



Australian Government  
Australian Transport Safety Bureau

# Safeworking breach – Track machine BC7

Bogan Gate, New South Wales | 15 August 2011



Investigation

**ATSB Transport Safety Report**  
Rail Occurrence Investigation  
RO-2011-013  
Final

**Report No.** RO-2011-013

**Publication date** 26 September 2012

**ISBN** 978-1-74251-284-3

Released in accordance with section 25 of the *Transport Safety Investigation Act 2003*

#### **Publishing information**

**Published by:** Australian Transport Safety Bureau  
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# Safeworking breach – track machine BC7

RO-2011-013

## Background

### **Track machine information**

Track machine BC7 was a shoulder ballast cleaner which comprised 12 axles, had a total length of 62 m, weighed 176 t and had an allowable maximum speed of 50 km/h. Track machine BC7 was being operated by the rail division of John Holland Group (JHG) under contract to the Australian Rail Track Corporation (ARTC) at the time of the incident.

**Track machine BC7**



Source: John Holland Group Pty Ltd

### **Location**

Bogan Gate is located in NSW, 438 km<sup>1</sup> west of Sydney, and consists of a standard gauge main line, a crossing loop and a grain siding. A station platform is located within the yard limits at the western end of Bogan Gate (Figure 1).

### **Involved parties**

JHG and Transfield Services (Australia) Pty Ltd (TSA) are contracted by ARTC to conduct rail upgrade and maintenance works throughout the ARTC network. In the course of their work, staff of both JHG and TSA are exposed to the Safeworking Systems of ARTC. In accordance with those Safeworking Systems, the protection of a work site is facilitated by a Track Occupancy Authority (TOA) which is issued by a NCO to a nominated and accredited Protection Officer responsible for the work site.

## What happened

On 10 August 2011, JHG contracted the services of a traffic officer<sup>2</sup> (the Traffic Officer) from Rail Infrastructure Maintenance and Certification (RIMAC), to facilitate the transfer of track machine BC7 from Denman Siding (314.1 km) to Broken Hill (1124.8 km). At the time, JHG were undertaking a large volume of track work on the east-west corridor in NSW and did not have one of their own route qualified traffic officers available.

At 0914, Monday 15 August 2011, the ARTC network control officer (NCO) issued track occupancy authority<sup>3</sup> (TOA) No. 20096 to a Transfield Services Australia Protection Officer for the section of track between signal GJ149 (451.59 km) at Parkes and the down<sup>4</sup> yard limit board (478.82 km) at Bogan Gate until 1200. This meant that all vehicle and machine movements in the section required the authorisation of the Protection Officer. On the same day, track machine BC7 was en-route from Narromine towards Broken Hill with an operator and the Traffic Officer on

<sup>1</sup> Expressions of distance and location are in kilometres from Central Station in Sydney (0 km).

<sup>2</sup> The “suitably qualified person” responsible for the safe pilotage of a track vehicle over a defined section of rail network.

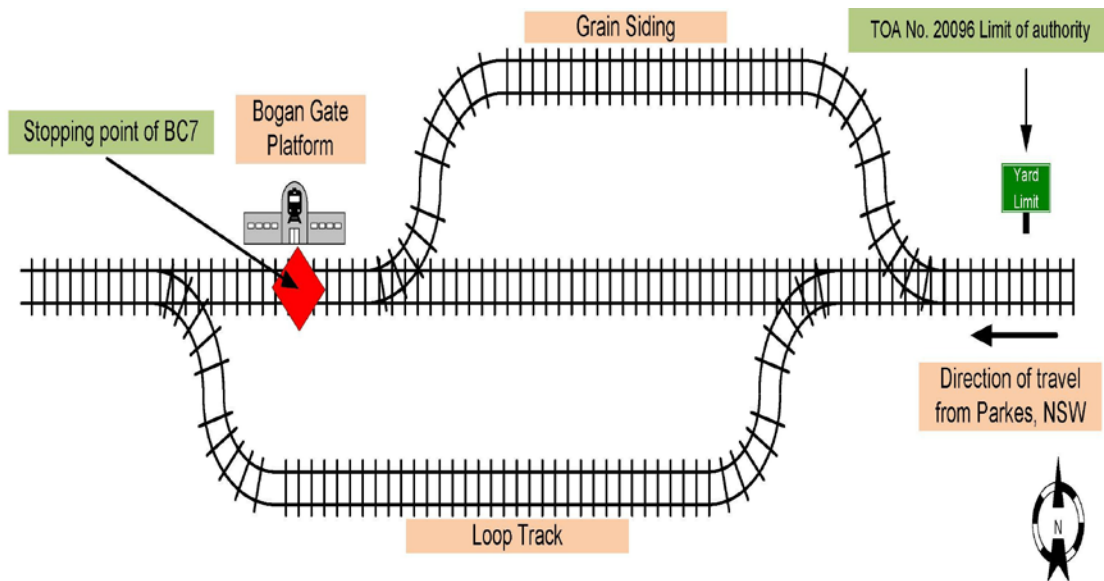
<sup>3</sup> Track Occupancy Authority is an instrument used within the ARTC safety management system to provide authority for a person to occupy and control access into a section of railway line. It is issued by the Network Control Officer to a competent and accredited person.

