

Australian Government Australian Transport Safety Bureau

Track worker struck by a passenger train

near Laverton station, Victoria | 2 October 2015



Investigation

ATSB Transport Safety Report Rail Occurrence Investigation RO-2015-019 Final – 24 August 2016

Cover photo: Chief Investigator Transport Safety, Victoria

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Addendum

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Safety summary

What happened

On the morning of Friday 2 October 2015, track workers were assembling track-side in Laverton, Victoria. They planned to undertake dogspike removal works in preparation for re-sleepering of a section of track on the Altona Loop Line.

At around 0910, the supervisor for the works commenced marking the track to identify those dogspikes to be removed. He was working in a track crossover about 400 m on the Melbourne side of Laverton Railway Station. A lookout had been stationed for his protection.

At about 0916, a Metro Trains Melbourne suburban commuter train arrived at Laverton station, bound for Flinders Street Station in central Melbourne. After its scheduled stop, the train departed Laverton and approached the worksite. The lookout observed the train, warned workers of its approach and signalled to the driver that the track was clear. However, as the train took the crossover, the supervisor was foul of the track, and was struck by the train that was travelling at about 59 km/h. The supervisor suffered serious injuries.

What the ATSB found

The ATSB found that the track was accessed by the workgroup without an assessment of the risks and without the establishment of appropriate risk controls. This meant that not all in the group had a clear understanding of train movements that morning, nor was there a defined position of safety known to all the workers.

It was also concluded that on the train's approach, the train was given the all clear to proceed prior to the supervisor moving to a position of safety, clear of all tracks.

The supervisor was foul of the track when the train reached his location. It is probable that he expected the train to continue along an adjacent track, and not take the crossover towards his location.

The ATSB also found that there were several other breaches of safeworking procedures that, while not directly contributing to this accident, increased the risks associated with the workgroup's activities.

What's been done as a result

Since the incident, Metro Trains Melbourne has increased the frequency of audits of infrastructure worker compliance with safeworking procedures.

Safety message

Working in rail corridors carries significant risks that should be mitigated through adherence to established safeworking procedures.

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The occurrence

On the morning of Friday 2 October 2015, an infrastructure workgroup was dispatched to Laverton to remove dogspikes from sleepers on the Altona Loop Line (Figure 1). The dogspike removal was in preparation for re-sleepering works scheduled for the following Sunday night. Weather conditions were fine and visibility good.





Source: MTM Network Map -adapted by Chief Investigator, Transport Safety (Vic)

The dogspike removal works were to be conducted with trains continuing to run. The Friday had been declared a public holiday, resulting in train services operating to the Saturday timetable.

At about 0830¹ that morning, the Track Force Protection Coordinator² (TFPC) for these works arrived at the site. Soon after his arrival, the *Rail Safety Worksite Hazard Assessment / Pre-Start* form was made available for workers to sign. This form was normally signed after the site safety briefing, but some workers signed it on arrival, prior to the briefing.

At about 0832 the TFPC called Metro Trains Melbourne (MTM) Access Control Centre (Track Access³) and advised them of the works to be undertaken on track. The TFPC informed Track Access that he had completed the pre-start hazard assessment and had conducted the rail safety pre-work briefing (safety briefing) to all staff although this, in fact, had not yet been conducted. Track Access then confirmed that the TFPC intended to apply full track protection⁴, after which approval to access the track was granted.

¹ All times are Australian Eastern Standard Time (EST), UTC +10 hours.

² The person appointed to assess and implement worksite protection arrangements.

³ The role of the MTM Access Control Centre is to assist in safe and approved access for people performing infrastructure and facilities work within the danger zone.

⁴ Track force protection is a method of protecting work on track between rail traffic movements.

While members of the workgroup were assembling, two trains travelled through this section in the Up direction (towards Newport via Altona) and two in the Down direction (via Altona towards Werribee). The last of these trains passed at about 0904.

