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5 April 2019



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

Dear Andrew,

RAIB Report: Overturning of a tram at Sandilands junction, Croydon, 9 November 2016

I write to provide an update¹ on the action taken in respect of recommendation 9 addressed to ORR in the above report, published on 7 December 2017.

The annex to this letter provides details of the action taken regarding the recommendations. The status of recommendation 9 is '**implemented**'.

We will publish this response on the ORR website on 5 April 2019.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Oliver Stewart', written over a light blue horizontal line.

Oliver Stewart

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

Update to RAIB

Recommendation 9

The intent of this recommendation is to ensure that the safety authority responsible for regulation of UK tramways maintains an appropriate, proportionate risk-based level of inspection and oversight to tramway operations.

The Office of Rail and Road should carry out a review of the regulatory framework for tramways and its long-term strategy for supervision of the sector. This should be informed by a new assessment of the risk associated with tramway operations (allowing for low frequency/high consequence events of the type witnessed at Sandilands junction) and consideration of the most effective means by which supervision can contribute to continuous improvement in passenger safety.

ORR decision

1. We stated in our initial response to RAIB that we will consider rec 9 to be implemented when we have published our strategic chapter covering the tram industry.
2. The purpose of the strategic risk chapters is to help ORR and the sector identify, prioritise and focus on key risk areas, based on incident data, risk trend analysis and the findings from our inspections, investigations and audits. The chapters are updated on a periodic basis.
3. The draft strategic risk chapter was reviewed and approved by ORR's Health and Safety Regulation Committee (HSRC) on 25 March and will be published on the *Our strategic risk chapters* page of our website in early April <https://orr.gov.uk/rail/health-and-safety/health-and-safety-strategy/our-strategic-risk-chapters>
4. We will review the content of the chapter once the output of the sector's review of operational risk is available, this being implemented as part of its development of a new safety risk model in order to discharge recommendation 2. We will also review the strategy once the learning from the trial tram-train service between Sheffield and Rotherham has been published and evaluated.
5. We also stated in our initial response to RAIB that we had carried out the review of the current legislative and regulatory framework for tramway safety as required by recommendation 9. Our findings were discussed with HSRC and the Railway Industry Health and Safety Committee (RIHSAC) and the broad conclusion was that the framework was sufficiently robust to support implementation of the safety improvements demanded by the Sandilands accident. Since our initial response we have carried out further external consultation with the tram industry.. The consultation closed on 25 March 2019. We are reviewing responses to help determine any further improvements or changes we might be able to make in the future and our consultation document makes clear, we will keep the framework under review. However, we are content that we have carried out the review demanded by Rec 9 and do not believe the recommendation should be held open in perpetuity

while we carry out our normal regulatory business of monitoring and continuously improving the regulatory framework.

6. 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

7. In our initial response to RAIB in December 2018, we provided RAIB with details of the review we carried out when considering this recommendation, the improvements we identified to make to the regulatory structure and the timescales for making those changes.

Update

8. A paper to the ORR Health & Safety Regulation Committee on 25 March 2019 set out the objectives and option development process we undertook when putting together the strategic risk chapter:

The issues that affect the mainline, heritage, and light rail sectors are essentially the same but present different risk profiles. The types of hazards and control arrangements on tramways are fundamentally different due to the operating principles.

The underlying philosophy that informs the design and operating principles of tramways in the UK are different to other UK rail sectors. This is most obvious in tramway sections that operate on streets in close proximity with members of the public where operation is consistent with highway principles. This approach is generally then followed in off-street sections, even although the route may appear more like a railway operation.

Taking these differences into account, we have reviewed our strategic approach to supervising the tramways sector, and more widely the basis for the principles of operation. We have concluded a strategic chapter for tramways will provide greater clarity than the current approach.

A dedicated strategic chapter on tramways that identifies the significant characteristics of tramway operation that create specific risks that are either not relevant to mainline rail or heavy use metro/urban railways enables ORR and the sector to have a clearer understanding of where to target strategic focus.

It also acts as an enabler to allow wider stakeholders, such as funding authorities, RAIB, passengers, and members of the public to better understand the sector's approach to controlling risk, and our priorities.

