



**NO. 93-101**  
**TRAIN 57 SHUNT SERVICE**  
**COLLISION WITH MOTOR VEHICLE**  
**ELTHAM**  
**5 APRIL 1993**

**A B S T R A C T**

A motor vehicle travelling west on Bridge Street, Eltham, was struck by a southbound locomotive as it entered the Bridge Street level crossing. The driver and sole occupant of the motor vehicle was killed in the collision. The crossing was protected by warning lights and bells which were operating at the time of the accident.



# TRANSPORT ACCIDENT INVESTIGATION COMMISSION

## RAIL ACCIDENT REPORT NO 93-101

<b>Train Number and Type:</b>	57 Shunt Service Freight
<b>Locomotive:</b>	DC 4219
<b>Date and Time:</b>	5 April 1993, 0953 hours *
<b>Location:</b>	Marton-New Plymouth Line, 151.6 km, Bridge Street crossing, Eltham
<b>Type of Occurrence:</b>	Collision with motor vehicle
<b>Persons on Board:</b>	Crew: 2
<b>Injuries:</b>	Crew: 2 Nil Other: 1 Fatal
<b>Nature of Damage:</b>	Locomotive: minor Motor vehicle: substantial
<b>Information Sources:</b>	Transport Accident Investigation Commission field investigation
<b>Investigator in Charge:</b>	Mr A J Buckingham

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

# 1. NARRATIVE

**1.1** New Zealand Rail Limited's "57 Shunt Service" was proceeding under Track Warrant Control from Stratford towards Hawera, and consisted of locomotive DC 4219 operating light engine ( i.e. no other rolling stock attached). The locomotive was travelling "long hood leading", which is reverse direction for this class. It was crewed by two locomotive engineers; this was normal policy when operating long hood leading.

**1.2** The locomotive was coasting with the throttle at idle as it passed through Eltham; the railway line was on a slight down grade towards the south. Periodic light brake applications were made to maintain the speed at the desired level. This section of track had a speed limit of 80 km/h. The locomotive passed through the Eltham station yard at speeds ranging between 67 and 57 km/h, and as it approached the Bridge Street level crossing at the south end of the yard, the engineer braked to slow down for a section of rough track in the vicinity of the crossing.

**1.3** The locomotive's air horn was sounded about 50 m from the crossing, and the engineer observed that the crossing alarms appeared to be operating normally. The engineer noticed a Ford Escort car (JO 3319) travelling westward on Bridge Street, approaching the crossing.

**1.4** When the locomotive was some 10 m from the crossing, the engineer realised that the car driver was not going to stop. He sounded the air horn again and applied maximum braking. The car driver looked up and apparently saw the train, but was unable to avoid a collision. The car was shunted aside, and slid 13 m before coming to rest at the edge of a ditch on the western side of the railway line. The locomotive stopped some distance beyond the crossing.

**1.5** The engineer reversed the locomotive to where the car had come to rest, and called Wellington Train Control by radio, to request an ambulance. The Police and an ambulance arrived seven minutes later and established that the car driver had been fatally injured.

**1.6** The car had been struck centrally on the driver's side and was substantially damaged. The locomotive suffered a slight bend to the headstock, some scratches to the paintwork and the loss of an airbrake hose.

**1.7** The locomotive crew were relieved of duty after the accident, in accordance with company policy. Following the arrival of a relief crew, and a damage inspection by a locomotive fitter, the locomotive continued on its planned service.