Soon after, the Infrastructure Works Supervisor (the supervisor) arrived on site. He walked onto the tracks, followed by the TFPC and other track workers. After a short discussion, the supervisor commenced marking the sleepers from which dogspikes were to be removed. The TFPC then returned to an assembly area to commence the safety briefing and on his way back called for lookout protection for the supervisor. A suitably qualified track worker responded to the call and positioned himself at stanchion 724, about 30 m from the supervisor (Figure 2). Other track workers remained in the area between the East Line and Back Platform Line (Figure 2).



Figure 2: Schematic diagram of the accident site and approximate location of track workers

Source: Chief Investigator, Transport Safety (Vic)

The suburban passenger train TD6822 had departed Werribee at about 0905 bound for Flinders Street. At about 0916 the train stopped at Laverton station Platform № 1. The lookout stated that, when he saw the train at the station he alerted the supervisor. He said the supervisor looked at the train, acknowledged the alert and continued marking the sleepers.

At about 0917⁵ the train driver sounded the train horn, then departed the station, travelling on the West Line (Figure 2). The lookout heard the horn and reported that he again informed the supervisor that the train was approaching. Two other track workers confirmed they heard the lookout's warning. The lookout stated that he saw the supervisor move away from the tracks and then he turned to observe the approaching train.

Shortly after departing Laverton station, the train driver noticed track workers between the East and Back Platform Lines. He sounded the horn again and shut-off power, letting the train coast. At that point, the lookout gave the train driver the 'All-Right' hand signal. The train had entered the cross-over by this time and the driver sounded the horn again. The lookout continued to observe the train.

⁵ Times are extracted from the train data logger.

The train driver was looking at the lookout as he passed. He then looked ahead and saw a track worker (the supervisor) crouched over and foul of the track. The train driver immediately sounded the horn and then made an emergency brake application. However, the train struck the supervisor. The train speed at that time was 59 km/h.

The supervisor suffered serious injuries. He was treated at the site by paramedics then taken to hospital for further treatment.

Context

Track layout

There are three broad-gauge and one standard-gauge tracks at this location. The broad-gauge West Line, East Line and Back Platform Line pass through Laverton Railway Station at platforms № 1, № 2 and № 3 respectively (Figure 3). The crossover from the West to the East Line commences about 330 m from the Melbourne-side of Laverton station. The Altona Loop Line is a further 300 m towards Melbourne.



Figure 3: Trackage including station platforms

Source: MTM signalling diagram adapted by Chief Investigator, Transport Safety

Train routing

Weekdays

On weekdays, the Up (to Melbourne) services were routed as follows:

- Trains originating from Werribee stopped at Laverton station, platform № 1, then travelled along the West Line direct to Newport bypassing the Altona Loop Line.
- Trains originating from Laverton travelled from platform № 3, via the Back Platform Line and Altona Loop Line to Newport.

On weekdays, the Down (from Melbourne) services were routed as follows:

- Trains travelling to Werribee would travel direct from Newport to Laverton station platform № 2, via the East Line, bypassing the Altona Loop Line.
- Trains terminating at Laverton would travel via the Altona Loop Line and Back Platform line, terminating at platform № 3.

During the morning peak, every third train in each direction was routed via the Altona Loop Line.

On weekends and public holidays:

On weekends and public holidays all services were routed via Altona.

• Trains from Werribee to Melbourne stopped at Laverton station platform № 1, then travelled along the West Line, crossing over to the East Line to enter the Altona Loop Line.

• Trains from Melbourne to Werribee arrived via the Altona Loop Line and Back Platform Line and stopped at Laverton station platform № 3, then crossed over to the East Line when past the station.

On the morning of Friday 2 October, a public holiday, trains were running to this Saturday schedule. Trains in both directions were running via Altona at 20 minute intervals.

