

Oliver Stewart
Senior Executive, RAIB Relationship and
Recommendation Handling

Telephone 020 7282 3864

E-mail oliver.stewart@orr.gsi.gov.uk

23 August 2018



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

Dear Andrew,

RAIB Report: Signal passed at danger on approach to Wootton Bassett Junction, Wiltshire, 7 March 2015

I write to provide an update¹ on the action taken in respect of recommendation 1 addressed to ORR in the above report, published on 5 May 2016.

The annex to this letter provides details of the action taken regarding the recommendation, the status of which is now '**Implemented**'. We do not propose to take any further action in respect of the 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 24 August 2018.

Yours sincerely,



Oliver Stewart

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

Recommendation 1

The intent of this recommendation is that the risk of overrun by trains operated by steam traction on Network Rail managed infrastructure is reduced as far as is reasonably practicable.

RSSB, working in conjunction with operators of steam traction and Network Rail, and in accordance with normal industry processes, should undertake a review of the current standards, policies, procedures and risk assessment tools intended to assess, prevent and mitigate the risk associated with overruns on Network Rail managed infrastructure.

This review should consider if these arrangements adequately control the risk of overrun associated with the movement of trains formed of steam locomotives and/or preserved vehicles. It should specifically consider:

- the extent to which existing railway group standards and associated guidance adequately mitigate the risk of operating such trains;
- if there are features of steam locomotives and preserved vehicles which may potentially increase the likelihood or magnitude of overruns (such as reduced forward visibility or braking systems not designed to meet modern standards of performance) or which may potentially make the consequences of an overrun worse (such as vehicles not being designed to meet modern standards of crashworthiness);
- the compatibility of braking performance of steam-hauled trains and/or preserved vehicles with signal spacing on lines where signals are more closely spaced (eg lines where different maximum permitted speeds apply to passenger and freight trains);
- how the train crew of steam locomotives interact with the controls and visual and audible indications of the Automatic Warning System and the Train Protection and Warning System;
- if the minimum crewing level for steam movements specified within GO/RT 3440 Issue 2 remains appropriate; and
- if steam movements are adequately accounted for within existing tools intended to assess the risk of overruns (such as SORAT).

Companies operating steam locomotives and/or preserved vehicles on Network Rail managed infrastructure and Network Rail should implement any measures identified by this review as being required to adequately control the risk from overrun

ORR decision

1. RSSB has reviewed the existing standards and guidance for running heritage vehicles on the main line through the work of the Charter Train Group. The Charter Train Group was made up of operators of heritage locomotives and rolling stock and Network Rail. Following the work of the group, RSSB has produced three guidance documents for the operation of heritage steam trains on the mainline:

- RIS-4472-RST issue 1 - Engineering Requirements for Steam Locomotives and other Heritage Rail Vehicles
- RIS-3440-TOM issue 2 - Rail Industry Standard for the Operation of Heritage Trains
- RIS-2003-RST issue 1 – Certification of heritage railways

2. West Coast Railways, Vintage Trains, Locomotive Services and North Yorkshire Moors Railway, have all had their Safety Certificates renewed by ORR in the last year, and all made reference to applying the new standards in their applications. DB cargo is the only freight operator who operates steam traction, their safety certificate was renewed prior to the new standards coming in to force, but they were part of the Heritage Charter group of the RSSB who drafted the standards. ORR have also looked at DB Cargo's steam operation following the failure of Tornado, we did not have concerns about their failure to apply the new standards.

3. Network Rail were also part of the RSSB Heritage Charter group who drafted the standards. They run a 6 monthly conference to discuss Heritage Operations and are aware of their role in the planning and operation of steam traction on the network.

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

- taken the recommendation into consideration; and
- has taken action to implement it by producing revised guidance and ORR is satisfied operators that run steam trains on the mainline have acted upon the revised guidance

Status: *Implemented*

Previously reported to RAIB

5. On 14 July 2017 ORR reported that RSSB was facilitating industry-wide action to improve understanding of the risks associated with steam trains operating on the main line. This work includes making amendments to relevant standards, GO/RT 3440 (Steam locomotive operation) and GM/RT 2003 (Certification requirements for registration of steam locomotives).

Update

6. RSSB notified ORR that the revised guidance documents were published in December 2017.

Previously reported to RAIB

Recommendation 1

The intent of this recommendation is that the risk of overrun by trains operated by steam traction on Network Rail managed infrastructure is reduced as far as is reasonably practicable.

RSSB, working in conjunction with operators of steam traction and Network Rail, and in accordance with normal industry processes, should undertake a review of the current standards, policies, procedures and risk assessment tools intended to assess, prevent and mitigate the risk associated with overruns on Network Rail managed infrastructure.

