No. 95-119

Train 2106

Ranui

17 November 1995

Abstract

A car travelling south-west on Metcalfe Road, Ranui on 17 November 1995 moved onto the level crossing while a train was approaching. The level crossing alarms, consisting of flashing lights and bells, were operating. A collision resulted in which the front seat passenger was killed. The causal factor was the car driver's fitness for driving. Safety issues identified were the dangers associated with driver fatigue.

1.15 The driver recalled the front seat passenger telling him the train was coming but again taking no action.

1.16 The driver had not been a user of this crossing before the week of the accident, having used it for the first time only four days previously. He had then used the crossing twice a day on a regular pattern until the accident.

1,17 The driver's stated work, rest and recreational pattern prior to the accident was such that for the four days before the accident he averaged three hours sleep each 24 hours. Key factors in this were a 12 hour working shift and approximately two and a half hours per day spent driving himself or relatives to and from work.

1.18 All road warning signs were correctly detailed and positioned.

Previous history

1.19 There had been four level crossing accidents at this crossing in the last 10 years, the last in 1994. This was a relatively high accident rate and for this, and other factors, the crossing was high on the TRL priority list for conversion to half arm barriers (HAB's) at the time of this accident.

1.20 In addition to the accidents, user reports indicated an abnormally high level of incidents associated with the "frustration" factor at this particular crossing. The incidents related to regular crossing users ignoring FLB's and driving over the crossing when they were operating. The reasons for the "frustration" factor which gave rise to this reported abnormally high level of incidents were two fold:

- The regular activation of the FLB's by southbound suburban passenger trains prior to the scheduled stop at Ranui. The lights and bells continued to operate while the trains were stopped at Ranui. This was a standard occurrence known to regular users, many of whom were reported as electing to cross while the alarms were operating.

- The less frequent and random activation of the FLB's by the shunting of the Caxton private siding south of Metcalfe Road level crossing. Shunts going into Caxton siding from the south could activate the FLB's at Metcalfe Road depending on shunt length. Although a cancelling feature had been built in some years ago, the FLB's could still be operating for about one and half minutes before cancellation.

1.21 Since 1994 when TRL started regular reporting of near-misses at level crossings to the Land Transport Safety Authority (LTSA) approximately 285 occurrences had been reported over a two year period of which 15 related to Metcalfe Road level crossing. There are approximately 1500 public level crossings on TRL and a smaller number of private crossings, all of which could give rise to reported near misses.

2. Analysis

2.1 The reported near misses for Metcalfe Road level crossing are the highest for any crossing in New Zealand and double those relating to the second crossing on the list. While there is no doubting the significance of the "frustration" factor in this figure it is considered the driver had not been using the crossing long enough to be aware of and affected by this particular factor experienced by regular users. Although the driver's view of the approaching train was limited, the FLB's and the LE's warning blast on the DMU's horn would have enabled a reasonably alert driver to avoid a collision.

2.2 The driver's awareness at the time of the accident was so reduced by fatigue that it is considered that the level of protection available at the crossing ie, FLB's or HAB's may not have averted this particular accident.

3. Findings

3.1 The train was being operated correctly.

3.2 The level crossing alarms were operating and were clearly visible.

3.3 The marking of the roadway and attendant signs were in accordance with current practice and adequate for the purpose.

3.4 The driver of the car had lost his awareness approaching the crossing and failed to respond to visible and audible warnings of the train's approach.

3.5 The driver's driving ability and judgement were affected by fatigue.

4. Safety Recommendations

4.1 As a result of the investigation into this accident it was recommended to the Director of Land Transport Safety Authority:

> That the LTSA review its road safety strategies to determine the best means of educating drivers on the dangers associated with driver fatigue and the most effective means of publicising ways of avoiding driver fatigue. (001/96)

4.2 Land Transport Safety Authority responded to Safety Recommendation 001/96 on 1 March 1996 as follows:

> *"Yes, LTSA intends to adopt the Safety Recommendation 001/96. Implementation is expected to be completed by 31 December 1996."*

5. Safety Action

5.1 This crossing was on the TRL priority list for upgrading from FLB's to HAB's. Standard priority reassessment following this accident resulted in the programming of this work for June 1996. TRL are aware of the "frustration" factors associated with this crossing and solutions to these problems will be considered at the time of the upgrade. TRL have advised a solution to the southbound suburban passenger problem based on average stopping times at Ranui is technically and operationally practicable. Further improvements to the Caxton shunt problem, while technically feasible, may prove impracticable operationally.

17 April 1996

M F Dunphy
Chief Commissioner

Glossary of Railway Terms

ASP	Audio Shunting Procedures.
Catch on	To attach vehicles by dropping the hook.
Consist	The locomotive(s) and vehicles making up a train.
Couple	To connect brake hoses ready for use.
Cut off	To lift the hook between vehicles.
Kicking	To separate wagon(s) by accelerating the movement a short distance in the direction that is being operated with the hook lifted.
Leading en	The front end of a locomotive or vehicle in direction of travel.
Loose shunting	Kicking or slipping.
Operator	New Zealand Rail Limited, now known as Tranz Rail Limited.
Propelling	Pushing a rake of vehicles.
Rake	A group of vehicles.
Run about	The action of detaching a locomotive from its train and reattaching it at the opposite end.
Slipping	Separating wagon(s) by pulling them, lifting the hook and accelerating the locomotive forward. After the locomotive clears, points are reversed and the following wagon(s) proceed to another road.
Uncouple	To disconnect brake hoses.