The new strategic chapter for regulating Great Britain's modern tramways is intended to complement our topic specific strategic chapters that are relevant across the rail sector. Its purpose is to provide information on the context, legislation, and operating characteristics of the modern tramway sector, the differences between 'traditional' railways and tramways, why these differences exist, and how they impact on the management of risk. With a greater level of common understanding on tramway operation, the aim is to reach a clear consensus on the priority areas for future focus.

The tramway sector does not yet benefit from the level of quantitative data that the mainline sector has access to, and does not yet have an operational safety risk model. The sector is developing a safety risk model that is due to be complete during 2019. Rather than wait for the outcome of that work, we have produced our strategic document now. We have committed to review our strategic chapter as the level of understanding increases.

9. The Strategic risk chapter set out ORR's regulatory strategy and vision for the tram sector:

ORR's Strategy for the tramway sector

ORR expects all those associated with tramways, including operators, maintainers and owners, to have in place suitable and sufficient safety management systems (SMS) that allow them to properly identify and keep under review the risks inherent in their systems and have in place the necessary controls to manage those risks, whether this is through infrastructure and systems, or through operating practices. We expect the industry to monitor for opportunities for improved risk control, such as offered by rapidly developing technologies, and pursue such opportunities where reasonably practicable,

To help achieve this ORR will:

With the Tramway Sector

- Promote the role of leadership in creating a strong learning culture that is capable of regularly reviewing health and safety performance, and being able to take prompt action to prevent accidents and improve risk control;
- Support the GB tram industry's work in developing arrangements to enable more effective cooperation on health and safety matters;
- Support the sector's work to better understand safety risk associated with tramway operation to ensure that appropriate guidance and standards are in place for the GB tramways;
- Encourage the sector to use the risk management maturity model (RM3); and the sector developed risk models and reporting systems as a means to identify success and areas for improvement;
- Push the industry to apply the hierarchy of risk control, with the elimination of risk at source and move towards further engineering control to reduce the reliance on human performance in systems through the principles of safety by design at scheme, vehicle, and component level (see chapter 12 Safety by Design);

- Keep the regulatory framework under review so as to ensure that it remains valid in light of significant developments.

With individual Dutyholders

- Continue to carry out planned inspections & reactive investigations; and assess the evidence captured against the Risk Management Maturity Model (RM3) to build a clearer more in-depth picture of dutyholder's health and safety management capability;
- Continue to give specific attention to ensuring that dutyholders continue to deliver actions they identified to implement the requirements of the RAIB Sandilands report and other relevant RAIB recommendations, with particular focus on actions to prevent high consequence events occurring;
- Promote improved levels of safety reporting and investigation within individual tramway systems, enhanced quality of safety reporting to the regulator, and better sharing of safety learning to other parties in the sector; and
- Where necessary take enforcement action in accordance with our enforcement policy.

Vision

We expect the tramway sector to deliver continual improvement in the health and safety of passengers, workforce, and the public to achieve ORR's vision of "*zero industry caused fatalities and major injuries to passengers, the public, and the workforce*".

We believe that for the tramways sector to achieve this it should:

- Have a strong central body providing safety leadership to the industry, setting standards and good practice drawing on the experience of the GB operators, and learning from across mainland Europe and the rest of the world;
- Keep under review the possibilities for improving risk control and taking a proactive approach to embracing appropriate risk control technologies, including from other transport sectors;
- Have an evidence-based approach to modelling the risks inherent in their systems and which puts in place reasonably practicable measures to mitigate those risks;
- Use established methods to measure its own health and safety performance and which takes actions to improve on the basis of those assessments;
- Establish sensible performance benchmarks for health and safety performance that the sector can measure themselves against;
- Develop an improved culture of cooperation and sharing of safety related information between systems to help the overall performance of the GB tramways.

Previously reported to RAIB

Recommendation 9

The intent of this recommendation is to ensure that the safety authority responsible for regulation of UK tramways maintains an appropriate, proportionate risk-based level of inspection and oversight to tramway operations.

The Office of Rail and Road should carry out a review of the regulatory framework for tramways and its long-term strategy for supervision of the sector. This should be informed by a new assessment of the risk associated with tramway operations (allowing for low frequency/high consequence events of the type witnessed at Sandilands junction) and consideration of the most effective means by which supervision can contribute to continuous improvement in passenger safety.

