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06 July 2017



Mr Andrew Hall  
Deputy Chief Inspector of Rail Accidents  
Cullen House  
Berkshire Copse Rd  
Aldershot  
Hampshire GU11 2HP

Dear Andrew,

**RAIB Report: Uncontrolled freight train run-back between Shap and Tebay, Cumbria**

I write to provide an update<sup>1</sup> on the action taken in respect of recommendation 3 addressed to ORR for ORR action in the above report, published on 15 August 2011.

The annex to this letter provides details of the action taken regarding this recommendation, the status of which is now '**Implemented**'. We do not propose to take any further action in respect of this recommendation, unless we become aware that any of the information provided becomes inaccurate, in which case I will write to you again.

We will publish this response on the ORR website on 10 July 2017.

Yours sincerely,

Tracy Phillips

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

### **Recommendation 3**

*The intention of this recommendation is to provide the rail industry with information on the accuracy of mathematical models used to predict fatigue.*

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.

#### **ORR decision**

1. ORR has addressed the two parts of the recommendation by arranging for a programme of work to review existing biomathematical fatigue models and then providing that information to industry in the form of guidance. ORR considers that we have taken appropriate action to address the recommendation.

2. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, ORR has:

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

***Status: Implemented.***

#### **Previously reported to RAIB**

3. On 11 August 2015 ORR reported the following information to RAIB:

*On 12 May 2014, ORR met with RSSB to discuss progress with ORR's T1030 research proposal, after RSSB had concluded that none of the bids received met RSSB's criteria to proceed with the work.*

*It was agreed that ORR would submit an amended proposal for a narrower piece of work. ORR and RAIB human factors staff discussed the change which was agreed as a reasonable way forward. ORR submitted an amended research proposal T1083 to RSSB, on 22nd August 2014. This proposal was processed through RSSB's research commissioning process.*

*ORR is an active member of the T1083 project steering group, as are DB Schenker. The proposal appears to have strong employer and trade union support across the board. ORR's research proposal T1083 was endorsed by the industry Train Operations Risk Group (TORG) on 13 April 2015. RSSB prepared and issued a project specification, with assistance from ORR, and in early June 2015 bids from four contractors were received. The Steering Group met to assess these week ending 26 June 2015, again with ORR's input, with the*

*final selection decision expected on 30 June 2015. The work will involve adapting recent Australian Civil Aviation Authority (CASA) guidance on bio-mathematical fatigue models and updating it, so that it is more useful for a GB rail industry audience. In addition the work will also involve a basic sensitivity analysis to help identify the relative merits of the various available models. It is currently anticipated that the work will be completed and the resulting rail industry guidance document on bio-mathematical fatigue models published August 2016.*

*Once the T1083 guidance has been published a reference to it will be added to ORR's own guidance to the industry on fatigue.*

## **Update**

4. The publication of ORR's January 2012 guidance on Managing Rail Staff Fatigue provided generic guidance on fatigue models in general and hence partly satisfied the rec, but did not analyse and compare the different models available. To satisfy this latter aspect, ORR submitted two successive research proposals:

- T1030 Comparison of the accuracy of biomathematical models of fatigue
- T1083 Preparing rail industry guidance on biomathematical fatigue models

5. An RSSB workstream, to which ORR contributed extensively, culminated in the publication in late 2016 of the RSSB guidance: *Preparing rail industry guidance on biomathematical fatigue models*. The guidance was launched and publicised at the 3<sup>rd</sup> fatigue Forum in November 2016. ORR has drawn up an information sheet on our website, providing information on the relevance of the project to FRI users: [http://orr.gov.uk/\\_data/assets/pdf\\_file/0004/23683/points-from-rssb-project-t1083-regarding-the-fatigue-and-risk-index-november-2016.pdf](http://orr.gov.uk/_data/assets/pdf_file/0004/23683/points-from-rssb-project-t1083-regarding-the-fatigue-and-risk-index-november-2016.pdf)

## **Previously reported to RAIB on 5 December 2013**

1. Based on Research proposal T1030, with Operations Focus Group's (OFG) support, RSSB produced a draft T1030 Research Specification. RSSB had copied the Research Specification to DBS so that DBS and RSSB could liaise directly on what assistance and data DBS can provide for the work.

## **Update**

2. On 12 May 2014, ORR met with RSSB to discuss progress with ORR's T1030 research proposal, after RSSB had concluded that none of the bids received met RSSB's criteria to proceed with the work.

3. It was agreed that ORR would submit an amended proposal for a narrower piece of work. ORR and RAIB human factors staff discussed the change which was agreed as a reasonable way forward. ORR submitted an amended research proposal T1083 to RSSB, on 22nd August 2014. This proposal was processed through RSSB's research commissioning process.

4. ORR is an active member of the T1083 project steering group, as are DB Schenker. The proposal appears to have strong employer and trade union support across the board. ORR's research proposal T1083 was endorsed by the industry Train Operations Risk Group (TORG) on 13 April 2015. RSSB prepared and issued a project specification, with assistance from ORR, and in early June 2015 bids from four contractors were received. The Steering Group met to assess these week ending 26 June 2015, again with ORR's input, with the final selection decision expected on 30 June 2015. The work will involve adapting recent Australian Civil Aviation Authority (CASA) guidance on bio-mathematical fatigue models and updating it, so that it is more useful for a GB rail industry audience. In addition the work will also involve a basic sensitivity analysis to help identify the relative merits of the various available models. It is currently anticipated that the work will be completed and the resulting rail industry guidance document on bio-mathematical fatigue models published August 2016.

5. Once the T1083 guidance has been published a reference to it will be added to ORR's own guidance to the industry on fatigue.

**Status (reported at that time): *Implementation on-going*. ORR will advise RAIB when further information is available regarding actions being taken to address this recommendation.**