Australian Government
Australian Transport Safety Bureau

Safeworking irregularity involving train 5SM2

Springhurst, Victoria | 6 March 2014

Investigation

ATSB Transport Safety Report
Rail Occurrence Investigation
RO-2014-004
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Published by: Australian Transport Safety Bureau
Postal address: PO Box 967, Civic Square ACT 2608
Office: 62 Northbourne Avenue Canberra, Australian Capital Territory 2601
Telephone: 1800 020 616, from overseas +61 2 6257 4150 (24 hours)
Accident and incident notification: 1800 011 034 (24 hours)
Facsimile: 02 6247 3117, from overseas +61 2 6247 3117
Email: atsbinfo@atsb.gov.au
Internet: www.atsb.gov.au

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Addendum

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What happened

At about 0230[1] on 6 March 2014, Pacific National superfreighter 5SM2 left Sydney, New South Wales, bound for Melbourne, Victoria. The train consisted of three locomotives (NR106, NR58 and DL50) hauling 18 wagons of containerised freight. It had a total length of 635.4 m and a trailing weight of 1635.4 t.

The train travelled to Wodonga (Figure 1) without incident and continued on towards Wangaratta on the East Track. This section had bi-directional signalling[2] on both the East and West Tracks and was controlled by the Network Control Centre South (Network Control) at Junee NSW.

Figure 1: Location of Springhurst Vic

Source: Geoscience Australia annotated by the ATSB

At about 1345, train 5SM2 approached Springhurst on the East Track, a location where work was being carried out on the West Track under Absolute Occupation[3]. Due to the occupation on the West Track, protection of the parallel[4] line was in place on the adjacent East Track. This was in the form of Track Force Protection (TFP) which was managed by a third party Track Force Protection Coordinator (TFPC).

Train 5SM2 approached the outer flagman displaying a yellow flag indicating that there was an obstruction ahead requiring the train to stop at an inner flagman. Three Audible Track Warning Signals[5] (ATWs) had been placed 10 m apart on the track by the outer flagman and as 5SM2 went over the ATWs, the train crew sounded the horn and started to manage the train in anticipation of stopping at the inner flagman protecting the worksite 2,000 m ahead.

After 5SM2 had travelled a further 1,100 m, the train crew observed the inner flagman and determined that the train was not going to stop in time. The driver made an emergency brake application and the train came to a stop about 100 m beyond the inner flagman.

After some discussion between the train crew and the East Track TFPC, 5SM2 continued on towards Melbourne. The incident was reported to the West Track TFPC, but the details of the incident were not provided to him. Network Control was not advised of the incident at this time.

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1 The 24 hour clock is used in this report to describe the local time of day, Eastern Daylight-saving Time (EDT).
2 Signalling which permits trains to be signalled normally in either direction on a running line.
3 Absolute Occupation is the exclusion of rail traffic as set out under the Train Alteration Advice No. 0225-2014.
4 The protection of a parallel track is used whenever there are works underway on an adjacent track that could potentially obstruct traffic that is still running on that track.
5 A device attached to the rail head that explodes on impact, used to attract the attention of train crews.

The West Track TFPC continued on with his duties and after clearing the site made arrangements to hand back the Absolute Occupation to Network Control. After completing this process, he discussed the earlier incident with the East Track TFPC. After gaining a clearer understanding, the West Track TFPC reported the matter to the Train Transit Manager (TTM).

The TTM identified that the correct incident notification process had not been followed and instructed the East Track TFPC to report the matter to Network Control.

Network Control was subsequently advised of the incident. The worksite was shut down and train 5SM2 was directed to wayside at Seymour for a crew change before continuing its journey to Melbourne.

Track Force Protection (TFP)

The Australian Rail Track Corporation (ARTC) Code of Practice for the Victorian Main Line Network TA20 Section 15 states that an outer flagman;

