

**No. 93-111**  
**L13 Shunt Service**  
**Collision with Pedestrian**  
**Ellerslie**  
**4 August 1993**

**ABSTRACT**

This report relates to the fatal injury sustained by a pedestrian when he was struck by a light locomotive, L13 Shunt Service, operated by New Zealand Rail Limited near Ellerslie Station on 4 August 1993. The safety issue identified in this report is the increase in risk to pedestrians trespassing on the railway, resulting from improved track, suspension, and engine silencing in contemporary railway operation.

# TRANSPORT ACCIDENT INVESTIGATION COMMISSION

## RAIL ACCIDENT REPORT NO. 93-111

<b>Train Type and Number:</b>	Local Shunt, L13 Shunt Service
<b>Locomotive:</b>	DH 2845
<b>Date and Time:</b>	4 August 1993, 0720 hours *
<b>Location:</b>	Ellerslie 4.50 km, North Auckland Line
<b>Type of Occurrence:</b>	Locomotive struck pedestrian on tracks
<b>Persons on Board:</b>	Crew: 2 Passengers: Nil
<b>Injuries:</b>	Crew: Nil Passengers: Nil Others: 1 fatal#
<b>Nature of Damage:</b>	Nil
<b>Information Sources:</b>	Transport Accident Investigation Commission field investigation
<b>Investigator in Charge:</b>	Mr W J D Guest

# Pedestrian

\* All times in this report are NZST (UTC + 12 hours)

## 1. NARRATIVE

1.1 The DH class locomotive left Westfield at approximately 0710 hours on 4 August 1993 to run to Auckland initially as a local shunting service. It was running "light", hauling no wagons, during the first part of its journey.

1.2 There were two locomotive engineers in the cab. The second locomotive engineer was being carried into Auckland for other duties.

1.3 The locomotive passed through Ellerslie Station and travelled under a road overbridge, entering a long left hand curve. Its speed was estimated by both locomotive engineers to be between 60 and 70 km/h.

1.4 It was dawn, but the weather was overcast and heavy rain was falling. The railway ran beside the six lane motorway of State Highway 1 at this point. Traffic was heavy and many vehicles still had full headlights on. Visibility was poor, and was estimated by one of the locomotive engineers to be between 40 and 50 metres.

1.5 The railway at the site had two tracks. As the light locomotive entered the curve, a diesel multiple unit passenger train approached on the other track. Its headlight was on high beam. The locomotive engineers in the light locomotive heard the horn of the passenger train sound.

1.6 Both locomotive engineers then saw a pedestrian walking on the track towards them. The locomotive engineer in charge applied the brakes and the other locomotive engineer sounded the horn.

1.7 The locomotive engineer was unable to stop the locomotive in the distance available to avoid hitting the pedestrian. The pedestrian, a 19 year old male, failed to jump clear in time. He was struck and fatally injured.

1.8 The locomotive engineer of the passenger train had sounded the horn to warn the pedestrian, who had

his back to him, of the presence of his train. The pedestrian had turned and looked at the passenger train, then moved away from it directly into the path of the shunting locomotive.

1.9 The pedestrian was wearing dark clothing with a balaclava or woollen hat covering much of his head. This made him more difficult for the locomotive engineers to see against a dark background.

1.10 The noise of the light locomotive could have been masked from the pedestrian by the noise of the passenger train, but it was more likely that the noise of both trains was significantly less than the traffic noise from the adjacent motorway.

1.11 Both locomotive engineers in the shunting locomotive reported that the pedestrian had his head down when they first saw him. In the heavy rain, and with a passenger train about to pass him, this could have been a natural reaction. Alternatively, the pedestrian could have been looking down to watch where he was going as he crossed the tracks. In any event, he did not see the approaching shunting locomotive.

1.12 The locomotive engineer of the shunting locomotive sent a radio message to Train Control, and the Controller contacted emergency services.

1.13 The pedestrian's residence was nearby on the eastern side of the motorway and the railway, and he had a job nearby on the western side. He was going to work and had apparently taken a short cut by walking down the railway. There were alternative safer routes available to him.

