NO. 93-103

TRAIN 4622 PASSENGER SERVICE

COLLISION WITH CYCLIST

WINGATE STATION, NEAR LOWER HUTT

20 APRIL 1993

ABSTRACT

As New Zealand Rail Limited's 1655 train from Wellington to Taita was approaching Wingate one of two children cycling on the station platform fell in front of the train and sustained serious injuries. As a result of the investigation recommendations were made to improve the promulgation of safety information to school children and to impede the free access, of cyclists and skaters, down uninterrupted sloping ramps onto railway platforms.

TRANSPORT ACCIDENT INVESTIGATION COMMISSION

RAILWAY ACCIDENT REPORT NO. 93-103

Train Number and Type:	4622 Passenger Service
Unit Numbers:	EM 1119/ET 3119 and EM 1148/ET 3148
Date and Time:	20 April 1993, 1720 hours *
Location:	Wairarapa Line, 19.49 km, Wingate Station
Type of Accident:	Cyclist struck by train
Injuries:	Crew: Nil Passengers: Nil Others: 1 Serious
Nature of Damage:	Nil
Information Sources:	Transport Accident Investigation Commission field investigation
Investigator in Charge:	Mr R Chippindale

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

1. NARRATIVE

1.1 As the four unit train from Wellington was approaching the Wingate platform, under braking at an estimated speed of 40 km/h, two children riding on bicycles came into the driver's view as they entered the station platform off the southern ramp from the road overbridge.

1.2 The cyclists rode towards the up main line and as they got close to the edge of the platform the driver sounded the train's air horn.

1.3 One of the cyclists moved away from the edge but the other, an 11 year old girl lost her balance and while trying to regain it fell on to the track in front of the train.

1.4 Anticipating her loss of control the driver had applied the train's emergency brakes. The emergency braking was insufficient to prevent the train from passing over the girl and she became trapped between the front and rear wheels of the leading bogie of the first unit, and was dragged some 22 m in the centre of the track before the train was stopped.

1.5 The driver called Train Control for an ambulance as soon as the train came to rest. Together with the guard, the guard's assistant and two bystanders he gave assistance to the injured girl until the emergency services arrived.

1.6 The Wellington Free Ambulance was notified of the accident at 1723 hours and the first of two ambulances arrived at the scene at 1728 hours.

1.7 The Fire Service was notified at 1735 hours and the first appliance arrived at 1742 hours. The Officer in Charge decided he would have to await heavy lift assistance which was on its way from Wellington after he had established that his local resources were inadequate to lift the unit off the victim. The Heavy Rescue Tender from Wellington with the necessary air bags to lift the unit off the victim arrived at the scene at 1758 hours.

1.8 Requests by the Fire Service for the electric power to be switched off and trains to be prevented from passing on the southbound line were not acted upon immediately as the NZRL train control officer understood he had to clear all units from the area to be isolated before the power could be switched off. After checking with the driver of train 4622 that the "down line" was clear he let two further trains past the site for this purpose, after the Fire Service had requested such traffic be stopped. Before the electric power was isolated from the section involved the Fire Service decided sufficient safety could be achieved by lowering the units' pantographs.

1.9 The units' pantographs were lowered and the emergency services raised the unit with the heavy lift air bags. The injured person was extricated by 1827 hours and flown in a rescue helicopter, to the Wellington Hospital where she arrived at approximately 1900 hours.

1.10 The train's driver had been on leave prior to starting a normal work schedule on the day before the accident. He had 17 hours off duty before commencing the shift at midday on 20 April.

1.11 He had been with New Zealand Rail Limited for 19 years and qualified as a locomotive driver first class in 1982. He began driving the Electric multiple units, including the Ganz-Mavag multiple units in 1983.

1.12 His training had included advice on the action to be taken when trespassers were in danger which was to sound the air horn and apply emergency braking when the driver considered it appropriate.

1.13 He was trained in cardio pulmonary resuscitation, control of "Emergency" bleeding and electrical situation awareness for which NZRL held an annual proficiency check. The driver had his last annual check on his proficiency in these subjects in July 1992. The guards were trained on the same aspects of first aid but did not have an annual check on first aid. No members of the train crew were trained to the standard equivalent to that required to obtain a first aid certificate from the St John's Ambulance Association or the Red Cross.

1.14 The ramps onto the station in common with others on similar stations had unobstructed access two metres wide with a slope approximating 5 degrees.

1.15 On 16 February 1993 New Zealand Railways Limited had circulated a letter of advice to the Wellington Fire Service and the Wellington Free Ambu-

lance which included information on safe working distances from the overhead (electric) line equipment. These "Instructions for Emergency Service Personnel" on safety precautions to be observed on the Wellington suburban electrified railways stated:

> "2. The Officer in Charge of Emergency Services should not hesitate to ask for trains to be stopped or for the overhead power supply to be isolated and earthed if they consider their staff are at risk from moving trains or electric shock" and
>
> "IN ALL CASES, HOWEVER, IT IS ESSENTIAL THAT A PRIORITY MESSAGE IS SENT WITH THE MINIMUM OF DELAY SO THAT THE NECESSARY INFORMATION CAN BE PASSED TO THE RAILWAY TRAIN CONTROL OR TRACTION CONTROL AND FOR THE RAILWAY AUTHORITIES TO TAKE ANY NECESSARY STEPS TO ENSURE THE SAFETY OF EMERGENCY SERVICES PERSONNEL".

1.16 In a subsequent paragraph several telephone numbers were listed after which it was stated:

> "(a) ANY of the above contacts will arrange for the overhead line equipment to be isolated and made safe and for the stopping of train services in an emergency".