The accident site

The incident occurred at the crossover from the West Line to the East Line (Figure 4). The supervisor was marking sleepers along the right-hand rail (in the direction of travel) of the crossover towards the East Line. The Lookout was about 30 m away at stanchion 724 between the East Line and the Back Platform Line. The distance between the East Line and the Back Platform Line was about five metres.



Figure 4: The accident site, viewed in the direction of train travel

Source: Public Transport Victoria - PASS Assets - annotated by Chief Investigator Transport Safety

Re-sleepering works

Metro Trains Melbourne (MTM) is the franchise operator of the Melbourne suburban train network. As part of its franchise agreement, MTM is required to maintain track infrastructure and retains infrastructure workgroups at several locations on the network. The workgroups conduct day-to-day maintenance and also undertake project upgrade works.

Re-sleepering (replacing worn sleepers) between Newport and Werribee was scheduled for each night from 4 to 7 October 2015. The section of track along which the incident occurred was scheduled for re-sleepering on the night of 4 October.

Sleeper replacement could be expedited by loosening or removing some dogspikes in advance. These were the works planned for the morning of 2 October. The crew expected to be on-track for about two hours, although there was no set time limit.

Worksite protection

Protection levels

The method or level of protection for a work site is determined by a TFPC after conducting a Site Hazard Assessment. MTM procedures⁶ required the TFPC to determine the level of protection commensurate with the risks associated with the job to be undertaken. Track Access would issue an authority for unplanned access where work parties are able to confirm that an on-site rail safety worksite hazard assessment and pre-work briefing had been conducted.

MTM procedures provided for eight levels of protection, Level One⁷ being the highest and Level Eight the lowest.

In this instance, Track Access issued an authority based on the TFPC advice that full track protection (Level Six Track Protection) would be applied. This protection involved the posting of inner and outer flagmen and detonators on either side of the work zone.

Safeworking procedures

Consistent with MTM's Work, Health and Safety systems, only workers with appropriate tracksafety qualifications could work on the track. Within its Safety Management System, MTM had developed and implemented safeworking procedures for a range of on-track activities.

Specific requirements were:

Responsibilities of the TFPC

A TFPC was required to be assigned to each workgroup. The role of the TFPC was to keep the rail safety workers and the work site safe from rail traffic. Prior to any work commencing in the rail corridor, the TFPC was required to undertake a rail safety worksite hazard assessment, to determine the appropriate protection requirements for the worksite and to ensure Rail Safety Workers performing worksite protection related tasks were not exposed to hazards. MTM procedures provided that the TFPC would be the only person to speak to the Train Controller, Controlling Signaller and Track Access.

Prior to seeking permission to access the track, the TFPC was to obtain train running information from the Network Controller and/or the Controlling Signaller, then conduct a Rail Safety Pre-Work Briefing. All personnel were to be present at the briefing. The purpose of the safety briefing was to inform workers of the protection to be applied, train running information and the Position of Safety. Once completed, the TFPC could seek approval from Track Access for the workgroup to access the track.

Responsibilities of track workers

Track workers were required to be fit for duty and free of the effects of alcohol and drugs. Prior to accessing the track, workers were required to attend the Rail Safety Pre-Work Briefing. Once this briefing was completed, each track worker was required to sign the safety briefing form as acknowledgement that safety hazards and risk controls were understood.

It was also the responsibility of track workers to comply with direction provided by the TFPC and hand signaller / lookout.

Working in the Danger Zone

The Danger Zone was defined as all space within three metres horizontally from the nearest rail and any distance above or below this zone including being on the line, unless a safe place existed

⁶ MTM document L1-OPS-PRO-018 Planning Work Site Protection In The Rail Corridor.

⁷ Level One – Absolute Occupation, is an authority that closes a defined portion of track to all rail traffic for a specified period.

or could be created. Work in the Danger Zone was not to commence unless the required worksite protection measures were in place and there was a Position of Safety (POS) identified. A POS is where people or equipment cannot be struck by rail traffic and was required to be outside the Danger Zone or behind a suitable fixed barrier located between the POS and the nearest rail.

