

Report to:	SHAREHOLDER COMMITTEE
Relevant Officer:	John Blackledge, Director of Community and Environmental Services and Jane Cole, Managing Director of Blackpool Transport Services
Relevant Cabinet Member:	Councillor Ivan Taylor, Deputy Leader and Cabinet Member for Partnerships and Performance
Date of Meeting:	20 January 2023

COMPLIANCE WITH RECOMMENDATION 4 OF RAIL ACCIDENT INVESTIGATION BOARD'S REPORT

1.0 Purpose of the report:

1.1 To consider compliance with Recommendation 4 of the Rail Accident Investigation Board's (RAIB) report into the 2016 Croydon tram accident, by proceeding with modification to the traction brake controller, strengthening the driver vigilance device system.

2.0 Recommendation(s):

2.1 To agree to proceeding with the modification to the traction brake controller, in order to strengthen the driver vigilance system at a cost of £100k.

3.0 Reasons for recommendation(s):

3.1 To comply with the RAIB Recommendation 4 of the Croydon report in terms of driver in-attention systems and traction brake control.

3.2 Is the recommendation contrary to a plan or strategy adopted or approved by the Council? ~~Yes~~/No

3.3 Is the recommendation in accordance with the Council's approved budget? Yes/~~No~~

4.0 Other alternative options to be considered:

4.1 Other systems have been considered, however the system being recommended is most suitable in terms of linking into the Bombardier Flexity Tram braking system.

5.0 Council priority:

5.1 The relevant Council priority is

- “The economy: Maximising growth and opportunity across Blackpool”

6.0 Background information

6.1 Following the overturning of a tram on the Croydon network on 9 November 2016, RAIB issued a report with a number of recommendations for all tram networks. Blackpool have implemented, or in the process of implementing, all relevant recommendations with one remaining, which is Recommendation 4 as follows:

‘UK tram operators, owners and infrastructure managers should work together to research and evaluate systems capable of reliably detecting driver attention state and initiating appropriate automatic responses if a low level of alertness is identified. Such responses might include an alarm to alert the tram driver and/or the application of the tram brakes. The research and evaluation should include considering use of in-cab CCTV to facilitate the investigation of incidents. If found to be effective, a time-bound plan should be developed for such devices to be introduced onto UK tramways (paragraph 471).’

6.2 The intent of this recommendation is to reduce the likelihood of serious accidents due to tram drivers becoming inattentive because of fatigue or other effects.

6.3 Blackpool Bombardier Flexity trams are fitted with a driver vigilance device (DVD) This device requires the driver to lift and drop the traction brake controller (TBC) which detects physical activity and is monitoring cab controls.

6.4 If the driver fails to lift and drop the (TBC) for a pre-defined time or distance of travel, an audio / visual alert is triggered. If the driver does not respond to this alert by operating appropriate cab controls, then the system will automatically apply the brakes.

6.5 In line-of-sight systems the driver is critical for system safety, and therefore, the competence and attention of that driver is critical to safe operation.

6.6 Although Blackpool’s trams are fitted with a (DVD) drivers vigilance device the (LRSSB) Light Rail Safety & Standards Board guidance suggests that there is a likelihood that the driver can reset the device whilst being inattentive. This can be caused by a subconscious reflex response to the alert. This is sometimes known as habituation.

6.7 There are several documented incidents in heavy rail where this type of system has failed to detect inattention and investigation into these incidents has cited habituation as the reason for system failure. (The driver is habitually resetting the device when alerted, and this has become a subconscious activity that can be performed automatically even when the driver is

inattentive). The habituation issue is therefore considered as a weakness in this type of system.

- 6.8 It is therefore, recommended that to reduce the likelihood of drivers developing reflex responses to alerts, a modification of the traction brake control system is purchased and implemented, which effectively strengthens the drivers vigilance system.
- 6.9 As a result of this recommendation the Office of Road and Rail (ORR) and RAIB expect reasonably practicable safety improvements to be made. The focus must be on improving control of risk and preventing further potential accidents.
- 6.10 The safety benefits resulting from this measure will only be realised if an accident happens. However, if we are to compare the cost (financial and reputational) against one fatal or serious accident the cost would seem inexpensive.
- 6.11 Does the information submitted include any exempt information? No

7.0 List of Appendices:

7.1 None.

8.0 Financial considerations:

8.1 The cost of the system is £100k.

9.0 Legal considerations:

9.1 To consider and implement Recommendation 4 of the RAIB report into the 2016 Croydon overturning tram accident, which is applicable to all UK tram operators.

10.0 Risk management considerations:

10.1 It is imperative that the driver vigilance system is strengthened to reduce the likelihood of failure of the system by driver habituation.

11.0 Equalities considerations:

11.1 Creating a safer tramway for all.

12.0 Sustainability, climate change and environmental considerations:

12.1 The system future proofs the tram operation.

13.0 Internal/external consultation undertaken:

13.1 Rail Accident Investigation Board and Office of Road and Rail.

14.0 Background papers:

14.1 None.

15.0 Key decision information:

15.1 Is this a key decision? No

15.2 If so, Forward Plan reference number:

15.3 If a key decision, is the decision required in less than five days? N/A

15.4 If **yes**, please describe the reason for urgency:

16.0 Call-in information:

16.1 Are there any grounds for urgency, which would cause this decision to be exempt from the call-in process? No

16.2 If **yes**, please give reason: N/A