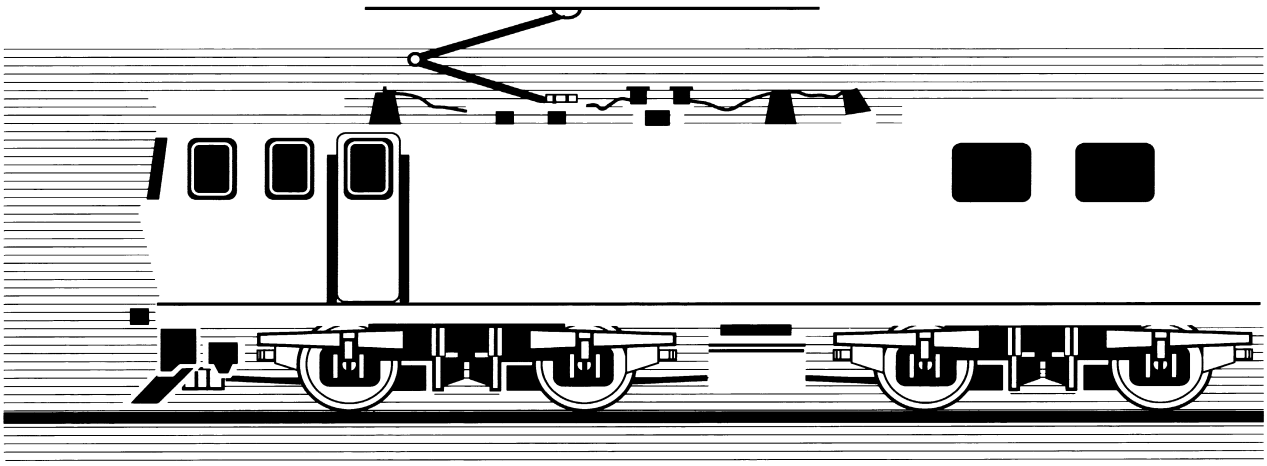
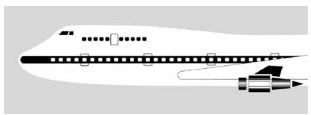
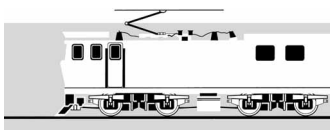


RAILWAY OCCURRENCE REPORT

04-119 **Diesel multiple unit passenger Train 3358, signal passed at Stop and wrong line running irregularity, Tamaki** **28 July 2004**


TRANSPORT ACCIDENT INVESTIGATION COMMISSION
NEW ZEALAND

The Transport Accident Investigation Commission is an independent Crown entity established to determine the circumstances and causes of accidents and incidents with a view to avoiding similar occurrences in the future. Accordingly it is inappropriate that reports should be used to assign fault or blame or determine liability, since neither the investigation nor the reporting process has been undertaken for that purpose.

The Commission may make recommendations to improve transport safety. The cost of implementing any recommendation must always be balanced against its benefits. Such analysis is a matter for the regulator and the industry.

Report 04-119

diesel multiple unit passenger Train 3358

signal passed at Stop and wrong line running irregularity

Tamaki

28 July 2004

Abstract

On Wednesday 28 July 2004 at about 1320, during a wrong line running operation, Train 3358, a Tranz Metro[1] Papakura to Britomart diesel multiple unit passenger train, passed Signal 8B at Tamaki, at Stop, without verbal authority. The train continued on the Down main towards Britomart Station without the required Track and Time Permit. There was no conflicting movement approaching Train 3358.

Safety issues identified included:

- the training regime for locomotive engineers multiple units
- the identification of limits for wrong line running.

One safety recommendation has been made to Connex Auckland Limited and another made to ONTRACK to address the issues.

[1] Tranz Metro was the group within Toll NZ Consolidated Limited with the responsibility for the operation of the suburban train services in Auckland.

Contents

Figures

Abbreviations

CRM	crew resource management
DLAS	double line automatic signalling
DMU	diesel multiple unit
LEMU	locomotive engineer multiple unit
m	metre(s)
OJT	on-the-job training
Toll Rail	Toll NZ Consolidated Limited
UTC	coordinated universal time
VDU	visual display unit
WLR	wrong line running

Data Summary

Train type and number:	diesel multiple unit passenger Train 3358
Date and time:	28 July 2004**,** at about 1320[2]
Location:	Tamaki
Persons on board:	crew: 2 passengers: 23
Injuries:	nil
Damage:	nil
Operator:	Toll NZ Consolidated Limited (Toll Rail)
Investigator-in-charge:	P G Miskell

[2] Times in this report are New Zealand Standard Times (UTC + 12) and are expressed in the 24-hour mode.

1 Factual Information

1.1 Narrative

1.1.1 On Tuesday 27 July 2004, the network controller issued an information bulletin that included details of planned track maintenance work to be undertaken the next day on the Up main between Tamaki and Auckland. The bulletin detailed provisions for Up trains to run on the Down line from Tamaki to Auckland with the authority of a Track and Time Permit[3] (Mis 60).

