Report 96-107

Train 2132

Passenger Incident

Boston Road Station, Auckland

28 May 1996

Abstract

At about 1620 hours on Tuesday 28 May 1996, a Papatoetoe passenger with a baby in a pushchair boarded a Waitakere train by mistake at Newmarket Station. She alighted from the train at Boston Road Station, where the train had made an unscheduled stop. The pushchair was trapped in the doors and the train moved a short distance. The passenger rescued the baby from the pushchair before the train stopped under emergency braking. A number of contributory factors were identified, but no single cause. Safety issues identified include train crew actions in the event of an unscheduled stop or platform overrun, modifications to the door operating circuitry on diesel multiple units and misidentification of trains at Newmarket Station.

Transport Accident Investigation Commission

Rail Incident Report 96-107

Train type and number:	Suburban Passenger, 2132 (DMU[1] ADL 810/ADC 860)
Date and time:	28 May 1996, 1624 hours
Location:	9.92 km North Auckland Line, Boston Road Station
Type of occurrence:	Departure while passenger alighting
Injuries:	Nil
Investigator in Charge:	A J Buckingham

[1] Diesel multiple unit

1. Factual Information

1.1 At about 1620 hours on Tuesday 28 May 1996, a female passenger with a baby in a pushchair boarded train 2132 at Newmarket Station, intending to travel to Papatoetoe. However, the train was an Auckland-Waitakere service, not the Auckland-Papakura service required by the passenger.

1.2 The passenger realised that she was on the wrong train when it began setting back, which is a necessary manoeuvre before the train can enter the line to Waitakere. She checked the Tranz Metro route diagram posted on the interior wall of the carriage and saw that the first stop was shown as Mt Eden. She decided to alight at Mt Eden Station and catch a down train back to Newmarket, although alighting at any of the stations up to and including Mt Albert would have achieved the same objective, enabling her to catch a south train from Newmarket at 1706 hours. However, she had no way of knowing this other than by reference to the Guard.

1.3 Located between Newmarket and Mt Eden Stations is Boston Road Station, where there is a crossing loop, and a platform long enough to accommodate one DMU (as was train 2132). The platform is situated at the "down" end (or Newmarket end) of the loop, which lies to the left of the main line in the "up" direction. Two "down" trains are scheduled to stop at Boston Road on weekday mornings, and two "up" trains and one "down" train are scheduled to stop on weekday afternoons. These services set down and pick up students from nearby St Peters College. The Boston Road stops are a contractual arrangement, and Boston Road is not a normal "public" stop, hence it is not depicted on the network diagram displayed on the trains. It is listed in the network timetables however. The two trains preceding 2132 were scheduled to stop at Boston Road.

1.4 Train 2132 was signalled into the loop at Boston Road to cross train 2127, the 1535 Waitakere-Auckland service. Normally the two trains would cross at Newmarket, but 2127 had been delayed slightly. As the Locomotive Engineer (LE) on 2132 saw that he was to enter the loop, he was momentarily uncertain as to whether or not he was scheduled to stop at the Boston Road platform. Knowing that some trains stopped there during this part of the day, and not having a timetable instantly available, he decided to err on the side of caution and make the stop. Although he approached the platform slowly, he experienced wheel slide as he braked and overshot the platform slightly. This placed the front set of passenger doors at the lower end of the platform ramp rather than at the platform itself. Once the train had stopped, the LE operated the Door Release control[2] for the passenger doors.

1.5 Between Newmarket and Boston Road, the Guard was in the rear car of the DMU, working his way forward as he checked passengers' tickets. He realised that his service was crossing another at Boston Road, as he noticed the "down" train on the main line when his was entering the loop. When the train stopped at the Boston Road platform, he opened the rear set of doors[3] in the rear car and stepped onto the platform. Seeing no other doors open at that point, he reboarded and gave the bell signals for the LE to close the doors and proceed.

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[2] The LE has two Door Release controls, left and right, and a Door Close control for the passenger doors. Once the LE has pressed the appropriate Door Release button, i.e. on the platform side, the doors may be opened by passengers (or the Guard) by means of individual pushbutton controls adjacent to each door set. Also at each door is a control panel for use by the Guard. There are two controls on the panel, a key-operated switch, and a pushbutton which operates a bell signal at the LE's position. When the Guard's key is inserted in the key switch and turned, the bell control at that panel is "live", and that door set is held open until the Guard removes his key. One bell instructs the LE to activate the Door Close control, two further bells means "proceed". The LE has (left or right) Doors Open annunciator lights on his console, but these merely signify that the doors have been released, not whether the doors are actually open or closed.

[3] The Guard, by the use of his key in any one door control panel, can open that set of doors without their having been released by the LE's control.

1.6 However, as the Guard reboarded, the passenger with the baby opened the front doors and alighted onto the ground, a drop of approximately one metre. She turned around to lift the pushchair, with the baby aboard, through the doorway. A male passenger assisted her by lifting on the pushchair's handlebars. With the pushchair halfway through the doors, the doors closed, trapping the pushchair. The train began to move almost immediately.

