



Australian Government
Australian Transport Safety Bureau

Level crossing collision between passenger train 7MA8 and a dual cab utility

Inverleigh, Vic | 31 August 2013



Investigation

ATSB Transport Safety Report
Rail Occurrence Investigation
RO-2013-023
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Addendum

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Safety summary

What happened

At about 1009 on 31 August 2013, passenger train 7MA8, known as 'The Overland', was travelling from Melbourne to Adelaide when it collided with a Holden Rodeo dual cab utility on the Mahers Road level crossing at Inverleigh, Victoria.

The sole occupant of the utility was seriously injured and transferred to Royal Melbourne Hospital. The locomotive crew suffered from shock, but none of the train's 103 passengers were injured.

What the ATSB found

The ATSB's investigation found that the driver of the utility was travelling along a maintenance access track adjacent to the railway before he turned into Mahers Road. As a result, he was provided with no warning of the approaching train.

The investigation also found that, at some time in the past, the railway property boundary fence had been removed, thereby providing local vehicle access along the railway maintenance track. As a result, over time and with regular use, the false perception that the maintenance track was part of Gallagher Road was created and reinforced.

Since the maintenance access track was not a public road, neither the ARTC nor the Golden Plains Shire had identified a need to provide traffic control.

What's been done as a result

The Australian Rail Track Corporation and the Golden Plains Shire have advised that they will work together to permanently isolate the rail corridor from Gallagher Road.

Safety message

This incident highlights the need for road and rail authorities to work together in maintaining the integrity of fences and structures used to exclude public access to the railway corridor.

The occurrence also highlights the need for drivers of motor vehicles to be vigilant at railway level crossings.

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The occurrence

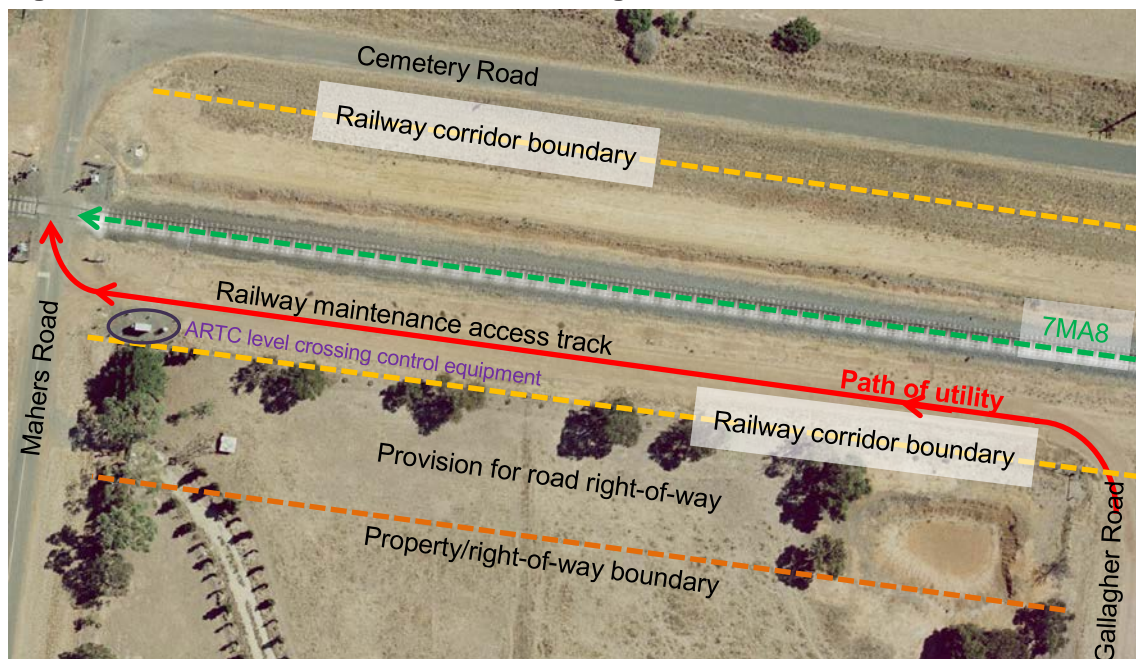
At 0808¹ on 31 August 2013, passenger train 7MA8 departed Southern Cross Station Melbourne, Victoria, bound for Adelaide, South Australia. The train travelled southward passing through North Geelong at 0946, before heading west.

At 1008:38, as the train approached the Mahers Road level crossing at Inverleigh (about 27 km west of North Geelong), the level crossing flashing lights and bells began to operate. Seven seconds later, the boom barriers also began to operate.

At 1008:46, when the train was about 455 m from the level crossing, the driver sounded the train's horn. The train was travelling at a speed of 78 km/h and its headlight was illuminated.