1.1.2 On Wednesday 28 July 2004, Train 3358 was a scheduled diesel multiple unit (DMU) passenger service from Papakura to Britomart Station (Auckland) (see Figure 1). The train departed Papakura at about 1220 and was crewed by a locomotive engineer multiple unit (LEMU) and a train manager.

1.1.3 At about 1242, a crew change took place at Westfield Station and the incoming LEMU (LEMU1) assumed responsibility for the remaining journey to Britomart.

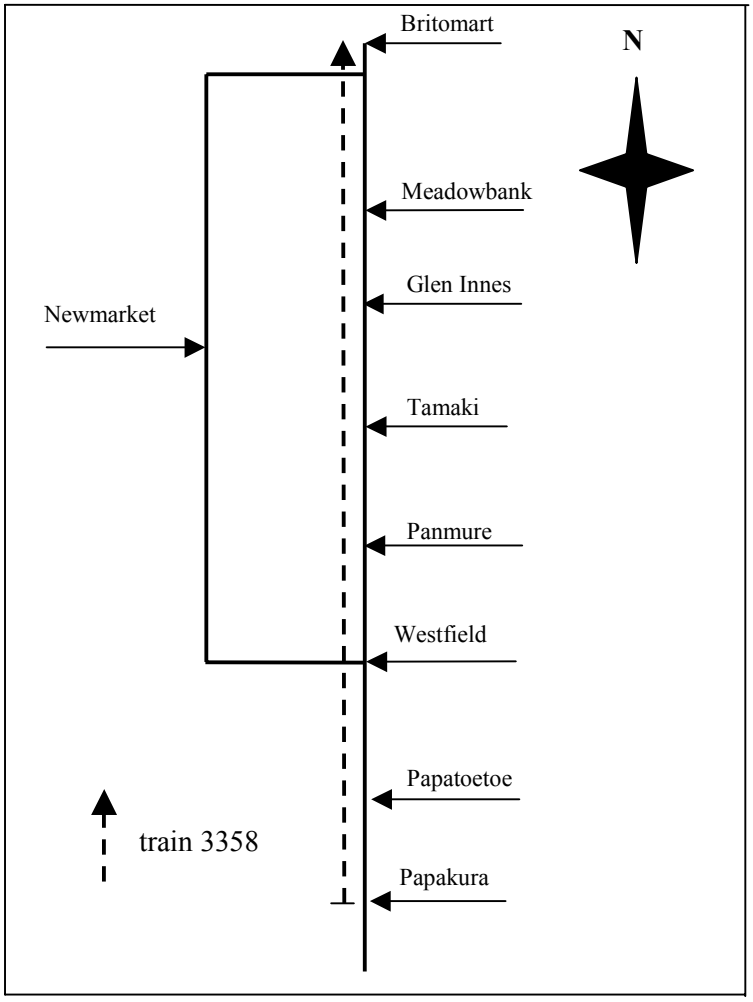


Figure 1
Route of Train 3358 from Papakura to Britomart Station (not to scale)

[3] A Track and Time Permit is a numbered authority issued by train control to protect train movements on the line where additional safeguards are necessary. The Mis 60 must be transmitted to and repeated back by the addressees concerned in the order listed on the Mis 60 (signalman, then the locomotive engineer, then the person in charge).

1.1.4 Another LEMU (LEMU2), who was repositioning from his Westfield Depot to take up the running of a Britomart to Waitakere (via Newmarket) DMU passenger service, travelled in the driving compartment with LEMU1.

1.1.5 At about 1253, LEMU1 stopped his train short of Signal 16AC, the Up Home Signal at Tamaki, and queried the signalman[4] as to why the signal was displaying a red aspect. The signalman explained that passenger service Train 3367 and shunting services L71 and L61 would pass him on the Down main and that his train would then be signalled over to the Down main as soon as the movements were clear of 15 points at Tamaki (see Figure 2).

Figure 2
Signal 16AC, Up Home Signal at Tamaki

1.1.6 At about 1318, the signalman advised train control that shunting service L61 had cleared 15 points. He then set the route for Train 3358 to enter the Down main.

1.1.7 LEMU1 saw 15 points move to the reverse (diverging route) position and a low speed light appear on Signal 16AC. He moved his train forward on to the Down main (see Figure 3) and continued past Signal 8B, the Up starting signal from the Down main at Tamaki which was at Stop.

1.1.8 At the time Train 3358 passed Signal 8B, LEMU1 neither had a Mis 60 authority to continue towards Britomart, nor had he received verbal authority from the signalman to pass the signal at Stop.

[4] The signalman was the operator of the Auckland signalpanel.

1.1.9 The signalman saw on his visual display unit (VDU) that the track ahead of Signal 8B had become occupied, and he called train control to ascertain whether a Mis 60 had been issued to LEMU1 to authorise the movement. The train controller's response to the signalman was that he had not prepared the Mis 60 authority, and that he would contact LEMU1 by radio and instruct him to stop his train.

1.1.10 After about 2 minutes and having received no radio response from LEMU1, the train controller arranged for the signalman to hold the next facing signal, Signal 111, that controlled the entry of Train 3358 into Britomart Station, at Stop.

1.1.11 As there was no conflicting train movement on the Down main, the train controller subsequently instructed the signalman to berth the train at the platform rather than hold the train at Signal 111.

