



Transport Accident
Investigation
Commission

Watchlist 2024

The road-rail interface

What is the problem?

Safety for heavy vehicles at railway level crossings is being compromised because of ambiguities in the responsibilities between the road and rail authorities; and because the implications for the road-rail interface are sometimes not recognised when changes are made to vehicle technology or rail infrastructure. Even when accidents cause limited train damage or minor injuries, such events can be traumatic for all involved.

What is the solution?

The ideal solution is the separation of road and rail infrastructure. But in many cases, this is not economically practical. In the absence of physical separation, the regulator, business operators, and road controlling authorities need to work closely to ensure safety through other means. The interface between rail and surrounding infrastructure must provide the appropriate level of protection for road vehicles, trains, and those on board.

Transport Accident Investigation Commission inquiries have highlighted safety improvements that could have been, or should be, made for road vehicles at level crossings. We have found ambiguities in who is responsible for the safety at the interface of the roading and rail networks, a particular concern in metropolitan areas with growing patronage, and growing frequency of trains. Other inquiries have shown that changes to rules and standards for road vehicles such as permissible lengths and clearances are incompatible with the conditions at some level crossings such as sight lines and road camber. The potential remains for serious accidents to continue to occur as a result of these problems identified through our inquiries.

How is safety at the road-rail interface managed?

When vehicles use level crossings, the potential exists for serious accidents to occur. Safety measures depend on infrastructure, technology, systems, and users working together. For this to happen, the responsibilities of the regulator, business operators, and road controlling authorities – and how they co-operate – must be clear.

What recommendations have we made?

A train colliding with a road vehicle, especially a heavy vehicle, is a serious safety issue. The Commission has inquired into several such collisions, sometimes fatal. We've made findings and recommendations about the need for collective action and clear responsibilities to ensure the design of rail infrastructure keeps pace with changes in vehicle technology, sight lines at level crossings remain clear, and there are effective traffic management plans in place where there are road works close to a level crossing.

Recommendations have been made:

- in May 2016, to Waka Kotahi NZ Transport Agency to work with KiwiRail and all road controlling authorities to ensure assessments of rail level crossings include a measure of the road profile and compatibility with the allowable dimensions for long and low road vehicles¹ (we made similar recommendations in earlier reports²)
- in December 2018, to Waka Kotahi NZ Transport Agency, KiwiRail, and Local Government New Zealand to address matters related to sighting distances and control of vegetation around public road level crossings (we found that the legislation needed to be clearer on the allocation of responsibilities)³
- in October 2021, to the Secretary for Local Government NZ and Waka Kotahi NZ to ensure traffic management plans identify any rail crossings within the vicinity of the proposed work and that the rail access providers have been consulted to ensure that any additional safety requirements in relation to the road/rail interface are met⁴
- in December 2021 to Waka Kotahi NZ Transport Agency to review the Road User Rules 2004 in consultation with the rail industry to assess its adequacy regarding the risks posed by level crossings in close proximity to road intersections⁵
- in December 2021, to KiwiRail and Waka Kotahi NZ Transport Agency to examine how the selection of level crossings for upgrades can be more accurately prioritised⁶
- in September 2023, to KiwiRail, regarding risks posed by disconnecting level-crossing protections⁷
- in March 2024, to KiwiRail (two recommendations) to assess the risks of regular propelling movements, including assessing locomotive cab ergonomics; and to ensure its Permit-to-Enter system enables safety-critical work at level crossings to support road controlling authorities in maintaining level crossings.⁸

Why is the Commission concerned?

The Commission acknowledges the progress that recipients of recommendations have made towards implementing the Commission's recommendations.

The Commission is concerned that we continue to see accidents involving heavy road vehicles at level crossings. We consider the predicted increase in road traffic and the expansion of the rail network in metropolitan areas requires a proportionate effort on the part of the responsible authorities to collaborate in managing the safety risks.

References to reports and recommendations

- ¹ RO-2014-101: Collision between heavy road vehicle and the Northern Explorer passenger train, Te Onetea Road level crossing, Rangiriri, 27 February 2014
[RO-2014-101 | TAIC](#)
Safety recommendation 013/16
- ² RO-2011-104: Freight Train 261 collision with bus, Beach Road level crossing, Paekakariki, 31 October 2011
[RO-2011-104 | TAIC](#)
Urgent safety recommendation 030/11, Safety recommendation 031/11
- RO-2002-113 Passenger express Train 700 TranzCoastal and petrol tanker, near collision, Vickerman Street level crossing, near Blenheim, 24 April 2002
[RO-2002-113 | TAIC](#)
Safety recommendation 036/02
- RO-1996-106 Express passenger train T903, collision with motor vehicle, Templeton, Canterbury, 17 May 1996
[RO-1996-106 | TAIC](#)
Safety recommendation 064/96
- ³ RO-2017-105: Collision between freight Train 353 and heavy motor vehicle, Lambert Road level crossing, near Kawerau, 6 October 2017
[RO-2017-105 | TAIC](#)
Safety recommendations 031/18, 032/18, 033/18, 034/18
- ⁴ RO-2019-108: Level crossing collision, Piako Road, Morrinsville, 7 December 2019
[RO-2019-108 | TAIC](#)
Safety recommendations 006/21, 007/21
- ⁵ RO-2020-103: Collision between bus and locomotive, Clevely Line level crossing, Bunnythorpe, 16 September 2020
[RO-2020-103 | TAIC](#)
Safety recommendation 008/21
- ⁶ RO-2020-101: Level crossing collision, Mulcocks Road, Flaxton, 10 February 2020
[RO-2020-101 | TAIC](#)
Safety recommendation 012/21
- ⁷ RO-2022-103: KiwiRail W6 shunt and Metro (Go Bus) Route 60 bus, near miss at Selwyn Street level crossing, 8 August 2022
[RO-2022-103 | TAIC](#)
Safety recommendations 031/23 and 032/23
- ⁸ RO-2022-104: L1 shunt train and heavy goods vehicle, level crossing collision and derailment, Whangārei, 7 December 2022
[RO-2022-104 | TAIC](#)
Safety recommendations 001/24 and 002/24 (The Commission also gave notice of these recommendations to all road controlling authorities in New Zealand)
This safety concern was first published as a Watchlist item 2016 as part of another item and re-published in this form in 2024.

Te Kōmihana Tirohiro Aituā Waka

Transport Accident Investigation Commission

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The Transport Accident Investigation Commission is an independent Crown entity established to determine the circumstances and causes of accidents and incidents with a view to avoiding similar occurrences in the future rather than to ascribe blame to any person.