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- safety data recording, analysis and research
- fostering safety awareness, knowledge and action.

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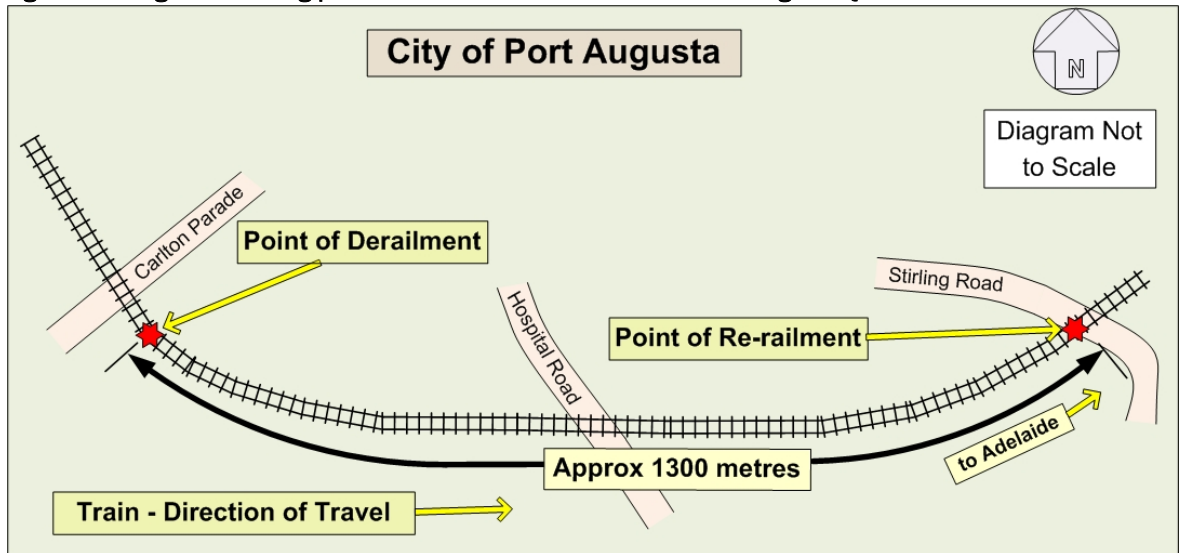
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Derailment of freight train 4PM6 at Port Augusta

South Australia

6 May 2011

Figure 1: Diagram showing point of derailment and re-railment of wagon RQHY 07069C on train 4PM6



Abstract

At about 2016¹ on Friday 6 May 2011, freight train 4PM6 derailed the trailing bogie of the 49th wagon (RQHY 07069C) at Port Augusta, South Australia near the Carlton Parade level crossing (91.559 km²). About 1300 m later, the wagon re-railed itself as it entered the road pavement near the Stirling Road level crossing (Figure 1). There were no injuries as a result of the derailment but there was minor damage to rolling stock and track. The investigation is reviewing a number of factors including the condition of the track and rolling stock, train speed and the interaction of rail wagons and the track through this location.

The investigation is continuing.

- 1 The 24-hour clock is used in this report. Australian Central Standard Time (CST), UTC + 9.5 hours.
- 2 Distance in kilometres from a track reference point located at Coonamia in SA.

FACTUAL INFORMATION

The information contained in this preliminary report is derived from the initial investigation of the occurrence. Readers are cautioned that it is possible that new evidence may become available that alters the circumstances as depicted in the report.

Location, track structure and rolling stock

The derailment occurred about 10 m south of the Carlton Parade level crossing near the 91.559 km point on the Port Augusta to Adelaide section. The single line track close to the derailment site is near the commencement of a 375 m radius left-hand curve. The track is constructed on a 250 mm bed of ballast that supports concrete sleepers nominally spaced at 667 mm centres. Continuously welded rail of 43 kg/m and 60 kg/m sections were fastened to the sleepers using resilient clips. A temporary speed restriction (TSR)

of 30 km/h was applied to train operations from the northern boundary of Carlton Parade through to the southern side of Stirling Street, a distance of about 1300 m. The normal maximum speed of trains through the derailment location is set at 60 km/h. In preparation for rail replacement works, multiple loose lengths of welded rail were placed between the running rails commencing about 15 m south of the Carlton Parade level crossing.