As the train approached the level crossing, the train crew observed a Holden Rodeo dual cab utility (utility) travelling west along the unsealed maintenance access track adjacent to the railway (Figure 1).

Figure 1: Aerial view Mahers Road level crossing



Source: VicTrack

At 1009:01, when the train was about 116 m from the level crossing and travelling at a speed of 84 km/h, the train driver again sounded the horn. While the section of track permitted a line speed of 115 km/h, the train had just traversed a temporary speed restriction and its speed was gradually being increased.

The train crew observed the utility continue along the access track, it then entered Mahers Road and turned into the lowered level crossing boom barrier, striking the end of the boom. The utility then came to a stand fouling the railway line.

At 1009:06, the train driver made an emergency brake application, but the train could not be stopped in time and collided with the front of the utility. The utility was spun around and it came to a rest on the side of the track. The train stopped about 370 m beyond the level crossing.

¹ The 24-hour clock is used in this report. Local time was Australian Eastern Standard Time (EST), UTC +10 hours.

The train crew notified the Australian Rail Track Corporation (ARTC) network control centre in Adelaide and the message was passed on to emergency services who attended shortly after.

The sole occupant of the utility was seriously injured and transferred to Royal Melbourne Hospital. The locomotive crew suffered from shock, but none of the train's passengers were injured.

The locomotive was damaged, but it was temporarily repaired and the train was allowed to advance to Barwon Park (about 5 km west of Inverleigh) where the locomotive was exchanged.

At 1426, the train departed Barwon Park. It resumed its journey to Adelaide and was running about 4 hours behind schedule.

By 1837, the Mahers Road level crossing equipment had been repaired and the crossing reopened.

Context

Train 7MA8

The train, known as 'The Overland', was a passenger service operated by Great Southern Rail (GSR) that ran twice a week between Melbourne and Adelaide.² The train consisted of one locomotive (NR70) hauling eight carriages with a total length of 215 m and a mass of 535 t. There were 103 passengers and 7 staff on board.

Train handling

Based on an analysis of the available evidence, the handling of the train is considered to have been appropriate and within operational requirements. Therefore, train handling is not considered to be a factor in the collision.

Gallagher Road

Gallagher Road is a local unsealed road located about 140 m east of, and running parallel to, Mahers Road. According to the Department of Planning and Community Development Victoria map of land titles, the road terminates at the railway property boundary. There was provision for a nearby road right-of-way between Gallagher Road and Mahers Road to the south of the railway corridor boundary (Figure 1). However, a road had not been constructed on the right-of-way.

The council responsible for the local roads, Golden Plains Shire, listed the right-of-way as an unmade road, meaning that it was not a public road under the provisions of the council's Road Management Plan 2013.

The railway access track

The road used by the utility, known locally as the 'Gallagher Road Extension' (Figure 1) was, in fact, a railway maintenance access track located entirely within the railway corridor on land leased by the Australian Rail Track Corporation (ARTC). Nevertheless, many commercial mapping providers, including VicRoads, had incorrectly identified the maintenance access track as a road.

Examination of the site after the collision established that although the maintenance access track was not a public road it was regularly used by local traffic to gain access between Gallagher Road and Mahers Road (Figure 2 and Figure 3).

There were also coils of fencing wire and remnants of concrete posts found near the junction of Gallagher Road and the railway property boundary (Figure 4). This indicates that the railway corridor had at some point in time been fenced off to prevent access to the railway corridor and the maintenance access track. The investigation could not determine when the boundary fence was removed.

² Pacific National supplied locomotives and locomotive crews under a commercial agreement.

Figure 2: Intersection of Gallagher Road and the access track



Source: The ARTC

Figure 3: View looking along the access track towards Mahers Road



Source: The ARTC

Figure 4: Discarded fencing

Source: The ARTC

Level crossing traffic control equipment

The level crossing traffic control devices installed at Mahers Road were consistent with the requirements of Australian Standard AS1742.7 *Manual of uniform traffic control devices, Part 7: Railway crossings*. The installation included flashing signals and boom barrier assemblies, road markings and advance warning signs on Mahers Road, and audible warning devices intended for pedestrians.

Since the maintenance access track was not a public road, there were no level crossing traffic control devices (flashing lights or road signage) provided.

Operation of the equipment at the time of the collision

The available data confirms that the equipment operated as designed.

ALCAM survey data

The Australian Level Crossing Assessment Model (ALCAM) is a computer based risk assessment model used as a basis for determining level crossing risk. While ALCAM takes into account over 70 factors for each level crossing, including local characteristics and controls, the risks associated with vehicles entering the crossing from the maintenance access track would not have been a factor considered as part of an ALCAM survey.

