



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 train crew and passengers.

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 recommendations² 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. 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. In addition, a range of improvements (for example new and road markings) have been made at other stations in the Auckland metropolitan area.

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 19% (264) of level crossings on New Zealand's rail network have short stacking distances. At these level crossings 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 2014³ 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.⁴

We will continue to monitor progress in these matters.

Version history

This Watchlist item was first published in October 2016.

The following organisations were consulted during its development: Ministry of Transport, NZ Transport Agency, KiwiRail, Transdev, Auckland Transport, Greater Wellington Regional Council.

References

- ¹ Transport Accident Investigation Commission open inquiry RO-2015-101 Rail pedestrian crossing, fatality, Morningside Station, 29 January 2015
- ² Transport Accident Investigation Commission
Urgent Recommendations RO-2015-101: Pedestrian fatality, Morningside Drive level crossing, West Auckland, 29 January 2015
<http://www.taic.org.nz/LinkClick.aspx?fileticket=ixbzWWtOa54%3D&tabid=36&mid=613&language=en-US>
- ³ Transport Accident Investigation Commission Report 14-101: 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/ReportsandSafetyRecs/RailReports/tabid/85/ctl/Detail/mid/483/InvNumber/2014-101/Page/0/language/en-US/Default.aspx?SkinSrc=%5BG%5Dskins%2FtaicRail%2Fskin_rail
Open safety recommendation 013/16
- ⁴ Transport Accident Investigation Commission Report 11-104: Freight Train 261 collision with bus, Beach Road level crossing, Paekakariki, 31 October 2011
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- Transport Accident Investigation Commission Report 02-113 Passenger express Train 700 TranzCoastal and petrol tanker, near collision, Vickerman Street level crossing, near Blenheim, 24 April 2002
http://www.taic.org.nz/RailReports/tabid/85/ctl/Detail/mid/483/InvNumber/2002-113/Default.aspx?SkinSrc=%5BG%5Dskins%2FtaicRail%2Fskin_rail
Closed safety recommendation 036/02
- Transport Accident Investigation Commission Report 96-106 Train 903, collision with motor vehicle, Templeton, Canterbury, 17 May 1996
http://www.taic.org.nz/RailReports/tabid/85/ctl/Detail/mid/483/InvNumber/1996-106/Default.aspx?SkinSrc=%5BG%5Dskins%2FtaicRail%2Fskin_rail
Closed safety recommendation 064/96

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