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- independent investigation of transport accidents and other safety occurrences
- safety data recording, analysis and research
- fostering safety awareness, knowledge and action.

The ATSB does not investigate for the purpose of apportioning blame or to provide a means for determining liability.

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

When the ATSB issues a safety recommendation, the person, organisation or agency must provide a written response within 90 days. That response must indicate whether the person, organisation or agency accepts 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.

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## Parting of train 9827 near Gunning, NSW 30 March 2011

*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 investigation was conducted in order to produce a short summary report to highlight potential safety issues associated with train partings.*

*Factors relating to track condition which led to the parting of train 9827 will be analysed in detail in the ATSB's on-going systemic investigation of the safety of rail operations on the interstate rail line between Sydney and Melbourne (RI-2011-015).*

Vale to Parkes by a Cootamundra based crew that consisted of a driver and a second person. The driver was very experienced on this route. The second person was qualified and had been working for about 4 weeks.

The section of track between Gunning and Yass is double line unidirectional<sup>3</sup> controlled by automatic colour light signals. A network controller based in the Junee Train Control Centre had oversight of the area. The immediate area of the train parting had a track speed limit of 90 km/h.

Figure 1: Location of Gunning



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### Abstract

At about 2031<sup>1</sup> on Wednesday 30 March 2011 a southbound Port Kembla to Parkes empty bulk grain train experienced a train parting event at about the 285 track kilometre point<sup>2</sup> near Gunning (Oolong), NSW, on the down main Sydney to Melbourne rail line. There were no injuries or damage as a result of the incident.

### FACTUAL INFORMATION

Train 9827 consisted of locomotives 8128 leading and 8143 trailing, hauling 38 wagons for a total length of 557 m and gross weight of 754 tonnes. The maximum permitted speed for train 9827 between Port Kembla and Parkes was 115 km/h. Train 9827 was being worked from Moss

### Sequence of events

Train 9827 travelled without incident until approaching the vicinity of the 285 track kilometre point near Gunning. The driver felt a series of mud holes in the track, followed shortly thereafter by a loss of brake pipe pressure. The train was travelling at a speed of about 75 km/h.

1 The 24 hour clock is used in this report to describe the local time of day, Eastern Daylight-saving Time (EDT), as events occurred. Eastern Daylight-saving Time is Coordinated Universal Time (UTC) + 11 hours.

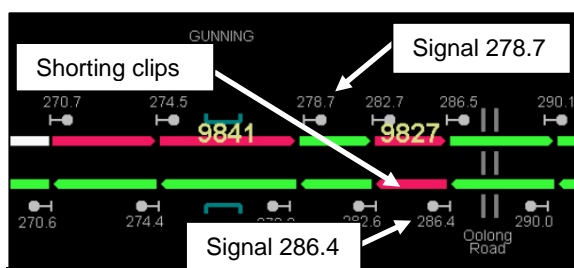
2 285 kilometres from Sydney Central Station.

3 Up main line heading towards Sydney and a down main line heading away from Sydney.

The train brakes came on automatically, at 2031:46<sup>4</sup>.

Train braking systems are designed so that in the event of a train separation, the brakes apply on all vehicles, providing a 'fail safe' condition. Once the train came to a stop at about 2032:03, the driver notified the network controller at Junee while he placed track circuit shorting clips<sup>5</sup> onto the Up Main line adjacent to the train (Figure 2)<sup>6</sup>. He then walked towards and placed audible warning devices on the Up Main track near the first approaching signal 286.4, about 300 m away.

**Figure 2: Phoenix extract at 2033:36**



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Following notification, the network controller at Junee immediately contacted all approaching trains to protect the area near train 9827. The following train (9841) on the Down Main line was held at signal 278.7 while the next Up Main line train 8114 was held at signal 297.8.

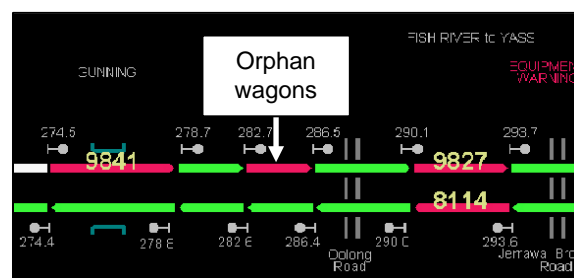
During this time the second person walked back to the rear of train 9827 looking for an air leak and found an open air cock on what he thought was the end of the train. He contacted the driver and advised him that the air pipe was blowing, the tap was open and that he had closed it, following which the driver noted that the brake pipe pressure returned to normal. The driver recalled asking the second person if he was at the back of

the train, 'the wagon with the light'. After the event, the second person did not recall this particular communication. However, he noted that he was very focussed on finding the source of the air leak and assumed that the radio communications were unreliable at the end of the train.

At 2044:11, the driver contacted the network controller and advised of the findings. When the second person returned to the cab, the driver recalled confirming with him that there was an end of train marker in place, following which he surmised that the hose must have flicked up, as a result of the series of mud holes, and hit the air cock. In his statement, the second person recalled a conversation about closing the tap but not the exact words. Based on the information from the second person, the driver contacted the network controller at 2053:56, removed the track circuit clips and audible warning devices, and departed at 2104:49.

At 2054:54 the network controller advised trains 8114 and 9841 to proceed with caution near the area where train 9827 had stopped. After train 9827 cleared the section, the track circuit remained occupied. The network controller noticed the anomaly (Figure 3) and immediately contacted train 8114, on the Up Main line, to be very cautious and check the condition of the track 'just in case he has left wagons behind'.

