

Oliver Stewart
RAIB Recommendation Handling Manager



28 March 2024

Mr Andy Lewis
Deputy Chief Inspector of Rail Accidents

Dear Andy,

RAIB Report: Derailment of a freight train at Llangennech, Carmarthenshire on 26 August 2020

I write to provide an update¹ on the action taken in respect of recommendations 3 and 4 addressed to ORR in the above report, published on 13 January 2022.

The annex to this letter provides details of actions taken in response to the recommendations and the status decided by ORR. The status of recommendations 3 and 4 is '**Closed**'.

We do not propose to take any further action in respect of the recommendations, unless we become aware that any of the information provided has become inaccurate, in which case I will write to you again.

We will publish this response on the ORR website.

Yours sincerely,

Oliver Stewart

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

Recommendation 3

The intent of this recommendation is to mitigate risks involved in the overhaul of the safety critical components of freight wagons maintained by Arlington Fleet Services Ltd.

Arlington Fleet Services Ltd, in conjunction with Touax Rail, should review and improve its quality management arrangements for maintaining and overhauling safety critical systems and components of wagons at Eastleigh works. This should include completing a task analysis of the processes that are used for undertaking and verifying the work done in accordance with Touax's work instructions. It should also check that the instructions issued to staff are complete and suitable for the task. A time-bound plan should be developed for the areas of improvement that are identified.

ORR decision

1. Arlington Fleet Services (AFS) no longer has a commercial relationship with Touax, so has not been able to review the arrangements for maintaining and overhauling safety critical systems and components of wagons in the context of that particular contract. AFS has provided the output from a recent audit of another ECM that uses very similar services from AFS, which identified no non-conformances. AFS has also provided evidence of recent ISO approval of management systems.

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

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

Status: Closed.

Previously reported to RAIB

3. On 12 January 2022 ORR reported the following:

Arlington Fleet Services Ltd (AFSL) have provided maintenance instructions for the Type ZA1 tank wagon, but it is not clear if this is representative of a wider review of quality management arrangements for maintaining and overhauling safety critical systems and components of wagons at Eastleigh works.

We do not consider this response to adequately address the recommendation. We will approach AFSL in due course to discuss how relationships with all ECMs they are contracted to are handled.

Update

4. On 2 January 2024 Arlington Fleet Services provided the following update:

Following our MS Teams meeting on 11th December 2023, I would like to confirm our discussions and present you with the evidence of our actions.

We presented our case that Recommendation 3 is focussed on the findings within the report which may be summarised at paragraph 213 (a) ii thus:

“The relay valve on wagon GERS 89005 was further susceptible to loosening because it was not being maintained as specified by the brake equipment manufacturer. This was able to happen because Touax’s management of its ECM requirements was inadequate...”

We further presented that we cannot progress the recommendation to undertake a “task analysis” or present a time bound plan without the involvement of the ECM, Touax. We initially made made efforts to undertake the task analysis, as described in our letter to you of 31st October 2022 where we included the results of our task analysis, but we explained that we had yet to receive a response from Touax. Since that time, we have severed all ties with Touax for reasons of risk.

We have, however, made further improvements to our general quality management arrangements, since the incident at Llangennech, and we present the following illustrations and evidence:

- *We have been subjected to an ECM audit by TÜV Rheinland UK Limited for a near identical provision of services for STVA (now Groupe Cat and formerly SNCF) (this was an audit of STVA by TÜV for the approval of their ECM systems) where no non conformances were discovered within Arlington’s systems. A previous audit by the same audit body on behalf of Touax, for the identical subject matter, included a number of non conformances.*
- *We have just gained re-approval for our ISO9000 series and ISO14001 series management systems and we, on this occasion, added ISO45001 series management systems for which we also gained approval.*
- *Between these events, we have gained approval for EN15085 series of management standards which requires another level of control of procedures and processes at the workshop level. I include copies of our approvals as attachments to the email that this letter accompanies although I have included the audit report, in lieu of the certificates, for the ISO9000, ISO14000 and ISO45000 series as this shows all findings. As articulated at the online meeting, we believe that we have made all reasonable efforts to close out Recommendation 3 of RAIB Report 01/2022 and we hope that you can now form an equal opinion.*



Arlington Fleet
Services - AUDIT REPC



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3259RISQSCertificate
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ARLINGTON_FLEET_
GROUP_LTD-15085-C

Recommendation 4

The intent of this recommendation is to validate the design of the interface between the relay valve and the pipe bracket on the GF4-SS1 brake group.