1.7 The passenger moved with the train and was able to grab her baby from the pushchair, which then fell to the ground, having sustained minor damage in the doors. The male passenger, as soon as the train started, shouted for the train to stop, and another passenger immediately operated the emergency stop control. The train stopped after having moved only several metres, four by the passenger's estimate, and nine by the Guard's.

1.8 The Guard alighted from the rear car when he noticed the passenger walking back towards the platform, carrying her baby and the pushchair. He asked if she had jumped from the train, and if she was all right. He offered to take her to Mt Eden Station where she could transfer to a "down" service, but she refused, saying that she would cross the road and take a taxi. The passenger reported that she was rather shaken at this time. She went to a nearby shop and asked a staff member to order her a taxi.

1.9 After the Guard had advised the LE of the occurrence, the train continued on its scheduled service. The Guard requested the LE to notify Train Control, and in a routine conversation with Train Control several minutes later, the LE mentioned that he had had a slight delay at Boston Road, due to "passenger confusion". At this stage, that was his perception of the occurrence, and it was not until the next morning, when the passenger telephoned Train Control, that the full story became known.

1.10 Until she was interviewed by the Investigator in Charge, the passenger had not been aware that she had alighted at Boston Road, believing that she had in fact been at Mt Eden. She was not familiar with any of the stations between Auckland and Waitakere, and based on the depiction of the network diagram showing Mt Eden as the first stop after Newmarket, assumed that the train was at Mt Eden. To passengers seated on the left side of trains arriving at Boston Road from Newmarket, the distinctive outer walls of Mt Eden Prison are clearly visible, past Boston Road Station.

1.11 The passenger stated that she had seen the Guard looking out from one of the rear doors as she alighted from the train. The Guard, however, was adamant that he had seen no doors open from when he stepped out onto the platform to when he reboarded. Another passenger, seated in a side-facing seat opposite the front doors in question, stated that the passenger with the baby had not gone to the door immediately the train stopped, but appeared to decide to leave the train only after it had been standing for some time. The elapsed time of the stop could not be determined exactly, but the LE estimated it as "three or four minutes".

1.12 The LE said that he was aware that he had overshot the platform slightly, but did not consider that it was necessary to check the train's position before releasing the doors. His estimate of the position of the front doors was part-way down the ramp at the end of the platform. He explained that overshooting platforms does occur from time to time because of wheel slide, particularly on wet days, and when a set of doors is off the level part of the platform, passengers will generally move to the next set of doors back.

1.13 It was noted by the IIC during an inspection of the Boston Road Station that it was located in a hollow lined by tall trees which were shedding leaves, there was a significant amount of leaf litter near the platform, and it appeared that the platform area would be in the shade of these trees and the nearby motorway overpasses for a large proportion of the day during winter.

1.14 During the investigation, it became apparent that passengers do board the wrong train at Newmarket from time to time. In some cases, passengers, when realising that they are on the wrong train, have forced the doors and jumped out onto the ballast while the train is moving, thereby placing themselves at significant risk. The trains' destinations are displayed on destination indicators, similar to those found on buses, at each end of the train. In this instance, the passenger said that she had seen the "Waitakere" caption on the train as it pulled into the station, but boarded despite this. Waitakere trains, when stopping at Newmarket, stop at the same place as trains continuing south to Papakura, both having arrived from the direction of Auckland Station.

1.15 A new passenger shelter has been provided at Newmarket, to the south of the original station building, which is now disused. A public address system is still in place, with train announcements being made by the Signalman in the Newmarket Signalbox to the north of the old station. However, the speakers are still fixed to the verandahs of the old station building and their effectiveness is considerably reduced by the distance from the new shelter. Also, the announcement of trains is a variable practice at present.

2. Analysis

2.1 The initiating event in this incident was the passenger's boarding the wrong train at Newmarket. However, this particular error does occur at Newmarket from time to time, and peoples' reactions when they discover that they are on the wrong train do differ.

2.2 In this case, the passenger made a reasonable decision, in that she would alight at Mt Eden and transfer to the next service back to Newmarket. This would have meant a wait at Mt Eden, but would have returned her to Newmarket in time to catch a southbound train to Papatoetoe. In fact, she could have alighted at any of the stations between Mt Eden and Mt Albert (inclusive) and still caught the "down" service back to Newmarket, but had no way of knowing this at the time other than by reference to the Guard.

2.3 The unscheduled stop at Boston Road introduced an element of confusion, in that the passenger genuinely believed that she was at Mt Eden. This perception would have been reinforced by the absence of Boston Road from the network diagram, and the unmistakable presence of Mt Eden Prison close to the station.

