



NO 94-104

TRAIN 849

LINE OBSTRUCTION

AVOCA, CANTERBURY

9 FEBRUARY 1994

ABSTRACT

On 9 February 1994, NZRL Train 849, a westbound unladen coal train on the Midland Line, encountered a digger obstructing the line on the Avoca Bank, between Staircase and Craigieburn. The crew sighted the digger in time to stop the train safely. The safety issue identified in this investigation is the adequacy of protection rules applicable to track workers.

TRANSPORT ACCIDENT INVESTIGATION COMMISSION

RAIL INCIDENT REPORT NO 94-104

Train Type and Number:	Express Freight, 849
Date and Time:	9 February 1994, 1420 hours
Location:	Midland Line, 71 km (approximately), near Avoca
Type of Occurrence:	Line obstruction
Persons on Board:	Crew: 3
Injuries:	Crew: Nil
Information Sources:	Transport Accident Investigation Commission field investigation
Investigator in Charge:	Mr A J Buckingham

1. NARRATIVE

1.1 Train 849, an empty coal train returning to Ngakawau (near Westport) from Lyttelton, was crewed on 9 February 1994 by a Locomotive Engineer who had recently been transferred to Christchurch, and was “learning the road” under the supervision of a senior Locomotive Engineer. The latter was seated at the Train Operator’s position on the left side of the cab. Accompanying the crew was the Train Supervisor from Christchurch.

1.2 Rounding a curve at the bottom of the Avoca Bank about 1420 hours, the crew sighted a mechanical digger, visible through a gap in the lineside trees. As the digger appeared to be working on or close to the line ahead, the locomotive’s horn was sounded as a warning.

1.3 As the train came around the next curve, the crew saw the digger sitting foul of the line, and a Ganger running towards the train, with his arms raised in the “Danger—Stop” hand signal. The train, which was already being braked, was brought to a halt 200 m clear of the digger.

1.4 After the digger had been moved clear of the line, the train was eased forward and stopped again briefly, for a short discussion of the situation with the Ganger. The incident was reported to Train Control and the train continued on its journey, having been delayed six minutes.

1.5 The Ganger had contacted Christchurch Train Control at 1226 hours for clearance to continue work commenced earlier in the day, and interrupted by the passage of two westbound trains. Clearance was given for the digger to operate until 1500 hours, at which time the Ganger was required to contact Train Control for further advice.

1.6 Train 849 had been subject to cumulative delays in unloading at Lyttelton (as train 840), and by the time it departed Lyttelton after discharging its load of coal, it was running over two hours behind schedule. Usually it would have passed the site of the work on the Avoca Bank at 1155 hours.

1.7 The preceding train, 843, was also running behind schedule by a similar time interval, and its actual progress as plotted on the Train Control Diagram was close to 849’s scheduled time. Thus, at a glance, 843 could easily have been mistaken for 849.

1.8 The Train Control Officer (TCO) on the “West Central” position in Christchurch Train Control has jurisdiction over the Midland Line (from its origin at Rolleston), and all branch lines on the West Coast. The Midland Line and branches beyond Stillwater are Track Warrant territory, and between Rolleston and Stillwater, the line is under Single Line Automatic signalling.

1.9 When train 840 left the TCO’s jurisdiction at Rolleston, he estimated the elapsed time it would take to reach Lyttelton, unload, and return as 849. Using this estimate, and the anticipated delay, he drew a pencil line on his diagram to show 849’s projected progress, the line to be later inked over in red when the train actually re-entered and progressed through his area.

1.10 When the Ganger checked in for clearance at 1226 hours, the TCO did not notice the pencil line he had already drawn on the diagram, and marked in a time block for the Ganger from 1226 to 1530, with the requirement that the Ganger call back at 1500 hours.

1.11 The TCO failed to notice that 849’s plot line passed through the block he had allocated to the Ganger. The TCO’s 8-hour shift ended at 1400 hours, and during the handover to his relief, he also missed the confliction, and it was not until the new TCO received a call from the crew of 849 that the error was detected.

1.12 An additional opportunity to detect the confliction was when the train stopped briefly at Springfield about 1345 hours, for the crew to copy a “crossing order” (instructions concerning the passing, or “crossing” an eastbound train at Arthurs Pass), transmitted by the TCO. However, the last 20 minutes of the shift had become very busy, and this probably contributed to the TCO’s failure to see that a problem existed.

1.13 The incident was investigated by NZRL, and the TCO was at a loss to explain his uncharacteristic error. He was counselled, completed several shifts under supervision and was returned to normal duty the week after the incident.

1.14 The track work involving the digger was being conducted without protection (warning signals, signalmen, detonators) on the basis that it was being coordinated with known train movements. However, this

incident, an injury accident only three weeks earlier (see report 94-102), and a further incident just over three weeks later, have demonstrated that errors can occur, and in each

case, protection would have minimised the consequences of errors in the system.

2. FINDINGS

- 2.1 The train was being operated correctly.
- 2.2 Cumulative delays had resulted in the train's running over two hours behind schedule.
- 2.3 An earlier train, also running behind schedule, had passed the work site about 15 minutes after train 849's scheduled time.
- 2.4 The plot of the earlier train, 843, on the Train Control Diagram could have been, at a glance, mistaken for 849.
- 2.5 The TCO had failed to see the pencil line he

had drawn on the diagram for train 849 when he gave clearance for the track work to proceed.

2.6 The error was not detected during the handover period at the end of the TCO's shift.

2.7 The train crew sighted the digger in time to stop the train safely.

2.8 The Ganger had not placed protection on the line, because as far as he was aware, the train times known to him would have permitted him to carry out his work uninterrupted.

3. SAFETY RECOMMENDATIONS

As a result of the investigation into this incident, it was recommended to New Zealand Rail Limited that they:

Review the adequacy of the current protection rules applicable to track workers (033/94).

New Zealand Rail responded:

"NZRL has commenced a review of the operating rules and procedures applicable to all staff and contractors who work on or near the track.

NZRL is reviewing its current operating rules as they apply to track maintenance staff to ensure that our

systems of safe working are clear and complied with by both operating staff and management." (033/94).

29 June 1994
Chief Commissioner

M F Dunphy