1.1.12 Train 3358 berthed at Britomart at about 1342.

1.2 Site information

1.2.1 The North Island Main Trunk from Papakura to Auckland was double line[5] and was controlled by Double Line Automatic Signalling (DLAS).

1.2.2 The movement of trains between Tamaki and Britomart Station was controlled from the train control centre in Wellington.

1.2.3 Tamaki was an interlocked station with a "switch out" facility. The station was usually operated in the "switched out" mode, meaning that all signals and points levers were in the "normal" position. On the day of the incident Tamaki was "switched in" to allow wrong line running (WLR). In this case, WLR allowed Up trains to run on the Down main line under controlled conditions. When Tamaki operated as a "switched in" station its signals were controlled by the signalman at Britomart.

1.2.4 Figure 3 shows the route set by the signalman for Train 3358 to depart Tamaki.

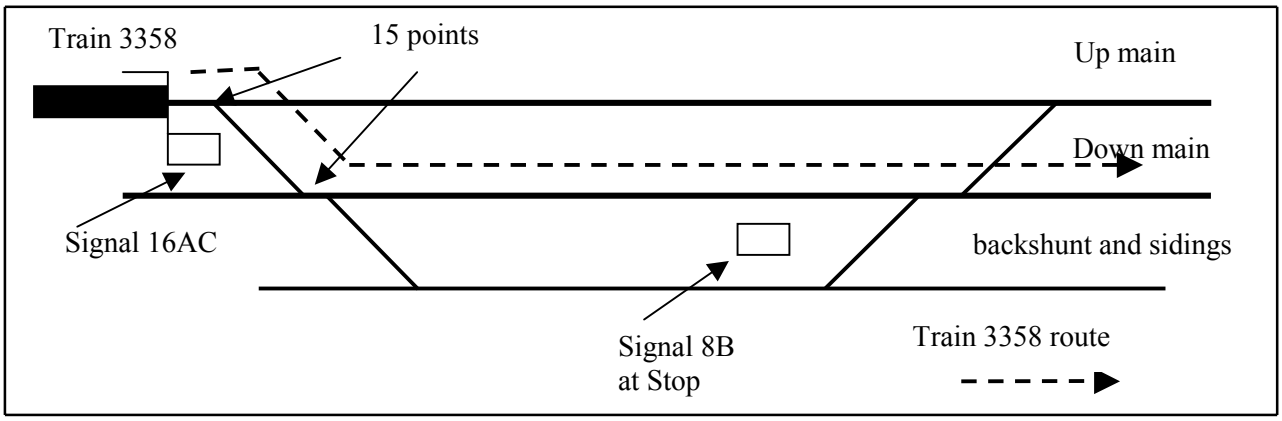


Figure 3
Route set for Train 3358 to depart Tamaki Station (not to scale)

[5] In double line territory, trains normally travelled on the left-hand track in the direction of travel.

1.3 Rail Operating Rules and Procedures

1.3.1 Rule 1 of Toll Rail's Operating Rules and Procedures for DLAS stated in part:

> **1. Trains Not to Set Back**
>
> (a) Trains must not be set back after leaving a station, or run on the right-hand line in the direction of travel except:
>
> (i) When authorised by a Mis 60.
>
> **(c) Wrong Line Running:**
> Train Control must:
>
> - Ensure the line is clear for the movement
> - Endorse the details of the last train to clear the section on the Mis 60
> - Ensure the controlled signals at the entrance to the affected area are held at Stop and the levers/controls concerned are tagged/collared or blocked to prevent the signals from being cleared
> - Authorise the wrong line movement by Mis 60
> - Issue the Mis 60 to the Signalman who controls any signal involved with the wrong line movement then to the Locomotive Engineer of the train running on the wrong line.
>
> (i) **Wrong Line Running Section:** Must wherever possible be confined to a section where there are fixed signals controlling movements over the crossover road. Where there is no fixed signal for the movement either arriving or an interlocked station, the movement must not pass a point alongside the outermost controlled signal on the opposite line at the station until authorised by the signalbox
>
> (ii) **Verbal Authority to Pass signal at Stop:** If a signalman is required to verbally authorise a movement past a signal at Stop, authority must first be obtained from Train Control.

1.3.2 Rule 104 of Toll Rail's Operating Rules and Procedures stated in part:

> **104. Locomotive Engineer in Charge of the Train -**
> A train is in the charge of the Locomotive Engineer who is responsible for its safe running. He must be sufficiently familiar with the track over which he is required to work to ensure that he can maintain full control of his train at all times and have a thorough knowledge of any special instructions and signals controlling the movement of trains over that track.

1.4 Information bulletins

1.4.1 Information bulletins were dated, unnumbered documents prepared by the Network Control Centre in Wellington, and issued the day before they were due to come into effect. Each bulletin applied to a specific section of track for one day of operation only, and included information on general daily instructions and details of planned track maintenance work.

1.4.2 Information bulletins were part of the documentation held by the locomotive engineer of every train passing through an area to which the bulletin applied.