When working in the Danger Zone, all personnel were required to move immediately to the designated POS when instructed (by the TFPC, handsignaller or lookout). Once the entire workgroup and the lookout was in a POS, the lookout was to face the approaching train and give an 'All-Right' hand signal to the train driver.

All personnel were required to remain in a POS until the TFPC, handsignaller or lookout advised that it was safe to re-enter the Danger Zone.

Lookout Protection

MTM safeworking procedures specified that the TFPC could determine that Lookout Protection was the most appropriate method of protection. Among other things, the TFPC was required to:

- determine the number of lookouts
- where lookouts should be positioned
- advise workers of positions of safety.

In determining the position of the lookout(s), the procedure also specified that the workgroup should be given not less than 25 seconds and not more than 35 seconds notice of approaching traffic, and must be able to move to a POS at least 10 seconds before the arrival of a train.

The procedure specified that the lookout was required to:

- stand in a position of safety where they could see approaching rail traffic
- be within sight and hearing of the workgroup
- maintain effective communication with workers via verbal instruction or by the use of an
 effective audible warning device. In order to do so, the lookout was to have a red flag (in
 daylight), a torch with spare batteries (by night) and an effective warning device such as a
 whistle, air-horn or siren.

Assurance of conformance to safeworking procedures

MTM had developed a system of checks, inspections and audits of workplace conformance to safety and operational procedures. Additionally external agencies, undertook, audits and on-site inspections to verify compliance with the Safety Management System.

External audits scrutinised MTM compliance with the regulatory requirements for transport operators and confirmed that MTM had implemented appropriate measures to address operational and safety matters.

MTM advised that desk-top audits were randomly conducted on Track Access documentation but not on the Rail Safety Worksite Hazard Assessment/Pre-Start documentation.

With regard to on-site inspections, MTM advised that they focussed on major projects at the higher end of track force protection (Level Six and above). There was no record of inspection or audit of the Macaulay or Bell workgroups that were involved in the works at Laverton.

Infrastructure workgroup

The workgroup

As 2 October was a public holiday, the maintenance depots were running at reduced staffing levels and the workgroup was drawn from two depots. The group comprised 13 track workers from the Macaulay and Bell maintenance depots and a contracted backhoe operator.

The workers within the workgroup were appropriately qualified to undertake their roles. They were current with their qualifications and their medicals. Following the incident the workers were tested for drugs and alcohol and all returned negative results.

Infrastructure Works Supervisor

The supervisor was from the Macaulay maintenance depot. He commenced working for MTM in April 2006 and held a Track Force Protection Co-ordinator Level 3.2 certificate⁸. The Supervisor had worked in this section of track many times during the previous eight years. In addition, track force protection through this section was an integral part of the Bridging Course (Level 3.2 & 3.3) and associated examination, which he had completed about two years previously.

His latest medical examination was conducted in November 2011 at which time he was declared fit for duty. The medical certificate was valid for five years. His latest hearing test was in June 2014 and indicated that his hearing ability was within the normal audibility range. The hearing test was valid for two years.

Due to the nature of injuries, the Supervisor was not available for interview.

Track Force Protection Coordinator

The TFPC was also from the Macaulay maintenance depot. He had about 25 years' experience as a track worker, and commenced employment with MTM in March 2005. He held a Track Force Protection Co-ordinator Level 3.3 certificate⁹.

The TFPC too had worked on this section of track many times in the previous years. He had successfully completed the Bridging Course (Level 3.2 & 3.3) and associated examination about two years previously.

The TFPC's latest medical examination was in May 2014 at which time he was declared fit for duty conditional on corrective eyesight lenses being worn. The medical certificate was valid for five years. His latest hearing test was in June 2014, the results indicated that his hearing ability was within the normal audibility range. The hearing test was valid for two years.

