

MELLING COLLISION

15 April 2013



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EXECUTIVE SUMMARY

On 15 April 2013, at approximately 7:54am, an incident occurred when a two-car Matangi service failed to stop and collided with the stop block at Melling Station.

There were nine passengers and two crew (driver and train manager) on-board.

KiwiRail cordoned off the site and closed the Melling line to rail services while bus replacements were provided for passengers.

In summary, the subsequent investigation into the incident found that:

- There was no mechanical fault on the Matangi unit which collided with the stop block at a speed of approximately 25km/h.
- All of the unit's components - brakes, coupling, and catcher - functioned correctly as they were designed.
- The driver had applied braking which was insufficient to stop the train and applied the emergency braking system immediately before impact with the stop block.
- The data downloaded from the train's Tranzlog (the equivalent of the black box on an aircraft) showed that the braking systems operated as they were designed.
- Therefore the cause of the incident was driver error.

KiwiRail identified and implemented a number of actions following this incident. These include:

- Refresher courses and a review of defensive driver techniques for drivers.
- Enhanced emergency response procedures and training for on-board staff members.
- The driver involved in the incident and received additional support including a nine month monitoring programme, random checks by a supervisor and defensive driving refreshers.

The incident is still subject to a Transport Accident Investigation Commission (TAIC) investigation. To date they have not alerted KiwiRail to any systemic issues that required attention.

BACKGROUND

On the day of the incident, the train involved had already completed a return journey between Wellington and Taita. There were no issues with the trip to and from Taita and the driver said that the train performed well both during braking and powering.

The train then began its journey to Melling at 7.28am. The driver reported there were no issues between the Wellington and Western Hutt rail stations.

INCIDENT

At 7.54am Train Control was informed that 5618 had failed to stop and had collided with the stop block at the end of the Melling Line.

The driver said that the braking had failed and the emergency braking had no effect.

The Melling line was closed.

The driver reported nine passengers were on board and there were no injuries.



RESPONSE

KiwiRail incident response staff arrived at Melling Station at 8.00am and the incident site was cordoned off.

The driver was immediately stood down and underwent drug and alcohol testing as is KiwiRail's standard practice. The results of these tests were negative.

The Network Control Manager (NCM) was in contact with the Police Communications Centre who reported that one person had arrived at Hutt Hospital reporting he had been in a train crash. This was the only report that the NCM received of injuries.

INVESTIGATION

The Rail Incident Controller (RIC) took photos and noted important information as required by the National Rail System Standard - Occurrence Management.

TAIC personnel arrived at the incident site and started their investigation including interviewing on-board crew.

Data was downloaded from the Tranzlog on-board recording device (similar to an aircraft's black box). This information was analysed by technical experts for verification.

The train was impounded on the instruction of TAIC and moved from the site to the Electrical Multiple Unit Depot, Wellington.

A Train Monitoring Report and mechanical report on the train were carried out. A full brake efficiency test was also carried out and witnessed by TAIC.

TEST RUN

TAIC requested a test run on the same line under similar operating conditions to observe the power and brake sequence, as well as emergency brake applications. This was carried out four times. These were witnessed by TAIC and met their test criteria.

The tests showed the train performed as designed with no problems observed.

FINDINGS

- The cause of the incident was driver error.
- No mechanical fault was found with the train.
- The impact speed was approximately 25km per hour.
- All of the unit's components – brakes, coupling and catcher - functioned correctly.
- This was supported by data downloaded from the train's Tranzlog which showed that the braking systems operated as they were designed.
- The driver had applied braking, which was insufficient to stop the train, and an emergency application was made before impact.
- Tranzlog data for four Melling services (5612, 5614, 5616 and 5618) on the day of the collision, showed 5618 was travelling at the highest speed of all of them when approaching Melling station.
- The TAIC released the set after the test run with no requirements on the depot team to carry out any remedial repairs to the brakes, electronic control systems or the Tranzlog data recorder.

IMPROVEMENT OPPORTUNITIES

Recommendations for consideration	Actions taken
Conduct refresher courses for drivers.	In the past 12 months drivers have had a number of refresher courses, with the content including Brake Test, Reporting Incidents, Points, Driver Distraction and Restricted Speed Lights.
Review defensive driving technique within driver training component.	A Human Factors Refresher has been developed and covers a number of topics including decision making, situational awareness, and defensive driving.
Increase safety briefings and discussions focusing on recent occurrences to prevent re-occurrence.	All safety lessons from incidents are distributed through to staff in the form of individual training or briefings, and improved daily safety briefings, bulletins and staff notices. The distribution and content of all briefings have since been improved.
Develop the mechanical component of driver training further.	Mechanical based refreshers have been developed, and the practical aspects of the driver role during Tutor training have been reinforced.
Staff conducting safety observations to promote and enforce a culture of safe driving practices.	More front line driver staff have been trained in undertaking safety observations and now undertake these observations on a regular basis.
Review the Emergency Response procedures and training for on-board staff members.	Passenger Operators and Train Manager training programmes have been enhanced to place greater emphasis on Emergency Training and customer care.
Schedule more emergency exercises and training opportunities to simulate credible emergency scenarios to test and validate train crew procedures and competency.	Increased emergency scenario training has been introduced for on board staff. In addition, increased mini exercises have been implemented during safety observations, where the staff member is given a scenario to talk through.
Review safe approach speeds for terminating stations with buffer stops across the Wellington Rail network.	While the safe approach speeds to buffer blocks were reviewed, it was considered that the driver behaviour in approaching the Melling buffer was the primary contributing factor.
The depot staff will continue to perform the scheduled maintenance.	This includes a brake efficiency check every 7 days.