



Watchlist

Safety for pedestrians and vehicles using level crossings

What is the problem?

Safety for pedestrians and vehicles using 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 regulator, business operators, and road control authorities need to work closely to ensure the interface between rail and surrounding infrastructure provides the appropriate level of protection for pedestrians, road vehicles, trains, and those on board.

Commission investigations have highlighted safety improvements that could have been, or should be, made for road vehicles or pedestrians using level crossings. Recent inquiries have found ambiguities in who is responsible for the safety of pedestrians crossing rail lines, 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.

Background

When pedestrians or vehicles use level crossings, the potential exists for serious accidents to occur. Safety measures depend on infrastructure, technology, systems, and users working together. A change in one of these factors must take account of its effect on the others if safety is not to be compromised.

Safe pedestrian rail crossings

In early 2015, the Commission opened an inquiry into a pedestrian fatality at Morningside, a metropolitan railway station in Auckland.¹ There had been a previous fatality at this station and several near misses.

The investigation has highlighted how changes to the rail infrastructure can inadvertently compromise safety. The design of the existing pedestrian 'maze' at the station was constructed to force pedestrians to face in the direction of approaching trains before they turn and cross the tracks. Mazes are in place at many stations around the country. With increasing rail traffic at Morningside, signalling changes were made to allow trains to run in both directions along the tracks. The change means trains could now be approaching from behind pedestrians, so defeating the maze design.



The Commission found the process for assessing risk at pedestrian crossings is not keeping pace with the infrastructure changes and increasing patronage on metropolitan passenger trains. We issued urgent recommendations¹ to deal with three immediate safety issues:

- the lack of pedestrian protections at Morningside
- ambiguities about who is responsible for safety and control at the boundaries between station platforms and the rail corridor;
- the possibility that pedestrian safety at other busy stations is inadequate.

These issues need the regulator, business operators, and road control authorities to work together and for their responsibilities to be clear. We are advised that the Government is prioritising work on a new road safety strategy that will include consideration of interactions between road and rail. Pedestrians and road users also need to take responsibility for avoiding distractions, or failing to see, hear or respond to warning signals or trains. The needs of disabled users should always be considered.

Since the Commission issued the urgent recommendations, improvements have been made to pedestrian safety at Morningside Station, and the associated recommendation closed. In addition, a range of improvements (for example new signs and road markings) have been made at other stations in the Auckland metropolitan area.

The final report was released in August 2016. A further recommendation was issued to deal with the safety issue of pedestrian level crossings in provincial areas that do not fully conform with guidelines related to traffic control devices.

Safe vehicle crossings

The Commission has investigated several accidents where road-legal vehicles have become stuck on rail level crossings, or have been too long to clear a rail level crossing and then stop, as required, at an adjacent road intersection with the vehicle clear of the rail crossing. There is no routine procedure for measuring the profile or vertical alignment of the road at rail level crossings, which means there could be other level crossings in New Zealand on which low-slung, but nevertheless road-legal vehicles, could become stuck.



About 31% (418) of public level crossings on New Zealand's rail network have short stacking distances, with 23% (305) rated as high risk. At level crossings with a short stacking distance, a long vehicle, even though it complies with road regulations, is unable to clear the level crossing when stopping at an adjacent road intersection. Similarly, the profile (the change of rate in gradient) of level crossings may not be compatible with vehicles that have low, albeit legal, ground clearance. A train colliding

with a heavy vehicle is a serious safety issue.

As a result of its inquiries into a train and truck collision near Rangiriri in 2014² the Commission recommended that the NZ Transport Agency work with KiwiRail and all road controlling authorities to ensure rail level crossing assessments include a measure of the road profile and compatibility with the allowable dimensions for long and low road vehicles. It was possible that a truck would be unable to complete a successful crossing after stopping at the crossing and confirming it was clear due to permitted train speed and available sight lines. We have made similar recommendations in earlier reports.³ An urgent recommendation made in relation to a crossing (at Beach Road in Paekakariki) has been closed.³

The Commission acknowledges the progress the NZ Transport Agency and KiwiRail have made towards implementing the recommendations. We also acknowledge the work being done by those organisations and TrackSAFE NZ to raise awareness of safe behaviour around the rail network. We are aware that, with nearly 1,400 public road level crossings across the country,⁴ full implementation entails considerable resource. The ideal solution – the removal of level crossings – will not always be practical or economically viable. Nevertheless, 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 manage the safety risks. We will continue to monitor progress in these matters.

References

- ¹ Transport Accident Investigation Commission Report RO-2015-101: *Pedestrian fatality, Morningside Drive level crossing, West Auckland, 29 January 2015*
<http://www.taic.org.nz/inquiry/ro-2015-101>
Urgent safety recommendations 010/15 (closed), 012/15 (open), 013/15 (open)
Open safety recommendation 018/16
- ² Transport Accident Investigation Commission Report RO-2014-101: *Collision between heavy road vehicle and the Northern Explorer passenger train, Te Onetea Road level crossing, Rangiriri, 27 February 2014*
<http://www.taic.org.nz/inquiry/ro-2014-101>
Open safety recommendation 013/16
- ³ Transport Accident Investigation Commission Report RO-2011-104: *Freight Train 261 collision with bus, Beach Road level crossing, Paekakariki, 31 October 2011*
<http://www.taic.org.nz/inquiry/ro-2011-104>
Closed urgent safety recommendation 030/11
Open safety recommendation 031/11
- Transport Accident Investigation Commission Report RO-2002-113 *Passenger express Train 700 TranzCoastal and petrol tanker, near collision, Vickerman Street level crossing, near Blenheim, 24 April 2002*
<http://www.taic.org.nz/inquiry/ro-2002-113>
Closed safety recommendation 036/02
- Transport Accident Investigation Commission Report RO-1996-106 *Train 903, collision with motor vehicle, Templeton, Canterbury, 17 May 1996*
<http://www.taic.org.nz/inquiry/ro-1996-106>
Closed safety recommendation 064/96
- ⁴ Supplied by KiwiRail, July 2018

Version history

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Consulted with: Ministry of Transport, New Zealand Transport Agency, KiwiRail, Transdev, Auckland Transport, Greater Wellington Regional Council.

Updated: August 2017

Updated content: release of the report into the pedestrian fatality at Morningside Station (inquiry 15-101); closure of recommendations.

Consulted with: Ministry of Transport, New Zealand Transport Agency, KiwiRail, Transdev, Auckland Transport, Greater Wellington Regional Council.

Updated: September 2018

Updated content: Number of level crossings that have short stacking distances. The numbers given are as supplied by KiwiRail in August 2018. KiwiRail has redefined the criteria for those level crossings that now come within the classification of 'high-risk stacking distance'. The new definition has resulted in an increased number of level crossings falling into this category.

Consulted with: Ministry of Transport, New Zealand Transport Agency, KiwiRail, Transdev, Auckland Transport, Greater Wellington Regional Council.

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