1.4.3 The information bulletin dated 27 July 2004 described methods for protecting track maintenance work sites on all lines east and north of Te Rapa and is incorporated in this report as Appendix 1. For the work site on the Up main between Tamaki and Britomart, WLR was in effect, meaning that the Up trains travelled from Tamaki to Britomart on the Down main. DMUs could only enter the WLR track section after the LEMU had obtained the appropriate authority.

1.4.4 The pro forma Mis 60 authority included with the daily bulletin stated in part:

> **Special Conditions**:
>
> **Tamaki:** Up trains must not pass 8B Shunt and Up Starting from Down Main, and or 8C, Shunt and Up Starting from Sidings, signals until authorised by Signalman, Auckland Signalpanel.

1.4.5 On 7 June 2005, Toll Rail management advised in part:

> The information contained in the Information Bulletin was confusing. It should be added that this was probably of lesser relevance on this occasion given the Locomotive Engineer's apparent scant reference to the details, but nevertheless had potential to confuse other locomotive engineers.
>
> The authority for wrong line running on the pro forma Mis 60 implied authority to run from Auckland to Tamaki when the reverse was the case. The defined limits were between No.111 signal at Auckland and No.4 signal at Tamaki.

1.5 Radio communication

1.5.1 Section L1 of Toll Rail's Working Timetable stated in part:

> **2.2 RADIO COMMUNICATION: AUCKLAND SUBURBAN AREA**
>
> **Tamaki**
> There is poor radio coverage in Tamaki Station limits to Auckland Signalpanel on Channel 1 and 5. When there is a need to call the Signalpanel from the area between the mainline points at each end of the station then use a cellphone (09 270 5416 Ext 98416) or ask Train Control if you can speak to the Signalpanel on the Train Control radio system.

1.5.2 Radio communication between the signalman and train crews is not recorded.

1.6 Personnel

Locomotive engineer of Train 3358 (LEMU1)

1.6.1 LEMU1 was recruited by Tranz Metro Auckland and started his induction and theory training on 14 April 2003 at Tranz Rail's Auckland training facility. His initial 2-week training period covered Signals rules, General rules including bulletins, the Working Timetable and the Rail Operating Code. On completion of this training period he had ridden with LEMUs for a week observing what had been covered in the classroom.

1.6.2 Following the week with the LEMUs he spent a further 2 weeks in the classroom covering Centralised Traffic Control, DLAS, including WLR and bulletins. On 16 May 2003, the trainees were examined on these topics. LEMU1 did not pass this examination, but did pass a second examination a week later.

1.6.3 On 18 July 2003, after completing further classroom training and competency assessments, LEMU1 started his practical on-the-job training (OJT) with a minder driver. As part of his OJT he was required to complete a minimum of 350 driving hours plus 50 return trips between Papakura and Britomart and 30 return trips between Britomart and Waitakere.

1.6.4 As part of his training before completing his OJT hours, LEMU1 spent a Sunday working under simulated Mis 60, Mis 59[6] and Mis 39[7] situations. He gained full LEMU certification on 23 April 2004. LEMU1 said that he had not experienced WLR since gaining his certification.

1.6.5 After LEMU1 gained full certification he had 5 safety observations between 29 April and 12 July 2004. There were no areas of concern identified during the safety observations.

1.6.6 On the day of the incident, LEMU1 started his shift at 1205, at his home depot of Westfield, about 40 minutes before taking up the running of Train 3358. He signed for his train documentation that included speed restriction advices and an information bulletin. He said that he noted there was a Mis 60 running in place for WLR between Tamaki and Britomart.

1.6.7 While reading the work orders, he had discussions about proposed roster changes with his team leader and another LEMU. At about 1235 he left the book-on room and walked across the over-bridge to Westfield Station in readiness for taking over the running of Train 3358 some 10 minutes later. He was accompanied by LEMU2 and they too discussed the pending roster changes as they waited for the train.

1.6.8 Train 3358 departed Westfield Station at about 1245, after the LEMU changeover, and stopped at Panmure Station for passenger work. After departing Panmure, LEMU1 observed that the next intermediate signal[8] was at yellow and Signal 16AC displayed a red aspect.

1.6.9 At about 1253, LEMU1 said he stopped his train at Signal 16AC and radioed the signalman, identified his train number and location and said that he was advised by the signalman that after a Down passenger service and 2 following shunting services cleared Tamaki "you'll be right to go".

1.6.10 While waiting for the trains to clear, LEMU1 and LEMU2 continued their discussion on the proposed roster changes. At about 1320, LEMU1 saw 15 points move to the reverse position and Signal 16AC change to a low speed aspect. He said he considered that that was his authority to travel on to Britomart.

1.6.11 LEMU1 said he did not have authority from the signalman to pass Signal 8B Tamaki at Stop, nor did he hold a Mis 60 authority to proceed from Signal 4AC Tamaki to Signal 111 Auckland as required by the information bulletin (see Figure 4).

1.6.12 Toll Rail advised that there had been no significant changes proposed to LEMU1's roster. However, for whatever reason the roster appeared to be of concern to him.

The signalman

1.6.13 The signalman had worked for Tranz Rail and its predecessors since 1970. He had worked the Auckland signalpanel for about 20 years. He was the team leader responsible for the operation of the signalpanels at Te Rapa, Otahuhu, Newmarket and Auckland.