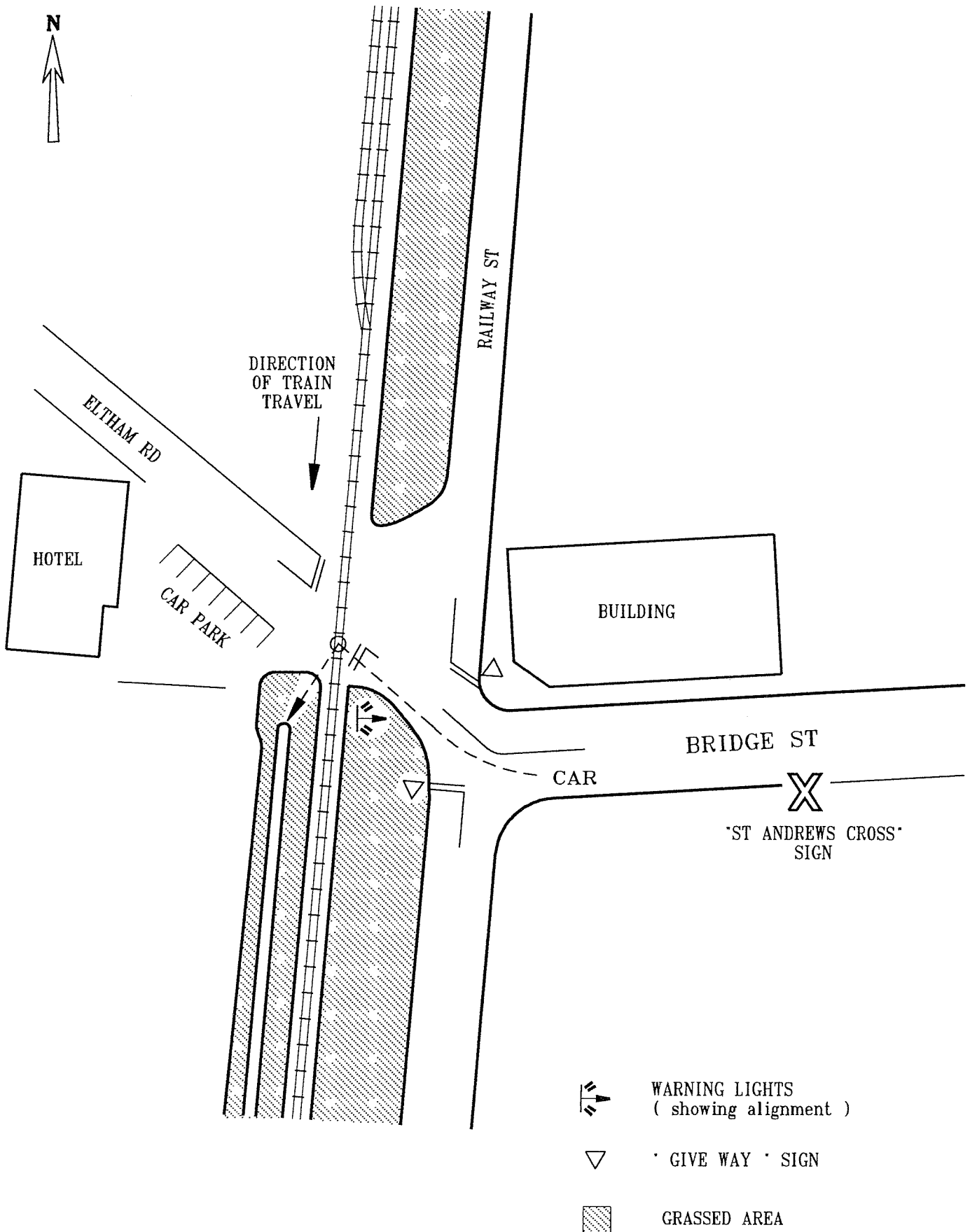
**1.8** Operation of the crossing alarms (bells and lights) was checked by New Zealand Rail signals staff, and found to be normal. Their operation was verified by a witness who had been driving toward the crossing from the opposite direction. He observed the alarms operating, heard and saw the approaching train, and was just pulling up at the crossing when the collision occurred. As the locomotive backed up towards the crossing after stopping, it reactivated the alarms, which then continued operating after the locomotive stopped adjacent to the car.

**1.9** The locomotive data recorder was isolated at the scene to preserve the recorded information, which was later printed out. The parameters recorded were: time, speed (both log speed and corrected speed), brake pipe pressure, brake cylinder pressure, throttle position, direction of travel, dynamic braking, penalty brake and vigilance light operation. The data showed that the locomotive was travelling at 57 km/h at the time maximum braking was applied, and took 19 seconds and approximately 150 m to come to a complete stop, after which it backed up for 135 m.

**1.10** The layout of the level crossing dictated that a car approaching from the east at (for example) 40 km/h, would be visible to the driver of a southbound locomotive for only three to four seconds before the car reached the railway line. By the time the locomotive engineer realised that the car was not going to stop, he would have only about one second in which to react.

**1.11** Westbound traffic on Bridge Street had to negotiate a right-hand bend (through 44°) before crossing Railway Street and the railway line (see diagram). Standard warning signs were posted on both approaches to the crossing, the "St Andrews Cross" for westbound traffic being situated on the left-hand side of the street, 75 m before the crossing. Three separate warning light standards served the crossing, with a total of five pairs of warning

# BRIDGE STREET LEVEL CROSSING , ELTHAM



lights. One set of warning lights was aligned to face westbound traffic on Bridge Street, and this set was visible from within 190 m of the crossing. The crossing itself was not directly visible to the driver on this approach until he

was within 40 to 50 m of the crossing, owing to the bend in the street and the presence of a building on the north-east corner of Bridge and Railway Streets.

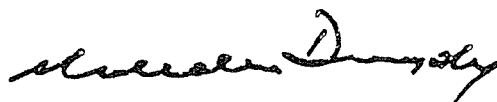
## 2. FINDINGS

2.1 The train was being operated properly prior to the accident.

2.2 The crossing alarms were functioning correctly at the time of the accident.

2.3 One set of warning lights was aligned towards the approaching motor vehicle driver.

2.4 The car driver did not respond to either the alarms or the train in time to stop clear of the railway line.



9 August 1993

M F Dunphy  
Chief Commissioner