ORR decision

1. The consideration we gave to this recommendation was initially broken down into three work streams:

- Carrying out a prior role review of our previous supervision of the Croydon system, which recommended inter alia that we “continue to press UKTram to expedite central reporting and analysis of accident, incident and near miss-data. Until that goes live, we generate enhanced statistical data from our RIDDOR reports with greater granularity for tramways. This would help inform future decisions about resourcing regulation of the sector”;
- Setting out a high-level overview of the strengths and weaknesses of the current legislative framework for tramway safety; and
- Strengthening our tramway inspection team and establishing a plan for risk-based proactive supervision of the sector during 2018/19.

2. To structure our thinking of the review of the regulatory framework, we identified the five key components of the framework and identified options for change by comparing tramway provision with relevant “reference systems” from the transport sector (rail and bus). We did not consider general health and safety legislation as this applies uniformly across the piece.

3. While our review concluded that the framework is sufficiently robust to support implementation of the safety improvements demanded by the Sandilands accident, we have also identified some proportionate recommendations to strengthen it. We have outlined the following with the LRSSB steering group:

1. **Safety management systems** – We should seek greater visibility and transparency of the sector’s own internal safety audits and build up our RM3 evidence base. We would only support extending mandatory safety certification to the sector if evidence emerges of a safety benefit and subject to our being resourced to carry out certification without abstracting resource from proactive inspection.

2. **Risk assessment** – We should encourage the sector to improve the rigour of its independent verification of new or significantly altered operations or technology, including through the voluntary use of the CSM risk assessment.
 3. **Safety critical work including tram driving** – We have not identified any safety benefits associated with licensing of tram drivers, though we will revisit our position if further appraisal of the mainline train driver licensing system identifies such benefit.
 4. **Authorisation of vehicles and infrastructure** – We have not identified a justification for overlaying new ORR authorisation requirements on top of existing statutory approvals for tram systems and their vehicles.
 5. **Safety performance reporting** – We should make better use of existing RIDDOR data from the tram sector and we will continue to encourage sector duty holders to share more of the data they currently collect with us.
4. The analysis of the components of the regulatory framework that supported our decision making is explained in Annex B, para 168 [not attached to this update].
 5. Our plans for 2018/19 now include resource and a structured programme to carry out more proactive supervision of the tram sector, based around key RM3 criteria and to develop and publish a new strategic risk chapter for trams based on our existing knowledge, evidence and risk analysis.
 6. Significantly better cross-industry safety data and analysis will not be on-stream before mid-2019 and, equally, we need to build up our inspection evidence base significantly in order to make meaningful RM3 assessments of the tram sector. This means we will need to keep our analysis under review. We have been clear that we will not propose regulatory changes until and unless they are justified by much more detailed evidence of this nature.
 7. ORR developed a programme to deliver the requirements of recommendation 9:
 1. Undertake review of regulatory framework: COMPLETE; findings presented to ORR Health & Safety Regulation Committee (HSRC) & Rail Industry Health & Safety Advisory Committee (RIHSAC)
 2. Commence discussions with tram sector concerning the recommendations that emerged from our review: COMMENCED, next steps formal consultation on proposed requirements commencing January 2019
 3. Undertake a new assessment of the risk of the tramway sector
 - a. Undertake a regulatory review of ORR risk topics as applicable to the tramway sector (RARR process): COMPLETE
 - b. Produce strategic risk chapter that describes our approach and priorities for the tramway sector: COMMENCED, PRESENT DRAFT to RIHSAC January 2019, PUBLISH April 2019
 - c. First review output of LRSSB risk model AUTUMN 2019, to assess impact on RARR outcome
 - d. Review Strategic Risk chapter APRIL 2020

4. Consideration of the most effective means by which supervision can contribute to continuous improvement in passenger safety:
 - a. Approach will be informed by strategic risk chapter, but have already determined that proactive supervisory capability requires increased. PI appointed, increased inspector resource committed from April 2019.
 - b. Increase level of proactive engagement with sector, driven by formal annual inspection plan process. COMMENCED: 2017, approach continues to evolve into 2019
 - c. Application of RM3: COMMENCED in 2018, will continue to evolve into 2019

8. When the strategic risk chapter is published we will consider that the recommendation has been implemented. Steps 2, 3c and 3d, and 4 will be covered under BAU.

9. 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
 - is taking action to implement it, but is keeping the implementation outcome under review, subject to meeting the milestones in the work plan.

Status: Implementation on-going. ORR will advise RAIB when further information is available regarding actions being taken to address this recommendation.