[6] A Mis 59 is the authority form to pass a departure signal.
[7] A Mis 39 is the authority form to recover a disabled train.
[8] Intermediate signals were provided where necessary in DLAS areas to divide the line into shorter sections and to control the entry of trains into such sections. When an intermediate signal displays a yellow aspect the driver must be prepared to stop at the next signal.

1.6.14 On the day of the incident, he started work at 1230 and by 1250 had completed the handover with the outgoing signalman. When Train 3358 arrived at Signal 16AC at Tamaki, the signalman received a call from LEMU1 enquiring why the signal was at red and why his train was stopped. The signalman informed LEMU1 that a passenger service and 2 shunts were travelling on the Down main to Westfield and that as soon as they were clear, his train would be signalled on to the Down main line. As a further precaution, the signalman called the locomotive engineer of the second shunt service and asked him to call when he was clear of the south crossover at Tamaki.

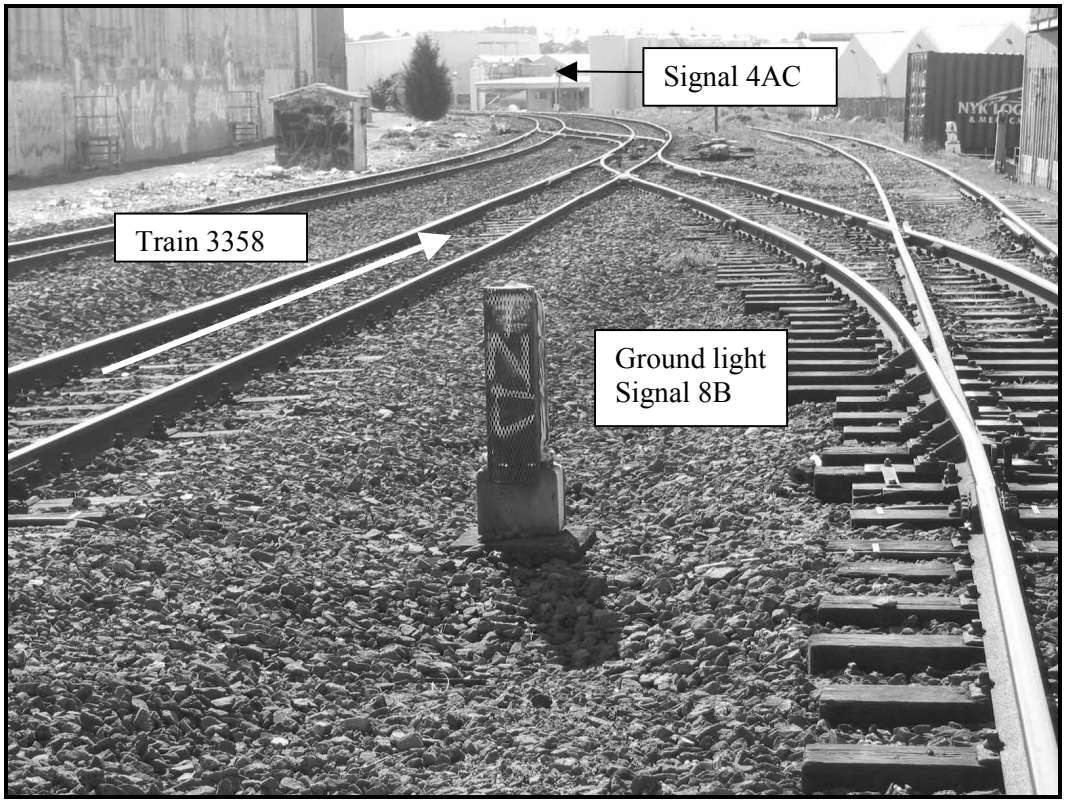


Figure 4
Signal 8B, Shunt and Up starting from Down main, Tamaki

1.6.15 At about 1318, the signalman received confirmation from the locomotive engineer of shunt L61 that he was just going through the south crossover. He noted the time and called the train controller to confirm that the second shunt on the Down main, L61, had cleared Tamaki at 1318. The signalman then reversed 15 points, cleared Signal 16AC to give Train 3358 a low speed light across to the Down main and kept the next signal in advance, Signal 8B, at Stop.

The train controller

1.6.16 The train controller had gained certification on the Auckland train control desk on 28 February 2003. He had previously been certified on both the East Coast Main Trunk and Central desks. His certification was current for all 3 desks.

1.6.17 The train controller received a call from the signalman confirming that Train 3358 had arrived at Signal 16AC Tamaki, and they agreed to hold the train there until the Down passenger train and 2 shunts cleared the Down main line through Tamaki. Once this had happened, the signalman was to contact the train controller who would then prepare the Mis 60.

1.6.18 At about 1318, when he received advice from the signalman that the last train had cleared the Down main line at Tamaki, the train controller began to prepare the Mis 60 by drawing the plot line for Train 3358 on the train control diagram. However, before he had completed the Mis 60, the signalman called to report that Train 3358 had passed Signal 8B without authority.

