



Australian Government

Australian Transport Safety Bureau

Level crossing collision between a track machine consist and a road vehicle

Nicholson Street, Dalby, Queensland, on 18 February 2025



ATSB Transport Safety Investigation Discontinuation Notice

Rail Occurrence Investigation (Short)

RO-2025-001

Discontinuation notice – 24 June 2025

Cover photo: Queensland Rail

Released in accordance with section 25 of the *Transport Safety Investigation Act 2003*

Publishing information

Published by: Australian Transport Safety Bureau
Postal address: GPO Box 321, Canberra, ACT 2601
Office: 12 Moore Street, Canberra, ACT 2601
Telephone: 1800 020 616, from overseas +61 2 6257 2463
Accident and incident notification: 1800 011 034 (24 hours)
Email: atsbinfo@atsb.gov.au
Website: www.atsb.gov.au

© Commonwealth of Australia 2025



Ownership of intellectual property rights in this publication

Unless otherwise noted, copyright (and any other intellectual property rights, if any) in this publication is owned by the Commonwealth of Australia.

Creative Commons licence

With the exception of the Commonwealth Coat of Arms, ATSB logo, and photos and graphics in which a third party holds copyright, this report is licensed under a Creative Commons Attribution 4.0 International licence.

The CC BY 4.0 licence enables you to distribute, remix, adapt, and build upon our material in any medium or format, so long as attribution is given to the Australian Transport Safety Bureau.

Copyright in material used in this report that was obtained from other agencies, private individuals or organisations, belongs to those agencies, individuals or organisations. Where you wish to use their material, you will need to contact them directly.

Acknowledgement of Country and Traditional Owners

The Australian Transport Safety Bureau acknowledges the traditional owners of country throughout Australia, and their continuing connection to land, sea and community. We pay our respects to them and their cultures, and to elders both past and present.

Discontinuation notice

Section 21 (2) of the *Transport Safety Investigation Act 2003* (TSI Act) empowers the ATSB to discontinue an investigation into a transport safety matter at any time. Section 21 (3) of the TSI Act requires the ATSB to publish a statement setting out the reasons for discontinuing an investigation. The statement is published as a report in accordance with section 25 of the TSI Act, capturing information from the investigation up to the time of discontinuance.

Overview of the investigation

The occurrence

On 18 February 2025, the ATSB was notified of and subsequently commenced an investigation into a level crossing collision between a road vehicle and a track machine consist at Dalby, Queensland.

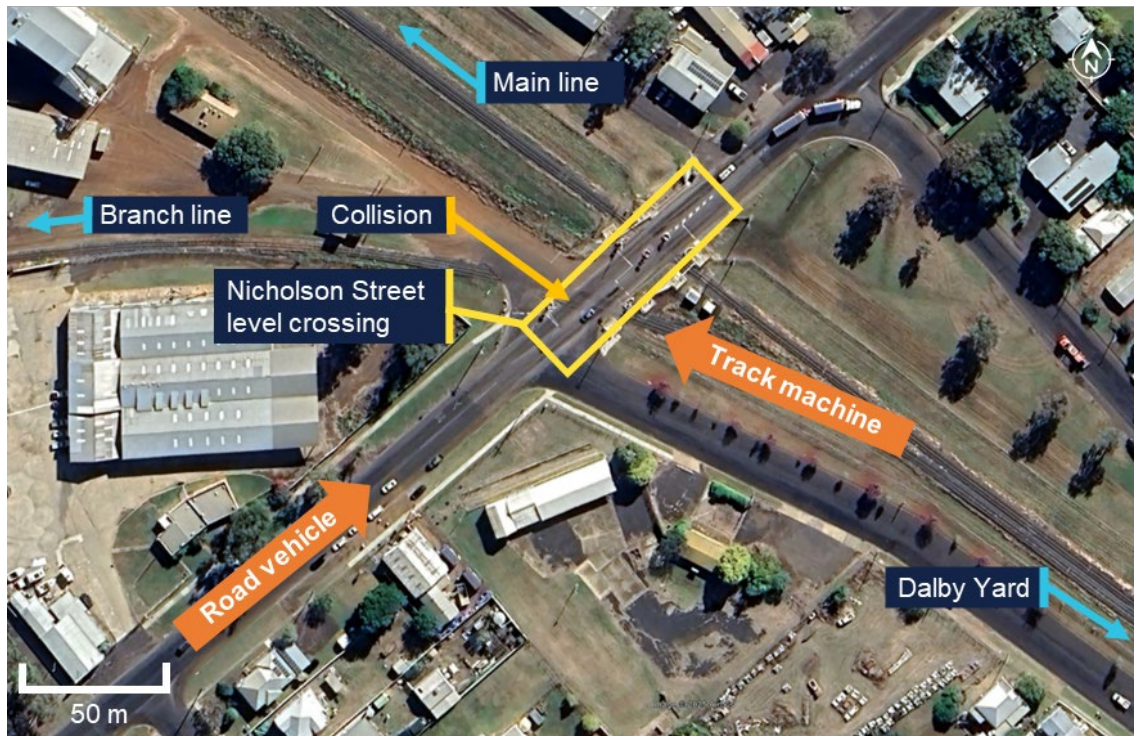
Just before midday, a self-propelled track machine consist was being operated between Dalby and Meandarra. This rail vehicle, number ZG86 and operated by Queensland Rail, consisted of a split head ballast tamper and a ballast regulator. It departed the Angle Siding in Dalby Yard at around 1152 local time. After several minutes of shunting to reach the western yard limit,¹ the track machine consist was granted a proceed authority² to depart Dalby Yard at 1200.