1.14 The locomotive's braking system was subsequently checked and no defects were evident.

## 2. FINDINGS

2.1 The trains were being operated correctly.

2.2 The locomotive engineers were keeping a lookout as required.

2.3 The locomotive engineer in charge of the shunting locomotive reacted promptly and correctly to the sighting of the person on the track.

2.4 The locomotive engineer was unable to stop the locomotive in the space available to avoid striking the pedestrian.

2.5 The locomotive's braking system operated properly.

2.6 There were alternative walkways available to the pedestrian.

2.7 The pedestrian was trespassing.

### 3. OBSERVATION

3.1 Since 1 April 1993 five young men aged between 19 and 29 have been killed while walking on the railway tracks in New Zealand. The record indicates that many people do not realise the danger of walking on the railway.

3.2 Technological changes over the past 20 years have made big differences to the characteristic warning of a train's approach. Some important examples of these changes are:

3.2.1 Modern locomotives are much quieter than their predecessors. The central North Island Main Trunk railway is now worked mainly by electric locomotives, which make little noise even when hauling a heavy load. The new and rebuilt diesels are better silenced, and produce less of the characteristic crankcase "thump" of the early diesels. Locomotive suspensions have improved, and many have rubber components incorporated which reduce impact noises to a large extent.

3.2.2 Many of the four-wheeled wagons have been scrapped, replaced by bogie wagons which are much smoother and quieter in their running.

3.2.3 Much of the bogie stock has improved drawgear, so that the noise produced by buffer clash is reduced.

3.2.4 Track joints are far fewer on main lines as continuous welded rail has become widespread. Heavy-weight rail is now installed on main lines, and it is supported by better sleepers (many of them concrete) on a much better quality ballast than was the case 25 years ago. The heavier, more rigid track allows trains to run more smoothly and quietly. The "clickety-click" rhythm can still be heard — but not everywhere, and especially not on main routes.

3.2.5 Train speeds have increased markedly. The old four-wheeled wagons had to be kept to a maximum speed of 50 to 55 km/h, or the risk of derailment became too

high. Bogie stock, however, can be run safely at 90 km/h. Express freight trains consisting of bogie stock used to constitute a minority of scheduled services, but they are now the rule and not the exception. Further, the improvements by way of curve easements to the North Island Main Trunk and the Main North Line (Christchurch-Picton) allow trains to maintain higher overall average speeds.

3.3 People who are not familiar with railways can find it difficult to judge the speed of trains. The bulk of a train compared to a car or truck can give a false perspective of speed. Another misconception is that the braking capability is at least as good as cars or trucks, which is quite untrue. These aspects have not changed in recent years.

3.4 In pedestrian trespass incidents, many of the victims walk between the rails, and do not watch for trains. Often, they do not become aware of a train's approach until it is too late to react and jump clear safely. In many cases it seems likely that they did not hear the noise of the train and were alerted only when the horn was sounded by the locomotive engineer.

3.5 In other accidents the pedestrians have seen the train approaching, while they have been attempting to cross the track but have misjudged its position and speed and been hit as they tried to step or jump out of the way before they were hit.

3.6 In each of these accidents, the train has been operated properly, and the locomotive engineer took prompt action upon sighting the pedestrian.

3.7 It would be impracticable for all railways in New Zealand to be fenced to a standard which prevented access to trespassers. It is an offence under statutory regulations to trespass on railways, and railway owners are entitled to operate on the assumption that they will have sole occupation of the track. Given the inability of trains to change direction or stop quickly, the right to this sole occupation is a necessity.

3.8 In the past, despite a statutory distinction, many saw the land used by the railways as almost public land which could be walked upon without serious risk. However the changes outlined above make trespassing upon the railway track a much more lethal practice than in the past, and the public at large needs to be aware that the railway track is no place for any of them to be.

3.9 New Zealand Rail Limited is undertaking a public awareness campaign to highlight the dangers, espe-

cially to children. The Commission supports this effort, and has recommended that New Zealand schools incorporate a specific module on "safety in the railways environment" in their programme.

23 September 1993

M F Dunphy  
Chief Commissioner