<sup>4</sup> The terminology “down” is used within rail systems throughout Australia to describe the direction of travel by a rail vehicle. This direction is not determined by one specific point in Australia and changes from state to state usually in reference to the direction the rail vehicle is travelling from the state’s capital city. In this instance the “down” direction at Bogan Gate describes the movement of all track vehicles travelling west towards Broken Hill, NSW.

board. At around 0935<sup>5</sup>, BC7 arrived at Goobang Junction, (448.3 km) outside the limit of the TOA commencing at Parkes.

Upon arrival at Goobang, the Traffic Officer made contact with the NCO and requested permission to enter the Goobang yard. The NCO advised the Traffic Officer that the Protection Officer was in possession of a TOA for the section between Parkes and Bogan Gate. The Traffic Officer then contacted the Protection Officer who provided him with authority to transfer track machine BC7 from Goobang Junction to the down yard limit board at Bogan Gate prior to the TOA being fulfilled at 1200.

**Figure 1: Diagram of train order crossing location at Bogan Gate showing limit of authority and the stopping point of BC7**



At around 1100, as track machine BC7 approached the down yard limit board at Bogan Gate, the Traffic Officer advised the operator to proceed past the board and stop at the platform. After arriving at the platform, the Traffic Officer contacted the NCO and advised that he had arrived at Bogan Gate. A short discussion ensued and it was during this discussion that the Traffic Officer informed the NCO that BC7 was standing at the Bogan Gate station platform.

The NCO then realised that in proceeding past the yard limit board and stopping at the platform, the Traffic Officer had travelled beyond the limit of his authority under TOA No.20096. The NCO then instructed the Traffic Officer to remain at the platform with the track machine and operator.

### ***John Holland Group investigation***

JHG conducted an investigation of the occurrence and found that the limit of authority described on the TOA had been exceeded. Their investigation identified that this may have been due to limitations in the Traffic Officer's knowledge of the local area, the change in directional application of the word "down" and the potential for misinterpretation of "up" and "down" terminology in track direction. In particular, that the use of the word "down" referred to the opposite direction of travel once track machine BC7 had transited through Goobang Junction to Bogan Gate.

<sup>5</sup> Eastern Standard Time (EST) is Coordinated Universal Time (UTC) + 10 hours.

## Safety action

### **John Holland Group Pty Ltd**

As a result of this occurrence, JHG advised the ATSB that they are taking the following safety action:

#### **Competency and route knowledge**

JHG supervisors are to verify traffic officer's competencies, method of safeworking and route knowledge. This measure has been taken to ensure track workers have the requisite route knowledge and local area safe working knowledge.

#### **Worksite protection and multiple methods of safeworking**

A review has been completed of worksite protection and rolling stock transfer through multiple safeworking territories.

#### **Direction of travel terminology**

JHG recommended to the ARTC that they issue a Safe Notice advising of the correct terminology and interpretation for all rail safety workers regarding the "up" and "down" direction of travel. The ARTC rejected this recommendation as they believe that the terminology is appropriately defined in the relevant network operating rules and procedures.

## Safety message

This occurrence highlights potential for confusion around terminology used in track occupancy authority notices. All track personnel and operators are reminded of the need to ensure they know the limits of their authority before moving vehicles.

## Rail vehicle details

Manufacturer and model:	Loram – shoulder ballast cleaner	
Operator:	John Holland Group	
Identification Number:	BC7	
Type of operation:	Rail track maintenance	
Location:	Bogan Gate, 483 km from Sydney, New South Wales	
Occurrence type:	Safeworking breach	
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 Bureau 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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