The track machine consist then travelled north-west through a dual-track active level crossing with Cunningham Street, and a single-track active level crossing with the Bunya Highway. A third active level crossing with Nicholson Street was located around 450 m further along the line. The Nicholson Street level crossing had a different layout to nearby level crossings, as it consisted of dual single-track active level crossings 30 m apart in the same crossing square (Figure 1).

¹ Yard Limit: a defined area of track where rail traffic movements are authorised and managed by a nominated network control officer or other suitably qualified employee, and whose boundaries are marked by trackside signage and, where relevant, labelling on signal panel displays. Train movements in these areas can be co-ordinated through fixed signal routes, hand signals, or verbal/written authorities.

² Proceed Authority: authorises rail traffic to enter and occupy a section or block and proceed in the forward direction.

Figure 1: Layout of the Nicholson Street level crossing



Source: Google Earth, annotated by the ATSB

To reach Meandarra, the track machine consist had to travel on the Glenmorgan branch line. Just after it turned out onto the branch line, the flashing red warning lights for the branch line crossing at Nicholson Street automatically activated. The track machine consist then entered the Nicholson Street level crossing at 1204.

At the same time, a road vehicle was also approaching the Nicholson Street level crossing from the south-west. The driver of the road vehicle reported they were experienced and familiar with the area and the Nicholson Street level crossing.

The most recent Australian Level Crossing Assessment Model assessment from November 2024 noted that the minimum warning time for road users of an approaching train on the branch line was 23 seconds. The speed limit for rail vehicles through the Nicholson Street level crossing was 25 km/h. The assessment also reported that the level crossing and its associated controls were visible to road users from up to 500 m away.

As the track machine consist approached the Nicholson Street level crossing, it was travelling at an average speed of around 18 km/h. At this lower speed, the available warning time to road users to slow down and stop once the level crossing lights activated increased to over 30 seconds.

The track machine consist was equipped with forward-facing video cameras and equipment that recorded its position. The onboard video from the track machine captured the road vehicle as it approached the level crossing, and showed that the vehicle was not slowed sufficiently to stop at the stop line adjacent the flashing lights.

From the video evidence, the vehicle was calculated to have been travelling near the speed limit of 60 km/h as it approached and crossed the level crossing stop line.

At this moment, the track machine consist was already halfway across Nicholson Street and about to pass in front of the road vehicle. The video showed the road vehicle slowing down significantly after crossing the stop line, however, it did not stop and consequently collided with the track machine.

The front of the road vehicle sustained significant damage from impacting the front left side of the track machine. The split head tamper at the front of the consist sustained minor damage and the operating crew were uninjured. The driver of the road vehicle was also uninjured.

Level crossing information

The split level crossings at Nicholson Street were a consequence of the track layout. A branch line to Glenmorgan deviated from the mainline around halfway between the Bunya Highway and Nicholson Street level crossings, and both tracks then crossed Nicholson Street separately.

The mainline crossing on Nicholson Street had flashing warning lights and half-boom barriers as active protection, whereas the branch line crossing only had flashing warning lights and did not have booms.

The difference in active controls between the mainline and branch line crossings was likely due to:

- the proximity of the side streets which intersected with Nicholson Street near the level crossing
- the lower frequency of trains on the branch line compared to the mainline
- the direct traffic control³ safeworking system, which prevented more than one train movement in any direction across Nicholson Street at any one time.

As a result, only one of the 2 level crossings would activate with the presence of a train, and the other crossing would remain open for road traffic.

ATSB observations

Following the collision, the ATSB spoke with the involved parties, reviewed operational information from the rail infrastructure manager, reviewed recorded data and video recordings from the track machine consist, and assessed the design, condition, and operation of the level crossing. The ATSB's review of the evidence collected identified that:

- For undetermined reasons, the road vehicle driver did not respond to the active controls as they approached the crossing.
- The road vehicle driver braked heavily upon seeing the rail vehicle but was unable to stop in time.
- The rail vehicle driver did not mishandle or overspeed the track machine consist.
- There were no mechanical factors which influenced the operation of either vehicle.
- There were no environmental factors which influenced the operation of either vehicle.

³ Direct traffic control: an absolute block safeworking system used to control the movement of trains in non-signalled territory. This prevents more than one train being authorised into a defined section or block at any one time.

- The lights on the front of the track machine consist were turned on before the consist departed the siding.
- The horn on the track machine consist was sounded when it entered each level crossing.

The ATSB's analysis of the Nicholson Street level crossing found that:

- The level crossing operated normally prior to the collision.
- The warning lights for the Glenmorgan branch line were activated and visible at the time of the collision.
- The design and operation of the level crossing eliminated the risk of short stacking⁴ and road vehicle encroachment, with the 2 level crossings unable to be activated simultaneously.
- The active controls at the level crossing were compliant with the relevant Australian Standards.
- There was no evidence of the level crossing being poorly maintained.
- There were no obstructions to visibility or sightlines along the road corridor, which prevented road users from seeing, interpreting, and responding to the active level crossing controls.

Reasons for the discontinuation

Based on a review of the available evidence, the ATSB considered it was unlikely that further investigation would identify any systemic safety issues or important safety lessons. Consequently, the ATSB has discontinued this investigation.

The evidence collected during this investigation remains available to be used in future investigations or safety studies. The ATSB will also monitor for any similar occurrences that may indicate a need to undertake a further safety investigation.

⁴ Short stacking: when part of a vehicle, which is legally permitted to use the road, remains on the crossing while stopped at an intersection to give way to traffic on a priority road located beyond the crossing.