Australian Government
Australian Transport Safety Bureau

Signal ME45 passed at danger, involving suburban passenger train 1A21

Bowen Hills, Brisbane, Queensland, 26 August 2017

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Addendum

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Signal ME45 passed at danger, involving suburban passenger train 1A21

What happened

At about 0945 Eastern Standard Time[1] on 26 August 2017, Queensland Rail (QR) suburban passenger train 1A21, travelling to Shorncliffe on the out-bound suburban line, approached Bowen Hills station.

The signal prior to the station (ME19) displayed a restricted indication (double yellow aspect)[2] for the driver. The Automatic Warning System (AWS)[3] generated an in-cab alert to the driver of the restricted signal indication ahead. The driver acknowledged the AWS and readied the train for the station stop at No.2 platform Bowen Hills.

Mid-way along the platform, the AWS activated again, indicating the next signal at the end of No.2 platform (ME25) was also displaying a restricted indication (single yellow aspect).[4] The driver acknowledged the AWS, but at about that time his attention shifted to a person standing near the end of the platform. The driver, who had previously been exposed to people attempting self-harm, recalled experiencing an anxious moment as the train neared the person.

The driver stopped the train at the platform, but reported that he did not apply the required 'Start on Yellow' (SOY) procedure (brake controller to full service and reverser to neutral). This procedure compels the driver to re-check the departure signal indication prior to starting from the platform.

Following the receipt of 'right-a-way' from the guard, the driver started from the platform without checking the departure signal (ME25), overlooking the single yellow aspect warning that the next signal ahead (ME45) was displaying a red indication. After accelerating the train to the designated track speed of 30 km/h, the driver noticed temporary stop signs erected on both the adjacent in-bound and out-bound main lines.

As the train traversed a sweeping right hand curve, the driver then observed maintenance staff working on the main lines (Figure 1). To warn the workers of the approaching train, the driver sounded the train horn on two occasions before one of the workers acknowledged him. As the train neared the workers and signal ME45, the AWS activated, warning the driver of the restricted signal indication (red aspect) ahead. The driver acknowledged the AWS, but did not respond to the signal. After passing the workers, the driver recalled looking ahead, sighting other maintenance staff in the distance, and then observing the red aspect of signal ME45. The driver responded by fully applying the train brake.

At 0948, as the train passed signal ME45, an alarm activated at the QR Rail Management Centre at Mayne. The network control officer overseeing that particular area broadcast an emergency radio message calling for the driver of 1A21 to stop.

On-board CCTV footage indicated the train was travelling at 32 km/h when the brakes were applied, with the train coming to a stop approximately 40 m beyond the signal. Due to the removal

1 Eastern Standard Time (EST): Coordinated Universal Time (UTC) + 10 hours.
2 Caution – proceed to find the next signal at caution.
3 The AWS is part of the signalling system and the in-cab system warns the driver whether the next signal is clear or restricted.
4 Caution – expect the next signal to be at STOP. Proceed, prepare to STOP prior to the next signal.

of the train’s event recorders for repair, there was no on-board data recording available to capture vehicle parameters, other than the CCTV footage.

In passing signal ME45, train 1A21 had entered into the limits of a Track Occupancy Authority (TOA). At the time of the occurrence, track workers were clear of the danger zone and the TOA was in the process of being suspended.