1.6.19 The train controller tried to call LEMU1 by radio via the Auckland repeater but received no response, so he contacted the signalman and together they agreed that Train 3358 would be held at Signal 111, the outer limit of the WRL, but later agreed that the train could berth at Britomart Station.

1.6.20 After the train had berthed, LEMU1 was instructed by the platform manager to contact the train controller by telephone. As a result of their discussion, the train controller later said he felt that LEMU1 was unaware that he required a Mis 60 authority to proceed beyond Tamaki, and also that LEMU1 told him he was on a signalled move and had a light to depart Tamaki.

LEMU2

1.6.21 LEMU 2 had undertaken his classroom training at the same time as LEMU1. After completing his OJT, LEMU2 gained his certification in April 2004.

1.6.22 On the day of the incident, LEMU2 arrived at work about an hour earlier than his scheduled book-on time of 1240. He received the train documentation pertaining to his shift and went through the bulletins to see what, if any, restrictions would impact on his shift. He said that he had looked at the times for the Mis 60 running between Tamaki and Britomart and decided that because his first train through the affected area was after the scheduled completion of the Mis 60 running, there was no need to read the detailed information on the last page of the bulletin.

1.6.23 When Train 3358 departed from Westfield Station, LEMU2 said he travelled as a passenger but was sitting in the "guard's seat" to the left of LEMU1, and with his back to the front window. The 2 LEMUs discussed pending roster changes while travelling between Westfield and Tamaki.

1.6.24 LEMU2 said that when Train 3358 moved from Signal 16AC, he had glanced out the front window and saw a low speed aspect on the signal and that 15 points were in the reverse position. He said he then resumed his original seated position with his back to the direction of travel and did not see Signal 8B as the train approached it.

1.7 Locomotive event recorder

1.7.1 The DMU was not equipped with a locomotive event recorder.

2 Analysis

2.1 The Mis 60 Track and Time Permit was the standard procedure for managing movements on the wrong line in DLAS territory outside station limits. On the day of the incident, WLR was instituted so that planned track maintenance work that required total occupation of a defined section of the Up main line could proceed while causing minimal delays to suburban passenger train schedules.

2.2 The daily bulletin that included details of the WLR was prepared and distributed in accordance with Toll Rail's standing instructions. Included in the bulletin was a pro forma Mis 60 on to which the LEMU would enter current details. The special conditions contained in the Mis 60 clearly stated that trains were not to pass Signal 8B or Signal 8C until authorised by the signalman, Auckland signalpanel.

2.3 The LEMU roster allowed a 30-minute time span between a LEMU booking on and taking up the running of the first scheduled service. This time was for LEMUs to obtain and peruse documentation relevant to the running of their trains before taking up driving duties. In this case LEMU1 booked on in accordance with the roster and there was ample time for him to have read the contents of the information bulletin and seek guidance before taking over the running of Train 3358 had he not understood the instructions.

2.4 However, LEMU1 was preoccupied by his discussions with both his team leader and a colleague about pending roster changes and had not read all pages of the daily bulletin. Therefore, he was probably unaware that WLR was in place between Tamaki and Auckland for the first leg of his shift when driving Train 3358 from Westfield. Had LEMU1 read and understood the bulletin he would not have needed to call the signalman and ask why Signal 16AC at Tamaki was at Stop.

2.5 Train 3358 sat at Signal 16AC for about 27 minutes, ample time for LEMU1 to review the information bulletin and discuss it with LEMU2 or the signalman if further explanation was necessary. Had LEMU1 referred to the bulletin during this time, he would have been left in no doubt from the wording of the instruction on the pro forma Mis 60 that he needed authority before passing Signal 8B at Stop.

2.6 Signal 8B was a ground light which nearly always displayed a Stop indication. It would display a Proceed indication only when a shunt service was lifting or placing wagons in the siding and the shunt service had authority to cross from the Down main to the Up main. DMUs would be required to pass the signal only when the Up main from Tamaki was unavailable and WRL was operating.

2.7 There were 2 alerts available to LEMU1 that Signal 8B would be at Stop. Firstly, the instruction contained within the special conditions of the information bulletin that required him to obtain authority from the signalman to pass Signal 8B at Stop and secondly, even if WLR had not been in operation, the low speed aspect on Signal 16AC should have alerted LEMU1 that the next signal in advance would be at Stop.

2.8 However, because of LEMU1's preoccupation with pending roster changes he continued these discussions with LEMU2 and made no reference to his train documentation. This preoccupation probably distracted him from his driving duties. LEMU1 had recognised the low speed aspect on Signal 16AC after L61 shunt had cleared the south end cross over at Tamaki and was aware that his next signal in advance would be at Stop. However, had he not been distracted by both his preoccupation with proposed roster changes and the presence of a second person in the driving compartment he may have recognised the red aspect on Signal 8B and sought authority from the signalman before passing the signal.

2.9 Crew Resource Management (CRM) is a general term covering crew management in highly operational situations, for example on ships, in control rooms of power plants, in aircraft and in medical operating theatres.

2.10 The way human beings interact, communicate and make decisions in such situations is quite similar. Equally, errors in such circumstances are also similar. Training in this area was developed in the airline industry as a result of research showing that most aircraft incidents occurred as a result of management and communication errors rather than technical malfunction.

