



Office of
Transport Safety
Investigations

RAIL SAFETY INVESTIGATION

Interim Factual Statement

Sydney Light Rail Vehicles Underframe Structural Fractures
Sydney, NSW

29 October 2021



About the Office of Transport Safety Investigations (OTSI)

OTSI is an independent NSW authority which contributes to the safe operation of bus, ferry and rail passenger and rail freight services in NSW by investigating safety incidents and accidents and transport safety risks, identifying system-wide safety issues and sharing lessons with transport operators, regulators and other stakeholders.

OTSI is empowered under the *Transport Administration Act 1988* to investigate rail, bus, and ferry accidents and incidents in accordance with the provisions of the *Passenger Transport Act 1990* and *Marine Safety Act 1998*. It also conducts rail investigations on behalf of the Australian Transport Safety Bureau under the *Transport Safety Investigation Act 2003* (Cth).

OTSI investigations are independent of regulatory, operator or other external entities. OTSI investigates using a 'no-blame' approach to understand why an occurrence took place and to identify safety factors that are associated with an accident and incident, to make recommendations or highlight actions that transport operators, regulators and government can take to prevent recurrence and improve safety.

Evidence obtained through an OTSI investigation cannot be used in any subsequent criminal or disciplinary action. However, a regulator can undertake its own investigation into an incident OTSI has investigated and coronial inquiries can obtain access to OTSI information.

OTSI does not investigate all transport safety incidents and accidents but focuses its resources on those investigations considered most likely to enhance bus, ferry or rail safety.

Many accidents result from individual human or technical errors which do not involve safety systems so investigating these in detail may not be justified. In such cases, OTSI will not generally attend the scene, conduct an in-depth investigation or produce an extensive report.

OTSI may request additional information from operators or review their investigation reports which may lead to a number of actions, such as the release of a Safety Advisory or Alert to raise industry awareness of safety issues and action.

OTSI investigators normally seek to obtain information cooperatively when conducting an investigation. However, where it is necessary to do so, OTSI investigators may exercise statutory powers to conduct interviews, enter premises and examine and retain physical and documentary evidence.

Incident overview

On 30 September 2021 the Sydney light rail vehicle (LRV) maintainer (Alstom) identified some fractures of Urbos LRVs operating on Sydney's Inner West light rail network. The fractures were identified around the LRV's bogie rotational bump stops.

Alstom subsequently carried out a fleet-wide survey of the Construcciones y Auxiliar de Ferrocarriles (CAF) manufactured vehicles as a consequence of the safety issue. Additional vehicles were identified with fractures in the same location.

Further inspections were then carried out on a wider area of the LRV's underframe. These inspections identified fractures had occurred in the underframe structure which supports the LRV's bogie. As a consequence of identifying those fractures, and similar fractures in additional LRVs, the fleet was grounded.

The maintainer is now (as of 3 November 2021) in the process of undertaking an engineering assessment into the repair and reinstatement of the LRVs. The safety issue has been communicated to other LRV operators in NSW and other states. To date, no similar fractures have been identified by those operators.

Scope of the investigation

NSW Minister for Transport and Roads, the Hon. Rob Stokes, MP requested that OTSI investigate this matter, pursuant to Section 46 of the *Passenger Transport Act 1990* which enables the Minister to require the Chief Investigator to investigate and report on any transport accident or incident that may affect the safe provision of railway operations.

The Chief Investigator initiated an investigation which includes, but is not limited to:

- A review of the design, approval and acceptance process relating to the LRV bogie and underframe.
- A review of the LRV bogie and underframe maintenance inspection regime.
- A review of similar LRV incidents.
- The response to the safety issue by relevant parties.

The Chief Investigator has required the Investigator in Charge (IIC) to:

- Identify the factors, both primary and contributory, which led to the incident
- Determine whether the incident might have been anticipated and the effectiveness of any controls that were in place to manage the related risks
- Advise on any matters arising from the investigation that would enhance the safety of rail operations.

The IIC will consult with all Directly Involved Parties (DIPs) during the course of the investigation.

Publication of the investigation report

OTSI produces a written report on every investigation for the Minister for Transport and Roads, as required under section 46BBA of the *Passenger Transport Act 1990*.

Investigation reports strive to reflect OTSI's balanced approach to the investigation, explaining what happened and why in a fair and unbiased manner. All DIPs will be given the opportunity to comment on the draft investigation report.

The final investigation report will be provided to the Minister for tabling in both Houses of the NSW Parliament in accordance with section 46D of the *Passenger Transport Act 1990*. The Minister is required to table the report within seven days of receiving it.

Following tabling, the report is published on the OTSI website and information on the safety lessons promoted to relevant stakeholders. The published report will replace this Interim Factual Statement.