The TFPC had worked with this supervisor for about 12 months. He was aware no person could access the track without his permission. However, he did not believe he was in a position to challenge the actions of the supervisor.

Lookout

The lookout was from the Bell depot. He had about 20 years' experience as a track worker. He commenced working for MTM in September 2005 and at the time of the incident was qualified as a Level 2.2 Hand Signaller¹⁰.

The lookout's latest medical examination was in January 2013 at which time he was declared fit for duty conditional on corrective eyesight lenses being worn. The medical certificate was valid for five years. His latest hearing test was in June 2014, the results indicated that his hearing ability was within the normal audibility range. The hearing test was valid for two years.

The lookout had not previously worked with the Macaulay workers. When he heard the TFPC calling for a lookout, he volunteered.

⁸ A Level 3.2 TFPC certificate allows the holder to manage an Absolute Occupation or an area of Booked-out Track consisting of only one work group.

⁹ A Level 3.3 TFPC certificate allows the holder to manage multiple work sites within an Absolute Occupation or Bookedout Track.

¹⁰ A Level 2.2 certificate allows the holder to perform Hand Signaller and Lookout duties under the supervision of a TFPC.

The train

TD6822 was a Comeng type, 6-car Electrical Multiple Unit. The train was serviceable and performed within expected parameters. Key events recorded by the train data logger are shown at Figure 5.

Time h:m:s	Event	Distance Travelled (m)
09:16:15	Train arrived at Laverton station (Platform № 1, West Line).	0
09:16:48.6	Train departed Laverton station after sounding the train horn.	0
09:17:10.8	Train horn sounded (when driver observed the track workers).	147
09:17:14.8	Traction off. Train speed 57 km/h.	205
09:17:20.7	The horn sounded again (to acknowledge the 'All-Right' hand signal from the lookout). Train speed 58 km/h.	303
09:17:24.2	The horn sounded again (when the driver noticed the supervisor foul of the track). Train speed 59 km/h.	362
09:17:26.9	Emergency brake application. Train speed 59 km/h.	405
09:17:44	Train at stop.	564

Figure 5: Train event recorder key events

The train driver

The driver qualified in November 1989 and since that time has been driving trains on the Melbourne suburban network. He was appropriately qualified, medically fit to operate and returned a negative result when breathalysed for alcohol following the incident.

Safety analysis

Access to the track

On arrival at the worksite, the supervisor went onto the track without first confirming with the TFPC that safe access had been arranged. He was followed by other workers. Later, the lookout was posted without receiving a safety briefing.

Prior to going on track, it was necessary to:

- Obtain permission from the TFPC and Track Access. The Level Six protection planned for the track works was not yet in place, and so separate protection for this preparatory activity was required. Formalised Lookout Protection (Level Eight) would have been appropriate.
- Attend a pre-work briefing that would have included information on train running and discussion on, and designation of, a Position of Safety.

As a result of these activities not being undertaken, the supervisor and the lookout did not receive the benefit of a safety briefing that would have informed them of the outcomes of the worksite hazard assessment, train running, and the designated Position of Safety.

The TFPC attempted to address the risk associated with the supervisor's uncontrolled access by posting a lookout. The TFPC reported that he believed that he could not challenge the authority and actions of the supervisor, and this may have played some part in him not recalling the supervisor from the tracks to enable formal access processes to be followed.

Authority for passage of train

The lookout reported that after calling out to warn of the approaching train, he saw the supervisor move away from the track, whereupon he (the lookout) turned to face the train in response to hearing its horn.

However, the supervisor was on the track when the train arrived. It is probable that the lookout saw the supervisor begin to react, and in his mind, decided that the supervisor was moving off track. In the belief that the track was or would be clear, he gave the driver the 'All-Right' hand signal.