2.11 Examples of common CRM failings are preoccupation with minor technical problems, failure to delegate the tasks and assign responsibilities, failure to communicate intent and plans, and failure to detect and challenge deviations from standard operating procedures. The principles of CRM extend to other people in the system such as, in this case, the signalman and LEMU2. LEMU2 had read the daily bulletin and was aware that WRL was operating between Tamaki and Auckland. However, for whatever reason he did not bring this fact to the attention of LEMU1 while they were waiting for 3 trains on the Down main to clear Tamaki. Had he done so, the incident would probably not have occurred.

2.12 When the signalman received the call from LEMU1 to ask why Train 3358 was stopped at Tamaki, he probably thought that the intent of the enquiry was how long the delay at Signal 16AC would be. The signalman would have expected that LEMU1 had read and understood the daily bulletin and was aware that WLR was operating between Tamaki and Auckland.

2.13 However, because of LEMU1's relative inexperience, he may have misinterpreted the signalman's response, that the route for Train 3358 would be set after 3 Down trains cleared Tamaki, as being authority to continue the journey to Britomart. At the time of the incident, LEMU1's exposure to rail operations was limited to about 15 months, of which 12 months were taken up with training. Although he had been certificated for 3 months, he had not experienced a shift where planned WLR had occurred and his last familiarisation with WLR had been during a simulated training exercise some 6 months before.

2.14 The signalman responded immediately and appropriately when he suspected Train 3358 had passed Signal 8B at Stop without authority. He ascertained from the train controller that a Mis 60 had not been issued to the driver of Train 3358. Although initially planning to stop Train 3358 at Signal 111, the train controller and the signalman agreed that because there was no other train in the section ahead, it was safe for the train to continue towards Britomart.

2.15 The apparent lack of knowledge of the rules relating to Mis 60 operation and WLR by both LEMUs is a matter of concern, especially as both had only recently completed their DMU driver certification. A safety recommendation has been made to the General Manager of Connex Auckland Limited[9] to address this issue.

2.16 The starting point for the WRL operation was defined as non-facing Signal 4AC. In practice, the entrance to the WLR section was Signal 8B some 265 m before reaching Signal 4AC. A LEMU was required to have both authority from the signalman to pass Signal 8B and a valid Mis 60 authority issued by the train controller to enter the WRL section. A safety recommendation has been made to the Chief Executive of ONTRACK to address this issue.

2.17 It was likely that the radio on Train 3358 remained on the local channel after LEMU1 contacted the signalman on arrival at Tamaki. Had LEMU1 selected the scan option before passing Signal 16AC, he would probably have responded to the train controller's instruction, via the Auckland repeater channel, to stop the train.

3 Findings

Findings are listed in order of development and not in order of priority.

3.1 WLR was appropriate to protect the track maintenance work between Tamaki and Auckland while still maintaining the train schedule.

3.2 The signalling procedures at Tamaki were appropriate for the train movements at the time.

3.3 All staff involved in the incident held appropriate and current certification for the tasks that they were undertaking.

3.4 The LEMU of Train 3358 had either not read or not fully understood the content of the information bulletin provided as part of his train documentation.

3.5 The LEMU of Train 3358 passed Signal 8B set at Stop without verbal authority from the signalman.

3.6 The LEMU of Train 3358 went up the Down main line affected by WLR before being issued with Mis 60 authority to do so.

3.7 No collision resulted from passing the signal at stop because there were no other rail service vehicles in the section.

[9] On 23 August 2004, Connex Auckland Limited assumed responsibility from Toll Rail for the operation of the Auckland suburban rail passenger services.

4 Safety Recommendations

4.1 On 27 June 2005, the Commission recommended to the Chief Executive of ONTRACK that he:

> incorporate into existing procedures a requirement that the limits of wrong line running be defined by controlled facing signals. At locations where facing signals are not provided, these limits should be defined by appropriate permanent notice boards. (046/05)

4.2 On 11 July 2005 the Chief Operating Officer of ONTRACK replied in part:

> ONTRACK does not accept the recommendation to define facing signals as a limit in the Mis60 because, due to the Mis60 being extended to incorporate crossovers, this can prevent movements being made across crossovers onto other tracks.
>
> We believe the current instruction in the Rail Operating Code, Section 6, Instruction 5, adequately details this situation. In this situation where the incident occurred, while the start limits of the Mis60 began outside station limits, entry to these limits, however was protected by a facing signal.