1.17 Although the Fire Service Officer first asked the locomotive engineer of train 4622 to arrange for the power to be switched off and the trains to be stopped he subsequently used the engineer's radio and, after identifying himself, emphasised he wanted the trains stopped and the power off "as a matter of urgency". He was advised that it was not that simple and steps were being taken to implement his request.

1.18 The train control officer need not have kept the trains running but there would still have been a delay in isolating the power because, although it could have been switched off promptly, it would not have been declared to be "safe" until the section of line was earthed. A further delay eventuated because neither of the linesmen dispatched to the scene, had the necessary earthing equipment readily available. It was eventually switched off some 14 minutes after train control received the first request from the locomotive engineer on behalf of the Fire Service. However the overhead line equipment was not earthed at any stage.

1.19 The Officer in Charge of emergency services would not have been so concerned about having the power isolated had he known that the EMU's pantograph could have been dropped at the push of a button, thus isolating the subject train from its overhead power supply.

1.20 All trains were stopped as soon as practicable after the accident was notified to Train Control. However subsequent, non-essential movements were made, contrary to the Fire Service repeated requests for all trains to be stopped, after Train Control had confirmed with the on scene locomotive engineer that the "down line was not obstructed".

1.21 Subsequent to this accident staff debriefings were held by NZRL officials and action taken to review their actions in the event of emergencies involving the Wellington electrified suburban railway. The consequent actions included arranging visits by Fire Service Officers to enable them to become familiar with the operation of the EMUs and to ensure they were aware of the safety precautions necessary at the scene of an accident near the overhead electric lines. The standard of response of Train Control and Traction Control duty officers to requests for the isolation of accident sites from further train movements was also reviewed.

1.22 Section 34 of NZRL (General) Regulations stated in part:

> "(1) No person shall drive or attempt to drive any vehicle including a cycle, ... onto any platform at which (NZRL) services arrive or from which such services depart except for the purposes of loading or unloading the ... vehicle into or from an (NZRL) vehicle.
>
> (2) No person shall ride or attempt to ride any ... cycle onto or upon any such platform for any purpose whatever."

1.23 There were no notices displayed to advise the children that cycling on station platforms was illegal neither was such advice promulgated to local schools.

2. FINDINGS

2.1 The driver was appropriately trained and qualified.

2.2 The train was on time.

2.3 The train's headlights were on.

2.4 The driver took the appropriate action when he saw the potential for the cyclist to be involved in an accident.

2.5 The train's braking system was correctly employed and fully serviceable.

2.6 Each of the train's units was within its routine maintenance schedule.

2.7 The train's crew took the appropriate steps to render first aid to the victim.

2.8 The train's crew were not trained in first aid at the scene of an accident to the standard required for the issue of recognised first aid certificates.

2.9 The response time for the emergency services was satisfactory in view of the need for special rescue equipment.

2.10 The New Zealand Fire Service and the NZRL management had not developed a satisfactory emergency procedure to minimise the delay in rescues from the electrified suburban rail system environment.

2.11 The Train Control Officer was not conversant with the procedures for the safety of emergency personnel at the scene of an accident involving the Wellington Electrified Area.

2.12 The "Instructions for Emergency Service Personnel" promulgated by New Zealand Rail Limited were not effectively drawn to the attention of the individual emergency service personnel by their parent managements.

2.13 As a result of the response to this incident the NZRL management took urgent and appropriate measures to improve their response to such events.

2.14 The children who were cycling on the platform, were in breach of NZRL (General) Regulations.

2.15 It was not reasonable to expect children to resist the temptation to use a long unobstructed sloping ramp from a footpath to a platform for a gravity assisted ride.

2.16 The method of promulgation of the law relating to railway operations should be improved to ensure it is communicated effectively to the public.

3. SAFETY RECOMMENDATIONS

3.1 It was recommended to the School Trustees Association that they:

> Explore the practicability of encouraging the principal of each school in New Zealand to alert their pupils to the potential hazards associated with the railway environment, not only as trespassers, but also as intending passengers or occupants of a railway platform (023/93), and
>
> Enlist the assistance of the New Zealand Railways to develop suitable instruction outlines and supporting pictorial and other aids for educating pupils about such hazards (024/93).

3.2 It was recommended to the Managing Director of New Zealand Railways Limited that he:

> Examine the practicality of erecting "crib" type barriers on the platform end of long sloping ramps, between overhead bridges and platforms, to reduce the hazard to platform users from cyclists and skaters who take advantage of these slopes(025/93), and
>
> Consider upgrading the first aid training of guards and locomotive engineers to the standard equivalent to that required by a recognised first aid organisation (026/93), and
>
> Review the present system of "in house" reexamination of locomotive engineer's first aid

ability with a view to extending it to apply to guards as well (027/93), and

Evaluate the publicity material available for educating school children on the hazards associated with playing or trespassing near railway tracks (028/93), and

Contact the School Trustees Association to facilitate the distribution of advice to all New Zealand schools on the hazards associated with playing adjacent to active railway tracks (029/93), and

Review the periodicity of distribution of publicity material to schools, in the area of NZRL operations, and the relevance of this material to the present environment (030/93).

3.3 New Zealand Rail Limited responded as follows:

"1. Associated Issues: Recommendations to community interests for follow up should be made.

2. Cribs: Erection of a barrier may reduce the speed of wheeled people at the exit from the ramp but would not stop access onto the platform where trespassers have freedom of movement on the whole platform area. In addition cribs would provide an impediment to disabled and perambulate movements to and from the platform. Barriers will not be provided.

3. First Aid Training: On train staff receive and are annually recertified on basic first aid, which includes control of Emergency bleeding and CPR. It is not proposed to upgrade this basic standard.

4. Education/Awareness: NZRL is working with Police and Community interests in an education/awareness programme directed particularly at schools but also at the Community in general."

9 August 1993

M F Dunphy
Chief Commissioner