Wabtec Faiveley should use the findings of this investigation to review the design of the interface between the VCAV relay valve and GF4-SS1 pipe bracket and implement any necessary improvements. This should include a review of the position of the equipment on the vehicle, the type and number of fastenings, specified torque values, related instructions for the detachment and reattachment of a relay valve, and how the security of safety critical component fixings is monitored. A time-bound plan should be developed for any necessary improvements that are identified.

ORR decision

5. Wabtec has provided a response setting out how each of the points in the recommendation has been taken into consideration as part of a review of the design of the interface between the VCAV relay valve and GF4-SS1 pipe bracket. The main output of the review has been the introduction of a more robust fixing system for the relay valve and pipe bracket. Wabtec concluded that the type and number of fastenings and torque values to be appropriate. The position of the equipment on the vehicle and the monitoring of the security of safety critical components is considered to be within the remit of the wagon manufacturer and railway undertaking.

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

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

Status: Closed.

Previously reported to RAIB

7. On 12 January 2022 ORR reported the following:

The recommendation was addressed to Wabtec Faiveley as the organisation identified in the RAIB report as the designer and manufacturer of the braking system (including the C3W distributor and relay valve) that was installed on wagon GERS 89005. We have since been notified by Wabtec that Wabtec Faiveley is not a recognised legal entity and so the recommendation can not be acted upon. In order to progress this recommendation, we have asked RAIB to identify the correct legal entity.

Update

8. On 25 January 2024 Wabtec provided the following update:

Following our conversation on this matter and formally acknowledging that recommendation 4 is not directed at Wabtec, Wabtec have assessed the requirements of the recommendation, and as holders of the design documentation for the assemblies in question, have addressed the recommendation points without prejudice and in a professional manner. For the avoidance of doubt Wabtec consider that the relay mounted to the current standard is part of a robust installation.

The relay valve fitted to the wagon has been supplied to many thousands of applications across the world and the Llangennech incident was the only one in available memory or records where the relay valve partial detachment has been attributed to a safety related incident. Wabtec have therefore undertaken this study without prejudice to retrospective claims for equipment upgrades.

Wabtec have reviewed the design of the interface between the relay valve and the pipe bracket, to increase the understanding of potential hazards that may exist and where possible to mitigate these. The hazards identified are generally associated with human-factors and non-compliance with the assembly instructions in Wabtec manuals.

Addressing the specific points of the recommendation in turn:

1. Review the design of the interface between the Relay valve and the Pipe Bracket

Wabtec have reviewed the installation in an attempt to provide a more robust installation to reduce the risk of a failure caused by slight deviations from the manual instructions, an alternative fixing system is available and detailed in the attached technical Leaflet (01513-E01TLF_A00). The alternative fixing components have been subject to type testing to validate their integrity.

2. position of the equipment on the vehicle

This feature is outside Wabtec's sphere of influence. This would be an issue to be raised by the vehicle builders who decide the mounting location. For Tank wagons with no vehicle structure other than the tank, it is difficult to provide greater protection to the brake group unless mounting the group at one end of the vehicle, however mounting at one end does have system and timing implications for the brake system.

3. the type and number of fastenings

The design evolution of the relay valve, particularly in terms of weight reduction, means that the two M10 fixings to attach the valve is more than adequate for the equipment. The current fixings include a steel stud, a CS washer, and a plain nut. The upgraded alternative fixings include Nordlock washers and bent beam nuts to provide some resilience in the event of under torquing or contamination of the threads.

4. specified torque values

The torque values used for the current fixings have been checked and re-checked, and considering the installation, these values are correct. The report indicates that there is some potential to increase the torque values, but this, in our analysis, would lead to overstressed bolted joint therefore it is not recommended to increase the torque values.

5. related instructions for the detachment and reattachment of a relay valve

The maintenance and installation documents have been reviewed and has been updated to include the upgraded fixings as an option.