Safety analysis

Railway corridor access

Examination of the site after the collision established that, at some time in the past, the fence at the Gallagher Road/railway property boundary had been removed, thereby providing vehicle access along the railway maintenance track. As a result, over time and with regular use, the false perception that the maintenance track was part of Gallagher Road was created and reinforced.

Since the maintenance access track was not a public road, neither the ARTC nor the Golden Plains Shire had identified a need to provide traffic control devices for what was a private railway maintenance access track.

Utility driver actions

The driver was travelling along the maintenance access track with the intention of turning right onto Mahers Road and then traversing the crossing. As a result, it is likely that his attention would have been primarily directed towards observing any road traffic approaching from either the left or the right.

As the driver was approaching the intersection, the flashing signal and boom barrier assembly were at 90 degrees to his direction of travel and almost directly in front of the vehicle (Figure 5). Consequently, the boom barrier (when lowered) would have been pointing almost directly at the driver rather than being orientated across the driver's intended path. Similarly, the flashing lights were directed along Mahers Road rather than the maintenance track.

With the orientation of the traffic control devices set for Mahers Road, it is likely that the driver did not detect the lights or barrier and was unaware of the train approaching from behind. As the vehicle was turned onto Mahers Road and struck the tip of the boom barrier, the driver stopped. However, the vehicle was fouling the railway line and did not clear it in time to avoid the collision.

Figure 5: Approaching level crossing from access track



Source: The ARTC

Findings

From the evidence available, the following findings are made with respect to the collision between train 7MA8 and a dual cab utility at Inverleigh, Victoria, on 31 August 2013. These findings should not be read as apportioning blame or liability to any particular organisation or individual.

Safety issues, or system problems, are highlighted in bold to emphasise their importance.

A safety issue is an event or condition that increases safety risk and (a) can reasonably be regarded as having the potential to adversely affect the safety of future operations, and (b) is a characteristic of an organisation or a system, rather than a characteristic of a specific individual, or characteristic of an operating environment at a specific point in time.

Contributing factors

- The driver of the dual cab utility used the maintenance access track adjacent to the railway to travel between Gallagher Road and Mahers Road. He was travelling in the same direction as the train and was not aware it was approaching when he turned into Mahers road and the level crossing.
- **The boundary fence between the railway maintenance access track and Gallagher Road had been removed. As a result, over time and with regular use, the false perception that the maintenance access track was part of Gallagher Road was created and reinforced.**
[Safety issue]

Safety issues and actions

The safety issues identified during this investigation are listed in the Findings and Safety issues and actions sections of this report. The Australian Transport Safety Bureau (ATSB) expects that all safety issues identified by the investigation should be addressed by the relevant organisations. In addressing those issues, the ATSB prefers to encourage relevant organisations to proactively initiate safety action, rather than to issue formal safety recommendations or safety advisory notices.

All of the directly involved parties were provided with a draft report and invited to provide submissions. As part of that process, each organisation was asked to communicate what safety actions, if any, they had carried out or were planning to carry out in relation to each safety issue relevant to their organisation.

Boundary fence

Number:	RO-2013-023-SI-01
Issue owner:	The Australian Rail Track Corporation / Golden Plains Shire
Operation affected:	Rail: Infrastructure
Who it affects:	All local councils and track managers.

Safety issue description:

The boundary fence between the railway maintenance access track and Gallagher Road had been removed. As a result, over time and with regular use, the false perception that the maintenance access track was part of Gallagher Road was created and reinforced.

Proactive safety action taken by: Australian Rail Track Corporation

As a result of this occurrence, the ARTC has advised that they are taking the following safety actions:

The Australian Rail Track Corporation will commit to work with the Golden Plains Shire Council, as the relevant road authority and adjoining land owner to achieve the permanent closure of the section of Gallagher Road, which is located on the rail corridor. The safe and permanent closure of the roadway at the surveyed boundary requires signage to be installed on the main part of Gallagher Road; hence the safe and effective permanent closure is seen to be a joint project.

Action number: RO-2013-023-NSA-25

ATSB comment in response:

The ATSB is satisfied that the actions proposed by the Australian Rail Track Corporation, in combination with Golden Plains Shire, will adequately address this safety issue.

Proactive safety action taken by: Golden Plains Shire

The Golden Plains Shire council has advised that:

The Golden Plains Shire Council has recently updated its Road Management Plan and intends to revise its Register of Public Roads for the purpose of clarifying the status of roads currently classed as Unmade Roads. The revision will result in roads currently included on the register as a public road and classed as an unmade road, being removed from the register. The council will jointly work with the ARTC to isolate the rail reserve from the road reservation.