**Figure 3: Phoenix extract at 2109:01**



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At 2113:22 the network controller was discussing the condition of the track with the driver of train 8114 when the driver observed four wagons sitting stationary on the Down Main line. Train 8114 continued on its journey.

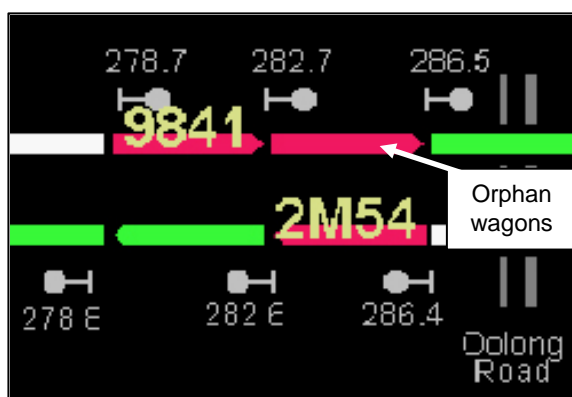
At 2115:22, the network controller contacted train 9841 and instructed them to stop; noting signal 282.7 would be at stop as result of the occupied block between signals. At this point the network

- 4 Based on the leading locomotive Hasler time corrected by + 120 seconds. Due to the Hasler recorder not working correctly, data from locomotive 8143 could not be used.
- 5 The track circuit shorting clips are designed to replicate a track occupied condition thus placing the protecting signals at stop, in this case signal 286.4.
- 6 Pacific National did not provide a copy of the train crew statements. All information on train crew actions is based on recorded conversations with the network controller and statements given to the Independent Transport Safety Regulator of New South Wales.

controller also contacted train 9827 to advise them the status of their train but they had overheard the discussion on the radio network and had already stopped at 2119:35, about 14 km away. The driver of train 9827 deduced that the orphan wagons could have only come from his train. He questioned the second person about 'a red light on the back'. In his statement, the second person responded that he thought there was an end of train marker.

At 2133:39, train 2M54 on the Up Main line, stopped adjacent to the orphan wagons and secured them using the mechanical hand brakes. The crew also placed audible warning devices on the track, protecting them. At 2142:58 (Figure 4), the crew identified the orphan wagons to the network controller and noted that the end of train marker light was not illuminated.

**Figure 4: Phoenix extract at 2142:58**



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At 2148:27, the network controller again contacted the crew of train 9827 and advised that the last four wagons had been left behind. During the conversation the driver reiterated his recollection of what he was told, and stated that the number of the last wagon he gave the network controller was based on the train manifest sheet. Train 9827 was held for about 70 minutes until it was decided to allow it to continue to Yass Junction, detach the remaining wagons, and come back with a locomotive to clear the section. The orphan wagons were clear of the Down Main line at Yass Junction at 0133 on 31 March 2011.

### Post incident

The train crew (9827) were tested for the presence of alcohol and illicit drugs at Yass Junction and were relieved from duty. The drug and alcohol tests returned zero results. The train

was examined on 31 March 2011. No damage or defects were noted. The separated couplers were within tolerance. It was also noted that the end of train marker was not functioning.

### SAFETY MESSAGE

The actions of the network controller, and train crews of trains 8114 and 2M54 both travelling on the Up Main line, should be commended. Their actions prevented this occurrence from becoming more serious.

The exact nature of the communications between the driver and second person is unclear. This incident highlights the importance of identifying and verifying the last wagon of a train consist, following a loss of air event, before the train continues its journey. In this case the signalling system employed Rail Vehicle Detection and worked as designed by restoring the approaching signal to stop. This protected the orphan wagons and approaching trains. However, had the incident occurred in 'dark territory' (a location without Rail Vehicle Detection) the consequences may have been far more serious.

### Further investigation

On 16 August 2011, The Hon Anthony Albanese MP, Minister for Infrastructure and Transport, requested that the ATSB undertake a systemic investigation of the safety of rail operations on the interstate rail line between Sydney and Melbourne. In accordance with the Minister's request the ATSB commenced a safety issue investigation RI-2011-015 which will consider:

- The condition of the interstate rail track and measures that have been put in place to maintain the safety of rail operations where track quality is below acceptable operational standards;
- Actions undertaken by the ARTC to remediate the track and address the safety of operations;
- Safeworking practices in relation to the track;
- A systemic review of safety systems; including signalling and the quality assurance of work undertaken on the track; and,
- Any other matters considered relevant by the ATSB.

The issues relating to track condition which led to the parting of train 9827 will be analysed in detail in this investigation. appropriate, the text of the report was amended accordingly.

## **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 incident.

### *Pacific National*

Pacific National (Asciano) noted in response to the draft report that:

As noted above our investigations are ongoing, however, we expect to make changes to our training packages and in cab resources for use in emergencies.

## **SOURCES AND SUBMISSIONS**

### **Sources of Information**

As part of the process evidence was sourced from Pacific National, the Australian Rail Track Corporation, and the Independent Transport Safety Regulator of New South Wales. Evidence included train running information, voice and signalling data logs, locomotive data logs, and other documentation.

### **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 Pacific National, the Australian Rail Track Corporation, the Independent Transport Safety Regulator of New South Wales, and a number of individuals.

Submissions were received from Pacific National, the second person of train 9827, the Australian Rail Track Corporation, the Independent Transport Safety Regulator of New South Wales. The submissions were reviewed and where considered