This review should consider if these arrangements adequately control the risk of overrun associated with the movement of trains formed of steam locomotives and/or preserved vehicles. It should specifically consider:

- the extent to which existing railway group standards and associated guidance adequately mitigate the risk of operating such trains;
- if there are features of steam locomotives and preserved vehicles which may potentially increase the likelihood or magnitude of overruns (such as reduced forward visibility or braking systems not designed to meet modern standards of performance) or which may potentially make the consequences of an overrun worse (such as vehicles not being designed to meet modern standards of crashworthiness);
- the compatibility of braking performance of steam-hauled trains and/or preserved vehicles with signal spacing on lines where signals are more closely spaced (eg lines where different maximum permitted speeds apply to passenger and freight trains);
- how the train crew of steam locomotives interact with the controls and visual and audible indications of the Automatic Warning System and the Train Protection and Warning System;
- if the minimum crewing level for steam movements specified within GO/RT 3440 Issue 2 remains appropriate; and
- if steam movements are adequately accounted for within existing tools intended to assess the risk of overruns (such as SORAT).

Companies operating steam locomotives and/or preserved vehicles on Network Rail managed infrastructure and Network Rail should implement any measures identified by this review as being required to adequately control the risk from overrun

ORR decision

7. RSSB is facilitating industry-wide action to improve understanding of the risks associated with steam trains operating on the main line. This work includes making amendments to relevant standards, GO/RT 3440 (Steam locomotive operation) and GM/RT 2003 (Certification requirements for registration of steam locomotives).

8. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, RSSB has:
- taken the recommendation into consideration; and
 - is taking action to implement it by December 2017.

Status: Implementation ongoing. ORR will advise RAIB when actions to address this recommendation have been completed.

Information in support of ORR decision

9. On 18 June 2016, RSSB provided the following initial response:

First, I am pleased to report that RSSB accepts the recommendation, though we must note – regarding the final bullet point – that the ORR should seek clarification on SORAT from the owners of SORAT (ie Network Rail). This is not a matter for RSSB.

RSSB's acceptance is based on a wider industry understanding of the issues surrounding heritage operations on the main line. Indeed, the industry has formed a Charter Train Group, which is chaired by Alan Tordoff, a man highly experienced in this field, but now working for RSSB as part of its Industry Engagement Team. As part of that wider understanding, RSSB was already in the process of facilitating amendments to GO/RT 3440 (Steam locomotive operation) and GM/RT 2003 (Certification requirements for registration of steam locomotives). However, we must note at this point that the review of '3440' is likely to result in a RIS or guidance document rather than an RGS. Provided all train operators adopt and comply with the content we are confident that it will provide safety improvement.

That said, the proposed work involves a more holistic approach. Thus the new '3440' will look beyond steam to encompass other charter train operations. The amendments to '2003' will involve a suite of requirements in four parts:

- 1. Design/engineering requirements and guidance to support the build, re-build or when making engineering changes to heritage vehicles such that they are compatible with the GB mainline network.*
- 2. The process for assessing technical compatibility with the GB mainline network and the route(s) on which the vehicle is going to operate.*
- 3. Guidance and requirements on how to operate a vehicle safely.*
- 4. Guidance and requirements on how to maintain a vehicle's capability to operate safely and compatibly with the network and route(s) it operates on.*

Note that the revised '2003' will encompass all heritage vehicles, including coaching stock and non-steam locomotives (many of which are older than

some 'rebuilt' steam locomotives and need to be brought up to minimum standards). Work on GO/RT 3440 and GM/RT 2003 will be supported by the afore-mentioned stakeholder support group to ensure engagement with a cross-section of heritage industry practitioners during the drafting process.

Both documents are scheduled to be published in December 2017. We will keep ORR informed of developments.

10. RSSB pointed out that SORAT is owned by Network Rail. ORR therefore sought clarification from RSSB if they use any other existing tools to assess the risk of train overrunning signals at danger.

11. On 7 September 2016, RSSB provided the following response:

SORAT is the tool for assessing SPAD risk locally (at a specific signal). We support Network Rail in its development and use (sitting on the SORAT Steering Group) and don't have any equivalent tools in RSSB.

The Safety Risk Model (SRM) estimates SPAD risk at the national level. The risk estimates, which are published in the Risk Profile Bulletin, are disaggregated by the cause of the SPAD, the train involved (passenger or non-passenger) and other characteristics, for example SAS SPADs are shown separately, as are plain line and junction SPADs.

SORAT is calibrated against the SRM.

The SPAD Risk Ranking Tool is used to monitor SPAD risk. Each SPAD is scored (by Network Rail) and an important component of the score depends on how close the train came to reaching the potential conflict point, based on the length of overrun and distance from the signal to the location at which a conflict could have occurred. Furthermore, the SPAD at Wootton Bassett – and the fact it reached the conflict point – will inform the next SRM update.