

## Recommendation(s) Status: Locomotive failure near Winchfield

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            23/11/2013    13/2014</p> <p>Locomotive failure near Winchfield</p> <p>Status: Implemented by alternative means</p>	<p>The intent of this recommendation is that the design of the Bulleid small end should be reviewed to establish the benefit or otherwise of using a castellated nut.</p> <p>West Coast Railways, in consultation with the Main Line Steam Locomotive Operators Association, the Bulleid Pacific Locomotive Association and the Heritage Railway Association, should review the design of the small end joint on the Bulleid pacific locomotive to establish the safety benefits, and risk, of using a castellated nut. The results of this review should be shared with other owners of these locomotives (paragraph 119a).</p>	<p>ORR has reported that West Coast Railways has reported that it has taken actions (by alternative means) 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            23/11/2013    13/2014</p> <p>Locomotive failure near Winchfield</p> <p>Status: Implemented</p>	<p>The intent of this recommendation is that the details of the design of cotters fitted to steam locomotives should be reviewed, to reduce the risk of failure arising from fatigue.</p> <p>The Heritage Railway Association and the Main Line Steam Locomotive Operators Association should prepare guidance for their members on the design and manufacture of split cotters to encourage the use of best engineering practice. This may include considering:</p> <p>I reference to the British Railways drawing SL-DN-K.569; or</p> <p>I other methods of fabrication such as the use of folded strip, welded at the head, which is widely used in the industry.</p> <p>(paragraph 119c)</p>	<p>ORR has reported that The Heritage Railway Association and the Main Line Steam Locomotive Operators Association 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            23/11/2013    13/2014</p> <p>Locomotive failure near Winchfield</p> <p>Status: Implemented</p>	<p>The intent of this recommendation is that the maintenance arrangements for steam locomotives operated by West Coast Railway Company should be consistent and in accordance with the provisions of its safety management system.</p> <p>West Coast Railway Company should review and improve its safety management system to take account of the need for assurance that the standards of maintenance work carried out on locomotives owned and/or operated by the company are adequate, consistent and subject to monitoring and supervision independent of those doing the work (paragraph 121a).</p>	<p>ORR has reported that West Coast Railway Company 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**

4            23/11/2013    13/2014

Locomotive failure near Winchfield

Status: Implemented by alternative means

**Safety Recommendation**

The intent of this recommendation is that restorers of steam locomotives should be made aware of the need to thoroughly evaluate and risk assess design changes proposed or made during the restoration process, or subsequently.

The Heritage Railway Association and the Main Line Steam Locomotive Operators Association should bring this report to the attention of their members and invite them to consider thoroughly evaluating and risk assessing changes to the design of steam locomotives that are made during restoration, overhaul or maintenance. The following should be considered:

I whether the purpose and function of the original design, and the reasons for making the change are fully understood;

I whether any additional risk will be introduced by the change;  
and

I any measures that may be needed (during overhaul, operation or maintenance) to reduce the risk associated with the change, and to assess its impact.

(paragraph 119b)

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

ORR has reported that West Coast Railway Company has reported that it has taken actions (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.