Figure 1: CCTV footage from the driving compartment of train 1A21

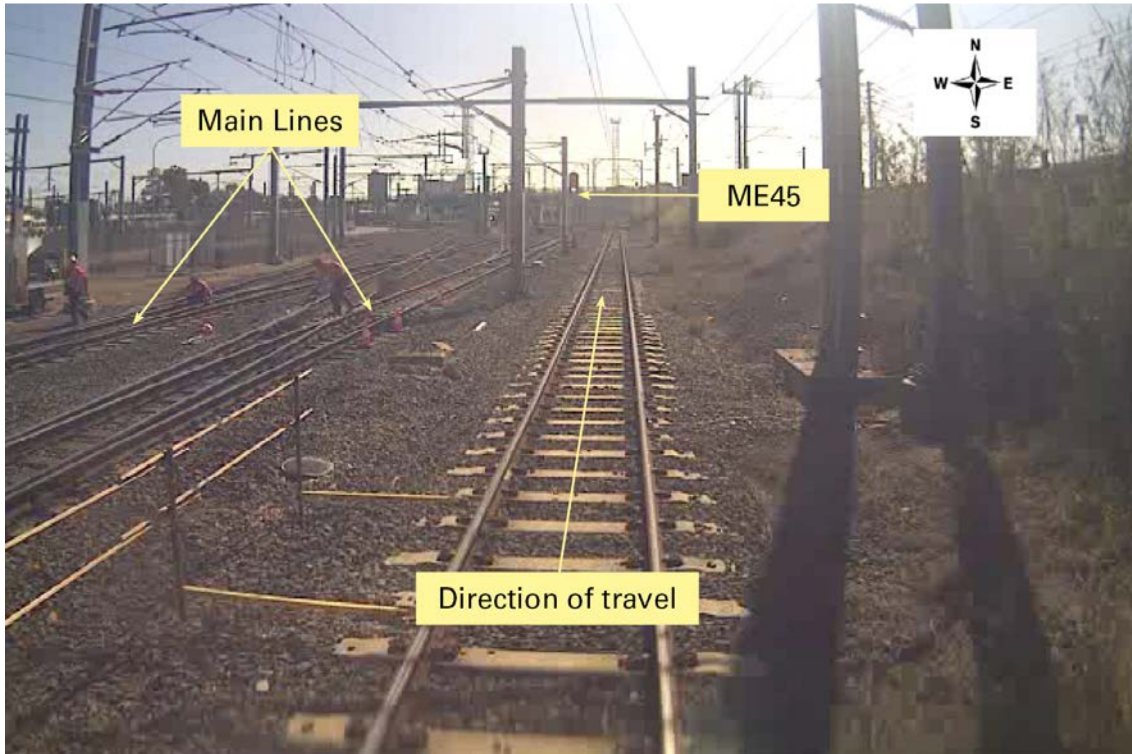

Image shows maintenance staff working on the Main Lines and signal ME45 in the foreground.
Image supplied by Queensland Rail – Annotated by the ATSB.

Safety analysis

While perhaps influenced by the driver’s focus on a person near the end of the platform, not applying the ‘Start on Yellow’ procedure removed the requirement to assess signal ME25 (which was displaying a yellow indication) prior to departure. That in turn removed an opportunity for the driver to expect that signal ME45 would be displaying a red indication.

As the train traversed the sweeping curve, it is likely the driver’s attention was diverted from the primary task of observing signals toward other activities adjacent to the track. That may have influenced the driver’s inappropriate response to the AWS indication and led to the train passing the signal at STOP.

Findings

These findings should not be read as apportioning blame or liability to any particular organisation or individual.

- Due possibly to distraction, the driver did not apply the applicable procedures relevant to the restricted indication displayed at signal ME25 prior to departing the platform, therefore missing vital information concerning the aspect status of signal ME45.
- The driver's attention was likely focussed on peripheral trackside activity as the train approached signal ME45, distracting him from the primary task of observing signal indications.

Safety message

Train drivers are reminded that distraction while operating trains is a hazard which increases risk. To appropriately manage the risk, drivers are required to follow a robust risk-based approach. This includes applying applicable procedures and control measures.

General details

Occurrence details

Date and time:	26 August 2017 – 0948 EST	
Occurrence category:	Incident	
Primary occurrence type:	SPAD	
Location:	Bowen Hills, Queensland	
	Latitude: 27° 26'28.3' S	Longitude: 153°02'18.2' E

Train details

Train operator:	Queensland Rail	
Registration:	1A21	
Type of operation:	Suburban Passenger	
Persons on board:	Crew – 2	Passengers – unknown
Injuries:	Crew – nil	Passengers – nil
Damage:	Nil	

About the ATSB

The 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; and 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.

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

About this report

Decisions regarding whether to conduct an investigation, and the scope of an investigation, are based on many factors, including the level of safety benefit likely to be obtained from an investigation. For this occurrence, a limited-scope, fact-gathering investigation was conducted in order to produce a short summary report, and allow for greater industry awareness of potential safety issues and possible safety actions.