4.3 On 27 June 2005, the Commission recommended to the General Manager of Connex Auckland Limited that he:

> develop training procedures to strengthen the focus to Mis 60 and wrong line running procedures. (047/05)

4.4 The Safety Manager for Connex Auckland Limited replied to the preliminary safety recommendation that was subsequently adopted unchanged as the Commission's final safety recommendation. That reply dated 26 May 2005 was (in part):

> Connex Auckland agrees with the Commission's safety recommendation, and has already extended the training of Locomotive Engineer Multiple Units (LEMU) in respect of the use of Mis. 60 Track and Time Permit, and Mis. 59 Authority to pass Departure Signals at Stop and Proceed Through Block Sections Procedures.
>
> In particular, Connex Auckland Ltd has extended the practical field training in the use of the procedures by running a special train on a Sunday to enable LEMUs to practice their use. The scenarios covered are:
>
> - Wrong Line Running (in double line areas)
> - Disabled diesel multiple unit in front of a Stop and Stay signal – being assisted by a following train
> - Disabled diesel multiple unit in front of a Stop and Stay signal – giving assistance to a train in advance
> - Failed signal – seeking and acting upon a Mis. 59
> - Setting back – there are two relevant scenarios for Connex Auckland LEMUs: one is the termination of a service at Ranui, with subsequent setting back to Henderson; and the other is the setting back to a platform in a double line automatic signalling area after having passed the first intermediate signal.

Approved on 30 June 2005 for publication

WP Jeffries
Chief Commissioner

Appendix 1

Westfield - Auckland both routes; Newmarket – Waitakere – Whangarei - Otira

Protected Work Area		Rule	Work Details
6, Shunt from Up Main Tamaki Up line	128CA, Up Home from D1 Auckland Up line	**24** **Mis.60** **/ 914** **Mobile Track Maintenance Vehicle**	Tamper 242, Regulator 283 1030 – 1430 D.Wharekura, 027 241 2283
111, Shunt from C1, Auckland Down line	4AC, Down Home Tamaki Down line	**24** **Mis.60**	**Up** trains running on the Down Line as detailed in DLAS Regulation 1 (d). 1030 – 1430
			Call sign:
			Call sign:

For Mis 60 Arrangements see page 3

Network Operations
Wellington 27 July, 2004

Information Bulletin - continued
Wednesday 28 July 2004 - continued
East Coast Main Trunk: Te Rapa - Otiria - continued

Track And Time Permit (Mis 60)

The Mis.60 particulars for each **Up** movement on the **Down** main are detailed below, with the exception that the Locomotive Engineer of each Up movement must at Tamaki obtain from Train Control an authority number, date, train number and the Train Controllers name together with the last train information and enter these details in the appropriate portion of the following Mis 60 Information. No hours are required and the Mis 60 once issued will remain in effect until the limits are reported clear by the addressee. Rule 24 and Rail Operating Code Section 6 is modified accordingly.

The Locomotive Engineer after completing the Mis 60 authority below is to confirm the details with Train Control.

Locomotive Engineer of Up trains running on the Down main **must** observe the wrong line running precautions as detailed in DLAS Regulation 1 (d).

Train Control **must** follow the Track and Time Permit (Mis 60) preissue / checking procedures.

\- - -

Locomotive Engineers running through the above area must ensure they have copies of this Information Bulletin before leaving their depot.

Mis 60 Authority No.
.....

Date: .....

To: Signalman Auckland Signalpanel
To: Locomotive Engineer No. .....
at Tamaki
This Track and Time Permit is issued for **Wrong Line Running of Up trains via the Down Main between Tamaki and Auckland.**

Locations		
From	To	For Train Number
111, Shunt from C1, Auckland, Down line	4AC, Down Home Tamaki, Down line	

Special Conditions:

Tamaki: Up trains must not pass 8B, Shunt and Up Starting from Down Main, and or 8C, Shunt and Up Starting from Sidings, signals until authorised by Signalman, Auckland Signalpanel.

.....Last train number ..... cleared section at ..... hours.

..... Train Controller

Limits reported clear by .....(name)

Mis 60 No. ..... cancelled at .....hours.

Network Controller

Recent railway occurrence reports published by the Transport Accident Investigation Commission (most recent at top of list)

04-125	collision between an over-dimensioned road load and rail over road bridge No.98 on Opaki-Kaiparoro Road, between Eketahuna and Mangamahoe, 2 October 2004.
04-123	Electric multiple unit traction motor fires, Wellington Suburban Network, 7 May 2004 – 30 September 2004
04-120	Express freight Train 726, collision with runaway locomotive, Pines, 18 August 2004
04-119	Diesel multiple unit passenger Train 3358, signal passed at Stop and wrong line running irregularity, between Tamaki & Auckland, 28 July 2004.
04-112	Diesel multiple unit passenger Train 2146, fire in auxiliary engine, Boston road, 16 April 2004
04-111	Express freight Train 736, track occupation irregularity involving a near collision, Christchurch, 14 April 2004
04-110	Shunt L9, run away wagon, Owen's Siding Onehunga, 5 April 2004
03-114	Express freight Train 220, derailment, Shannon, 21 November 2003
04-113	express freight Train 220, and empty truck and trailer, collision, farm access level crossing, 162.56 km between Maewa and Rangitawa, 27 April 2004
03-113	diesel multiple unit, passenger Train 3366, passed conditional stop board without authority, Glen Innes, 30 October 2003
04-109	passenger express Train 804, Tranz Alpine, stalled and slid back, Otira Tunnel, 28 March 2004
04-107	express freight Train 237, derailment, near Kopaki, 24 March 2004
04-102	motor trolley, derailment, Lepperton, 25 January 2004
03-112	diesel multiple unit Train 2153, collision with truck, St Georges Road level crossing, Avondale, 28 October 2003

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