Action number: RO-2013-023-NSA-26

ATSB comment in response:

The ATSB is satisfied that the actions taken and proposed by Golden Plains Shire, in combination with the Australian Rail Track Corporation, will adequately address this safety issue.

Current status of the safety issue:

Issue status: Adequately addressed

General details

Occurrence details

Date and time:	31 August 2013 – 1009 EST	
Occurrence category:	Serious incident	
Primary occurrence type:	Collision	
Location:	Mahers Road, Inverleigh, Victoria	
	Latitude: 38° 6.265' S	Longitude: 144° 1.345' E

Train details

Train operator:	Great Southern Rail	
Registration:	7MA8 – The Overland	
Type of operation:	Passenger, 8 carriages, 1 locomotive, total weight 535 t, total length 215 m.	
Persons on board:	Crew – 7 (2 drivers, 5 on board)	Passengers – 103
Injuries:	Crew – nil	Passengers – nil
Damage:	Minor	

Sources and submissions

Sources of information

The sources of information during the investigation include:

- Golden Plains Shire
- The Australian Rail Track Corporation
- VicTrack
- Department of Planning and Community Development Victoria
- Great Southern Rail
- Pacific National
- Victoria Police

References

Australian Standard AS1742.7 *Manual of uniform traffic control devices, Part 7: Railway crossings*.

Submissions

Under Part 4, Division 2 (Investigation Reports), Section 26 of the *Transport Safety Investigation Act 2003*, the ATSB may provide a draft report, on a confidential basis, to any person whom the ATSB considers appropriate. Section 26 (1) (a) of the Act allows a person receiving a draft report to make submissions to the ATSB about the draft report.

A draft of this report was provided to Golden Plains Shire, the Australian Rail Track Corporation, Great Southern Rail, Victoria Police, Pacific National, and the utility driver.

Submissions were received from Golden Plains Shire, the Australian Rail Track Corporation, Great Southern Rail, Pacific National, and the utility driver. The submissions were reviewed and where considered appropriate, the text of the report was amended accordingly.

Australian Transport Safety Bureau

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory agency. The ATSB is governed by a Commission and is entirely separate from transport regulators, policy makers and service providers. The ATSB's function is to improve safety and public confidence in the aviation, marine and rail modes of transport through excellence in: independent investigation of transport accidents and other safety occurrences; safety data recording, analysis and research; fostering safety awareness, knowledge and action.

The ATSB is responsible for investigating accidents and other transport safety matters involving civil aviation, marine and rail operations in Australia that fall within Commonwealth jurisdiction, as well as participating in overseas investigations involving Australian registered aircraft and ships. A primary concern is the safety of commercial transport, with particular regard to fare-paying passenger operations.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and Regulations and, where applicable, relevant international agreements.

Purpose of safety investigations

The object of a safety investigation is to identify and reduce safety-related risk. ATSB investigations determine and communicate the factors related to the transport safety matter being investigated.

It is not a function of the ATSB to apportion blame or determine liability. At the same time, an investigation report must include factual material of sufficient weight to support the analysis and findings. At all times the ATSB endeavours to balance the use of material that could imply adverse comment with the need to properly explain what happened, and why, in a fair and unbiased manner.

Developing safety action

Central to the ATSB's investigation of transport safety matters is the early identification of safety issues in the transport environment. The ATSB prefers to encourage the relevant organisation(s) to initiate proactive safety action that addresses safety issues. Nevertheless, the ATSB may use its power to make a formal safety recommendation either during or at the end of an investigation, depending on the level of risk associated with a safety issue and the extent of corrective action undertaken by the relevant organisation.

When safety recommendations are issued, they focus on clearly describing the safety issue of concern, rather than providing instructions or opinions on a preferred method of corrective action. As with equivalent overseas organisations, the ATSB has no power to enforce the implementation of its recommendations. It is a matter for the body to which an ATSB recommendation is directed to assess the costs and benefits of any particular means of addressing a safety issue.

When the ATSB issues a safety recommendation to a person, organisation or agency, they must provide a written response within 90 days. That response must indicate whether they accept the recommendation, any reasons for not accepting part or all of the recommendation, and details of any proposed safety action to give effect to the recommendation.

The ATSB can also issue safety advisory notices suggesting that an organisation or an industry sector consider a safety issue and take action where it believes it appropriate. There is no requirement for a formal response to an advisory notice, although the ATSB will publish any response it receives.

Investigation

ATSB Transport Safety Report Rail Occurrence Investigation

Level crossing collision between passenger train ZMA8 and a dual cab utility, Inverleigh, Victoria, 31 August 2013

RO-2013-023

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