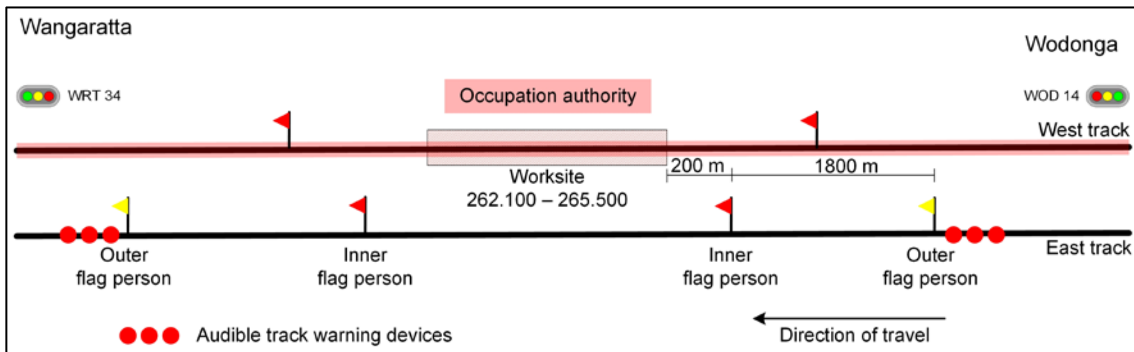
> …must place three Audible Track Warners (ATWs) on the line, 10 metres apart, not less than 2000 metres and not more than 4000 metres beyond the obstruction. The 'Warning' hand signals (yellow flag or light) must be plainly exhibited to any approaching train even if a train is not expected.

And an inner flagman;

> …must plainly exhibit the 'Stop' hand signal (red flag or light) not less than 200 metres from the obstruction.

The East Track protection documentation contained some inconsistences that made it difficult to determine exactly where the flagmen were placed. However, the ARTC's initial investigation of this incident found that the outer flagman was located 2,000 m from the worksite and an inner flagman was located 200 m from the worksite (Figure 2) in accordance with the ARTC's requirements.

Figure 2: Protection for the West and East Tracks



Source: ATSB (Not to scale)

Train crew and handling

At the time of the incident, the train crew were deemed to be medically fit and assessed as competent. Following the incident, tests for the presence of drugs and alcohol returned negative results.

While the available data shows that the train crew prepared the train in anticipation of stopping before the worksite, had the driver applied more braking effort sooner, the train may have stopped before it passed the inner flagman.

Incident reporting

The ARTC's Emergency Management Procedure TA44 states that

> When a worker of ARTC or Operator becomes aware of an actual or potential incident, that worker or operator is to take all necessary steps to ensure that the incident site is protected and immediately contact ARTC Network Control to ensure the protection of the network.

At the time of the incident, the East Track TFPC did not consider that the occurrence was an incident or 'near miss' that required reporting. The train crew considered that the incident had been 'dealt with and reconciled' by the TFPC onsite and, therefore did not report it. However, the train crew and the TFPC both had an obligation to report the incident as soon as reasonably practicable.

Previous incident

In 2006, the ATSB investigated a safeworking irregularity that resulted in a freight train colliding with a track mounted excavator that was conducting track work near Inverleigh, Victoria. As a result of this investigation (No. 2006008[6]) the ATSB recommended that;

> The ARTC should review their policies and/or procedures to ensure that factors such as the type and speed of train traffic and the gradient of the line are adequately considered when placing outer flag persons to protect track-work sites

The previous incident highlighted the importance in considering the local conditions when positioning protection on track.

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 action in response to this occurrence.

ARTC

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

- The Australian Rail Track Corporation will review the placement of outer and inner warnings given to train crews approaching worksites within Victoria as a priority. The review will consider the requirements specified in the rules applicable to other areas of the Defined Interstate Rail Network with the preferred outcome being alignment across all jurisdictions.
- All ballast rehabilitation program staff have been reminded of the requirement under TA44 to immediately report incidents to Network Control.

Safety message

This incident demonstrates the need for Track Force Protection Coordinators to appropriately consider local factors such as grade and sighting of flagman when positioning the inner and outer flagman; and for train crews to take early and appropriate action in readiness for stopping the train.

The ATSB SafetyWatch highlights the broad safety concerns that come out of our investigation findings and from the occurrence data reported to us by industry. One of the safety concerns is safe work on rail (www.atsb.gov.au/safetywatch/safe-work-on-rail.aspx).

[6] www.atsb.gov.au/publications/investigation_reports/2006/rair/rair2006008.aspx

General details

Occurrence details

Date and time:	6 March 2014 1345 EDT	
Occurrence category:	Incident	
Primary occurrence type:	Safe working irregularity	
Location:	Springhurst, Victoria	
	Latitude: 36° 11.157' S	Longitude: 146° 28.193' E

Train details

Train operator:	Pacific National	
Registration:	5SM2	
Type of operation:	Interstate freight	
Persons on board:	Crew – 2	Passengers – 0
Injuries:	Crew – 0	Passengers – 0
Damage:	None	

About the ATSB

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; 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 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.

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.

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Notifications 1800 011 034
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