2.4 The LE stopped at the Boston Road platform because of a momentary uncertainty as to whether or not his train was scheduled to stop. Had there not been a crossing, he would not have been switched into the loop and would have continued through on the main line without stopping. Because of slippery conditions, a slight overshoot placed the front set of passenger doors near the bottom of the platform ramp, resulting in a drop of the order of one metre to be negotiated by anybody who elected to exit via that door. Despite the drop, the passenger decided to alight then lift the pushchair and baby off the train. The height of the door sill from the ground would have been a challenge to most passengers, and a more appropriate action would have been to go to the next set of doors to the rear. These would have been over the platform, affording a safer egress.

2.5 Although the stop was unscheduled, the Guard treated it as a normal stop when he saw that the train had stopped at the platform; he opened the rear doors and stepped off as a matter of routine. On checking that no other doors were open, he reboarded and sounded the appropriate bell signals to the LE. Although the passenger said she saw the Guard looking out from the rear car, it is scarcely credible that he would have failed to see her, let alone cause the train to move off while she was still part-way through unloading the pushchair. A likely scenario is

that the passenger's alighting coincided with the Guard's reboarding, and the observations of the passenger sitting opposite the front doors tend to bear this out.

2.6 In view of the LE's estimate of the time taken at the stop, a possibility is that the Guard felt that a second look outside was not necessary after giving the doors close bell signal, having determined that there was nobody getting on or off the train. As it was an unscheduled stop, the Guard did not expect anyone to disembark.

2.7 In any event, what could have become a desperate situation was averted by the prompt operation of the emergency brake control by one of the other passengers on board.

2.8 The situation where passengers sometimes board the wrong train at Newmarket is one which Tranz Metro is acutely aware of, and is discussed under "Safety Actions". Other actions taken or considered by the operator, to minimise the possibility of a similar type of incident are also discussed under the same section.

2.9 No single event could be said to be the cause of this incident. Contributing factors included:

- The passenger's boarding of the wrong train.
- An unscheduled stop at an intermediate station not portrayed on the network diagram available to passengers on the train, thereby confusing the passenger.
- A slight overrun of the platform on stopping.
- A decision by the passenger to alight in a precarious situation.
- The probably contemporaneous reboarding by the Guard and the alighting by the passenger.

3. Findings

3.1 The passenger boarded the wrong train at Newmarket, but decided on an appropriate course of action to retrieve the situation.

3.2 The train made an unscheduled and unnecessary stop at Boston Road platform after being signalled into the loop to cross another train.

3.3 The passenger's assumption that the train had arrived at Mt Eden was reasonable under the circumstances.

3.4 The train overshot the Boston Road platform slightly, placing the front passenger doors close to the lower end of the platform ramp.

3.5 The degree of overshoot was probably underestimated by the LE.

3.6 The consequent drop from the door sill to the ground was likely to have been awkward for any passenger.

3.7 A safer exit would have been the next door to the rear.

3.8 The passenger's alighting probably coincided with the Guard's reboarding after checking the doors from outside, and went unnoticed.

3.9 The train crew were unaware that the passenger had alighted until the train stopped under emergency braking.

4. Safety Actions

4.1 To minimise the possibility of a recurrence of this type of incident, the following actions have been taken by Tranz Rail Ltd:

4.1.1 The Terminal Manager, Westfield issued an instruction to LEs on 29 May 1996, directing that if their train (referring to "up" trains) was signalled into the loop at Boston Road and the train was not scheduled to stop, they were to pass the platform and pull up to the departure signal at the north end of the loop. The instruction provided for modification of this procedure on the condition that the LE and Guard conferred and came to a full understanding of what was intended. Additionally, LEs were instructed that if they overshot a platform when stopping, they were to confer with the Guard before releasing the doors.

4.1.2 The General Manager, Tranz Metro, Auckland has proposed an amendment to (Tranz Rail) Rule 112, "Train Overrunning or Stopping Short of Platform" to set out more fully the actions to be taken by train crews in that event.

4.1.3 The Tranz Metro operations Supervisor, Auckland, issued a Staff Bulletin on 30 May 1996, reminding Guards that they were to recheck doors[4] after giving the "doors close" signal and before giving the "proceed" signal.

4.2 Safety issues under active consideration at the time of this incident included:

4.2.1 The finalising of the design of modifications to the door operating electrical circuits. The proposed modifications include the installation of door microswitches to operate a "doors closed" annunciator light at the driving consoles, in the passenger saloons and at each door, and the provision of a Guard's control at each door in order that the Guard can close all doors from any one position. Control of doors opening, rather than door release as at present, would be from the driving console.

4.2.2 The improvement of conditions at Newmarket Station to minimise confusion between trains destined for Waitakere or Papakura. Alternative public address systems have been considered, but a final decision has yet to be made, in light of imminent reconstruction of the Newmarket signalbox. Passenger shelters and platform access are being, or will be, upgraded.

21 August 1996

M F Dunphy
Chief Commissioner

[4] The full procedure is outlined in the Rail Operating Code Supplement R4.10 as follows:

"... The Guard is to visually check all passengers are on/off and clear of doors and when ready sound one bell - this is the signal for the Locomotive Engineer to close the doors.

The Guard is to visually check that all other doors except his (which has the key in) are correctly closed and nothing is caught between the bi-parting doors."