Supervisor not clear of the track

Upon the approach of train TD6822, it is unlikely that the supervisor would have remained ontrack had he been aware that the train would cross over to the East Line. It is probable that he believed that the train would continue along the West Line, and that he was in a safe position at his location near the East Line.

As the train approached, it is possible that the supervisor did not consider that trains were running to the Saturday timetable, and via the East Line and the Altona Loop Line. That the train stopped at platform № 1 at Laverton station may have reinforced an expectation that the train would continue direct to Newport along the West Line, as it would have done on a normal weekday.

Safeworking Protocols

In addition to the initial uncontrolled access to the track that is considered a contributory safety factor, there were several other actions of the workgroup that were contrary to established safety procedures. While probably not directly contributory to the incident, the actions increased the risks associated with the workgroup's activities.

The additional actions that were deviations from MTM's safeworking processes included:

- The TFPC advised MTM's Track Access office that a safety briefing had been conducted when this was not the case.
- Members of the workgroup were aware that the *Rail Safety Pre-Work Briefing* form was to be signed only after the safety briefing had been completed, yet several signed the form in advance.
- The TFPC instructed the lookout to access the track without a safety briefing.
- The lookout took up his position without a red flag and an effective warning device.
- When the lookout warned of the approaching train, the track workers did not move to a Position of Safety that was clear of all tracks.

Findings

From the evidence available, the following findings are made with respect to the track worker being struck by a passenger train near Laverton station, Victoria on 2 October 2015. 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 track was accessed by the work crew without an assessment of the risks and without the establishment of appropriate risk controls.
- An 'All-Right' hand signal was given to the train driver before the supervisor had moved to a Position of Safety clear of all tracks.
- The supervisor did not move to a position of safety as the train approached. He probably expected the train to proceed directly along the West Line and not take the crossover to his location.

Other factors that increased risk

• The actions of the workgroup contravened several safeworking protocols, increasing the risks associated with their activities.

Safety actions

Additional safety action

Whether or not the ATSB identifies safety issues in the course of an investigation, relevant organisations may proactively initiate safety action in order to reduce their safety risk. The ATSB has been advised of the following proactive safety actions in response to this occurrence.

Additional safety action taken by Metro Trains Melbourne

Metro Trains Melbourne advised that since this occurrence:

- Field audits of safeworking practices have been increased.
- There has been an improved system of record keeping and review of those audits.
- The increased field inspections are being used as an opportunity to educate and refresh track workers on safeworking procedures.

General details

Occurrence details

Date and time:	2 October 2015 – 0917 EST	
Occurrence category:	Accident	
Primary occurrence type:	Collision with track worker	
Location:	Near Laverton Railway Station	
	Latitude: 37° 51.7' S	Longitude: 144° 46.7' E

Train details

Train operator:	Metro Trains Melbourne		
Registration:	TD6822		
Type of operation:	Suburban Passenger		
Persons on board:	Crew – Train Driver	Passengers – Unknown	
Injuries:	Crew – None	Passengers – None	
Damage:	None		

Sources and submissions

Sources of information

The sources of information during the investigation included:

- Metro Trains Melbourne
- Data logger from train TD6822
- The workgroup
- The train driver.

References

MTM document L1-OPS-PRO-018 Planning Work Site Protection In The Rail Corridor

MTM document L0-SQE-PRO-037 Lookout Protection

Submissions

Under Part 4, Division 2 (Investigation Reports), Section 26 of the *Transport Safety Investigation Act 2003* (the Act), the Australian Transport Safety Bureau (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 Metro Trains Melbourne, the supervisor, the TFPC, the lookout, the train driver, the Office of the National Rail Safety Regulator and Transport Safety Victoria

Submissions were received from the Office of the National Rail Safety Regulator (ONRSR) and Metro Trains Melbourne (MTM). The submissions from those parties 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 operations involving the travelling public.

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.

Australian Transport Safety Bureau

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ATSB Transport Safety Report Rail Occurrence Investigation

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