6. **how the security of safety critical component fixings is monitored**

Wabtec consider that the management of fixings and their integrity during the life of the vehicle applies to all parts, not just to those associated with the brake equipment. From a design perspective a correctly installed bolted joint should not deteriorate over time, and consequently the Railway Undertaking's safety management system shall take this into account when periodically inspecting vehicles. Wabtec instructions include the requirement to torque-mark the fasteners to confirm that the correct torque has been applied, and to provide a visual indication of any movement of the joint.

Previously reported to RAIB

Recommendation 3

The intent of this recommendation is to mitigate risks involved in the overhaul of the safety critical components of freight wagons maintained by Arlington Fleet Services Ltd.

Arlington Fleet Services Ltd, in conjunction with Touax Rail, should review and improve its quality management arrangements for maintaining and overhauling safety critical systems and components of wagons at Eastleigh works. This should include completing a task analysis of the processes that are used for undertaking and verifying the work done in accordance with Touax's work instructions. It should also check that the instructions issued to staff are complete and suitable for the task. A time-bound plan should be developed for the areas of improvement that are identified.

ORR decision

1. Arlington Fleet Services Ltd (AFSL) have provided maintenance instructions for the Type ZA1 tank wagon, but it is not clear if this is representative of a wider review of quality management arrangements for maintaining and overhauling safety critical systems and components of wagons at Eastleigh works.
2. We do not consider this response to adequately address the recommendation. We will approach AFSL in due course to discuss how relationships with all ECMs they are contracted to are handled.
3. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Arlington Fleet Services Ltd and Touax Rail have:
 - Taken the recommendation into consideration
 - But has not provided a sufficient response setting out how it will be delivered.

Status: Insufficient response. ORR will advise RAIB when further information is available regarding actions being taken to address this recommendation.

Information in support of ORR decision

4. On 31 October 2022 Arlington Fleet Group Ltd provided the following response:

In response to your letter, we have implemented a specific instruction for the overhaul of the tank wagons in question which I attach a copy of.



QPP-042-ZA1_102t_
Class_A_Tank_Wagon

Within this instruction, we have amended the way in which we review and assess competence and we have implemented the changes presented to us from Touax with regard to the offending pipe bracket. This instruction is the result of a task by task review of Touax's work instructions. Recommendation 3 of the RAIB report, however, required this to be done in conjunction with Touax. We are awaiting feedback from Touax regarding our new instructions and to our review but, to date, Touax has not engaged with Arlington or offered input to the process.

I hope to keep you updated of any further progression but we are now in the hands of Touax to engage with us to complete the recommendation.

Recommendation 4

The intent of this recommendation is to validate the design of the interface between the relay valve and the pipe bracket on the GF4-SS1 brake group.

Wabtec Faiveley should use the findings of this investigation to review the design of the interface between the VCAV relay valve and GF4-SS1 pipe bracket and implement any necessary improvements. This should include a review of the position of the equipment on the vehicle, the type and number of fastenings, specified torque values, related instructions for the detachment and reattachment of a relay valve, and how the security of safety critical component fixings is monitored. A time-bound plan should be developed for any necessary improvements that are identified.

ORR decision

5. The recommendation was addressed to Wabtec Faiveley as the organisation identified in the RAIB report as the designer and manufacturer of the braking system (including the C3W distributor and relay valve) that was installed on wagon GERS 89005. We have since been notified by Wabtec that Wabtec Faiveley is not a recognised legal entity and so the recommendation can not be acted upon. In order to progress this recommendation, we have asked RAIB to identify the correct legal entity.

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

- Indicated that the recommendation has been taken into consideration by the equipment designers, but has not yet provided a response

Status: Insufficient response. ORR will advise RAIB when further information is available regarding actions being taken to address this recommendation.

Information in support of ORR decision

7. On 28 October 2022 Wabtec responded as follows:

We write in response to your letter of 1st September 2022 which requires a response to Recommendation 4 in the associated Rail Accident Report dated January 2022, attached. This recommendation requires a response from an entity referred to as 'Wabtec Faiveley'.

We are unsure to what this refers to as there is no legal entity of which we are aware called Wabtec Faiveley.

We therefore invite you to clarify this point in order for us to understand the report and try to assist you, as we are currently unable to do so.