>1            14/09/2012    24/2014</p> <p>Class investigation into rail breaks on the East Coast Main Line</p> <p>Status: Implemented</p>	<p>This recommendation is intended to reduce the risk of rail breaks by taking advantage of technological developments in the UK and elsewhere, not restricted to ultrasonic techniques, to allow detection of smaller cracks in rails.</p> <p>Network Rail should undertake or commission research to identify any opportunities for reducing the size of cracks and defects which can be identified in rails in circumstances likely to be associated with rail breaks. The research should be targeted at providing reliable information using equipment capable of operating routinely throughout its infrastructure (paragraph 121d).</p>	<p>ORR has reported that Network Rail has reported that it has completed actions taken 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            14/09/2012    24/2014</p> <p>Class investigation into rail breaks on the East Coast Main Line</p> <p>Status: Implementation ongoing</p>	<p>This recommendation is intended to ensure that all parts of Network Rail obtain the maximum benefit from knowledge gained by work intended to reduce the risk of rail breaks on the East Coast Main Line and is a formalisation of a process which Network Rail states is already in progress.</p> <p>Network Rail should review the actions already being taken to reduce the incidence of rail breaks on the East Coast Main Line (including those described in paragraphs 128 and 129) in order to identify whether similar actions would provide significant safety benefits elsewhere on its infrastructure. If such benefits are identified, Network Rail should modify its processes so that they are applied more widely (paragraph 123).</p>	<p>ORR has reported that Network Rail has outlined the actions to be taken in response to the recommendation. ORR will continue to monitor implementation of this recommendation.</p>
<p>3            14/09/2012    24/2014</p> <p>Class investigation into rail breaks on the East Coast Main Line</p> <p>Status: Implemented by alternative means</p>	<p>This recommendation is intended to reduce the risk of rail breaks due to the deterioration of rail pads.</p> <p>Network Rail should establish a process throughout its infrastructure for inspecting parts of rail pads beneath rails (on a sample basis) and, if necessary, replacing rail pads outside rail replacement projects in areas where this is justified by benefits, including benefits from reducing rail break risk (paragraph 121b).</p>	<p>ORR has reported that Network Rail has reported that it has completed the actions taken (by alternative means) 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            14/09/2012    24/2014</p> <p>Class investigation into rail breaks on the East Coast Main Line</p> <p>Status: Implemented by alternative means</p>	<p>This recommendation is intended to reduce the risk of rail breaks by improving the ability of existing Ultrasonic Testing Unit (UTU) equipment to detect initiator cracks and other defects in the lower part of the rail.</p> <p>Network Rail should complete the current test programme to establish the practicability of extending current UTU testing and analysis to identify defects throughout the full depth of a rail and/or defects on the underside of a rail. If the test programme shows that this offers a reasonably practicable means of</p>	<p>ORR has reported that Network Rail has reported that it has completed the actions taken (by alternative means) 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)**

improving the detection of initiator cracks and other defects associated with potential rail breaks, Network Rail should introduce equipment and processes to implement this improved testing and analysis (paragraph 121d).

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5            14/09/2012    24/2014

Class investigation into rail breaks on the East Coast Main Line

Status: Implemented

This recommendation is intended to reduce the risk that railway maintenance staff fail to appreciate that an important change has been made to Network Rail standards.

Network Rail should modify existing document preparation processes to ensure that markings intended to show changes to standards and other safety critical documents clearly indicate the change that has occurred (paragraph 124c).

ORR has reported that 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.