Freight train 4PM6

Train 4PM6 was an intermodal freight service owned and operated by Pacific National. It consisted of two locomotives (NR116 leading and NR58 trailing) with 52 wagons (eight of which were multiple platform vehicles³) transporting containerised freight. The train was about 1737 m long with a total mass of about 4051 t. For the journey between Port Augusta and Adelaide, the train was under the control of a single driver.

Wagon RQHY07069C

The RQHY class container wagon is of skeletal construction and 78 were manufactured in China between 2005 and 2006. Overall length is 19 m, having a gross mass of 92-t with a total load capacity specified at 72.3 t. When the 49th wagon (RQHY 07069C) derailed it was carrying three containers in a double stack configuration, two locked on the wagon deck with one container mounted on the top at the leading end in the direction of travel. Wagon RQHY 07069C was not transporting dangerous goods.

The occurrence

Freight train 4PM6 originated in the Forrestfield Freight Terminal in Perth, Western Australia. Its destination was Melbourne, Victoria. The train departed Forrestfield on Wednesday 4 May 2011 arriving at Spencer Junction Port Augusta at 1314 on 7 May 2011. At about 2006 after a delay of almost 7 hours, train 4PM6 departed Spencer Junction and proceeded onto the main line bound

for the Adelaide Freight Terminal. About 6 minutes and 2 km after departing Spencer Junction, lead locomotive NR116 entered the Carlton Parade level crossing near the beginning of the 30 km/h TSR and continued towards Adelaide.

At about 2030 a member of the South Australia Police and the Genessee and Wyoming Coordinator contacted the Australian Rail Track Corporation (ARTC) train control to advise that sparks had been reported coming from wagons located near the rear of a train that was travelling through Port Augusta. The network controller contacted the driver of train 4PM6 instructing him to stop on the main line at Winninowie, located about 18 km from what was later determined as the point of derailment (POD), and to wait for a person to examine the consist.

Soon after the South Australia Police again contacted the ARTC to advise that the level crossing installations at Stirling Road and Hospital Road were ringing continuously and that the track appeared to be out of alignment. At 2109 an ARTC signals and communications fitter confirmed with the network controller that track components and signalling circuits had been damaged by a derailed wagon between the Carlton Parade and Stirling Street level crossings.

A subsequent track inspection by maintenance workers at Port Augusta confirmed that a train had derailed one bogie near the 91.559 km mark, commencing about 10 m south of the Carlton Parade level crossing. The wagon had remained in a derailed state travelling over the Hospital Road level crossing before rerailling itself near the Stirling St level crossing about 1300 m later. The train continued to travel in a railed condition through the next locality of Stirling North before it was stopped at Winninowie.

Post occurrence

At 2115 the driver of train 4PM6 contacted the network controller and reported that following an examination of his train, damage was visible on wagon RQHY 07069C the 49th in the consist. He observed that on the left-hand side of the trailing bogie, the wheels and outer bearing surfaces had sustained damage from impact with the ballast, sleepers and other track components.

Investigators from the Australian Transport Safety Bureau (ATSB) were dispatched from Adelaide on Saturday 7 May 2011, driving to Winninowie and

3 Multiple platform vehicles on train 4PM6 were 5 pack (an articulated wagon comprising five platforms with common bogies between platforms) and 5 unit wagons, (a wagon consisting of five permanently coupled platforms, each platform independently supported on a pair of bogies).

Port Augusta. Photographs were taken of the track through the derailment zone and an inspection was made of wagon RQHY 07069C that included wheel-sets, bearings, bogies and running gear.

The investigation

The investigation is continuing and will include examination of the following:

- The track leading into and through the derailment zone.
- Wagon RQHY 07069C, including freight loading, wheels, bearings and bogie.
- Train handling and the interaction of the rolling stock with the track.