Australian Government
Australian Transport Safety Bureau

Derailment of train 3WB3

Nambucca Heads, New South Wales | 14 May 2014



Investigation

ATSB Transport Safety Report
Rail Occurrence Investigation
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The occurrence

The information contained in this Preliminary report is released in accordance with section 25 of the Transport Safety Investigation Act 2003 and is derived from the initial [ongoing] investigation of the occurrence. Readers are cautioned that new evidence will become available as the investigation progresses that will enhance the ATSB's understanding of the accident as outlined in this Preliminary report. As such, no analysis or findings are included in this report.

At 1355[1] on 14 May 2014, freight train 3WB3 entered the Nambucca Heads crossing loop. The route was set for a through movement via the loop because of trackside work being performed adjacent to the main line.

At 1404:20, the trailing wheel set of the leading bogie on wagon RCOF20375S derailed to the right-hand-side in the direction of travel while the train was travelling through the crossing loop at a speed of 21 km/h. The derailed wagon was located fourth from last in the 44 wagon consist.

The train continued to travel with a derailed wagon for about 1,397 m. It passed over two bridges and reached a speed of 44 km/h before wagon RCOF20375S tipped on its side (Figure 1). The train then parted between the fourth and fifth last wagons. As the wagons parted, the train brake pipe separated, allowing air to vent to atmosphere and the train brakes to apply, bringing the train to a stop in about 320 m.

The train crew notified the network controller and arrangements were made to begin investigative and restoration work. The main line was subsequently reopened at 1816 on 16 May. The crossing loop line remained closed until further repairs could be conducted.

Figure 1: Derailed wagon RCOF20375S



Source: ATSB

[1] TThe 24 hour clock is used in this report. Local time was Australian Eastern Standard Time (EST).

Context

The location

Nambucca Heads is located on the main north rail corridor between Sydney and Brisbane, about 565 track kilometres from Sydney Central Station. Nambucca Heads is a crossing location with a 1,615 m crossing loop.

Track information

The ARTC manages the railway corridor where the derailment occurred. Authorised movement of rail traffic is controlled from the ARTC's Network Control Centre located at Broadmeadow, New South Wales.

The standard gauge[2] track at the derailment location consisted of 53 kg/m rail fastened by resilient clips to timber sleepers, spaced at about 667 mm centres. The sleepers were supported on a bed of ballast to a nominal design depth of 250 mm.

Approaching from the southern end, the track through the derailment site consisted of a series of curves between 480 m and 360 m radii on reasonably level track. The posted maximum track speed was 75 km/h although this speed would rarely be reached, due to the restriction of speed through the points.

On-site examination and preliminary analysis of track condition found no indication of any serious anomalies in the track geometry leading up to the point of derailment in the crossing loop.

Train information

Train 3WB3 was a steel products freight service operated by Pacific National between Wollongong and Brisbane. At the time of the derailment, the train consisted of two locomotives (NR94 leading and AN9 trailing) hauling 44 freight wagons. It was 817 m in length and had a trailing mass of 3,363 t.

The train was operated by two qualified drivers. They had both been assessed as fit for duty in accordance with the requirements of the National Standard for Health Assessment of Rail Safety Workers.

RCOF wagons are 15.1 m long and capable of carrying up to 80 gross tonnes at speeds of up to 80 km/h (depending on track speed limits). On the day of the derailment, wagon RCOF20375S (the wagon which derailed) was carrying 40 coils of rod, each weighing on average 1.5 t. The coils were arranged, two wide by two high, in each of the 10 bays (Figure 2). The coils were contained within the wagon, but they were not individually restrained.

On-site inspection and preliminary examination of the derailed wagons found no indication of any serious anomalies in rolling stock condition. Similarly, preliminary analysis of train data indicated that there were no anomalies in the train speed, train handling or operational performance leading up to the derailment.

However, evidence of load shifting had been observed in wagons not affected by the derailment, but carrying the same rod-in-coil product.

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[2] The name given to gauge of track of 1435mm

Figure 2: Loaded RCOF wagon on train 3WB3 carrying rod-in-coil product



Source: ATSB.

Ongoing investigation activities

The ATSB's investigation is continuing and will focus on:

- the integrity of the rolling stock involved
- the possibility of load shifting en route
- the policies and procedures relating the securing of loads
- the integrity of the track structure

General details

Occurrence details

Date and time:	14 May 2014 – 1404 EST	
Occurrence category:	Incident	
Primary occurrence type:	Derailment	
Location:	Nambucca Heads, New South Wales	
	Latitude: 30° 37.48' S	Longitude: 152° 58.69' E

Train details

Train operator:	Pacific National	
Registration:	3WB3	
Type of operation:	Freight	
Persons on board:	Crew – 2	Passengers – nil
Injuries:	Crew – nil	Passengers – nil
Damage:	Substantial	

Sources and submissions

Sources of information

The sources of information during the investigation included the:

- Australian Rail Track Corporation
- Pacific National
- on site evidence collection
- New South Wales Trains

References

Australian Rail Track Corporation Train Operating Conditions manual

Pacific National Freight Loading Manual

RISSB Glossary of Railway Terminology - Guideline

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.

Australian Transport Safety Bureau

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