Transport Accident Investigation Commission

Final interim report

Rīpoata whakamutunga mō nāianei – mō tātou tirotiro nāianei

Rail inquiry RO-2026-104
***Passenger train 803* TranzAlpine**
Rolling stock irregularity – disabled train
Tunnel 9 Midland Line
30 May 2026

November 2026

The Transport Accident Investigation Commission
Te Kōmihana Tirotiro Aituā Waka

No repeat accidents – ever!

"The principal purpose of the Commission shall be to determine the circumstances and causes of accidents and incidents with a view to avoiding similar occurrences in the future, rather than to ascribe blame to any person."

Transport Accident Investigation Commission Act 1990, s4 Purpose

The Transport Accident Investigation Commission is an independent Crown entity and standing commission of inquiry. We investigate selected maritime, aviation and rail accidents and incidents that occur in New Zealand or involve New Zealand-registered aircraft or vessels.

Our investigations are for the purpose of avoiding similar accidents and incidents in the future. We determine and analyse contributing factors, explain circumstances and causes, identify safety issues, and make recommendations to improve safety. Our findings cannot be used to pursue criminal, civil, or regulatory action.

At the end of every inquiry, we share all relevant knowledge in a final report. We use our information and insight to influence others in the transport sector to improve safety, nationally and internationally.

Commissioners

Chief Commissioner	David Clarke
Deputy Chief Commissioner	Stephen Davies Howard
Commissioner	Paula Rose, QSO
Commissioner	Aedeen Boadita-Cormican (from 19 June 2026)

Key Commission personnel

Chief Executive	Martin Sawyers
Chief Investigator of Accidents	Louise Cook
Lead Investigator for this inquiry	Michael McKay
Commission General Counsel	Sid Wellik

Notes about Commission reports
Kōrero tāpiri ki ngā pūrongo o te Kōmihana

Nature of this interim report

The Commission issues interim reports in the initial stages of an investigation. The interim report presents the facts and circumstances established up to this point in the Commission's inquiry. The Commission may issue an interim report in line with international guidance when inquiries are complex and ongoing or have heightened public interest.

Final report

After it completes its inquiry, the Commission will issue a final report on the incident. That report will contain an analysis of the facts of the incident, findings and recommendations. The information contained in the Commission's final report may differ from the information contained in this interim report.

Photographs, diagrams, pictures

The Commission owns the photographs, diagrams and pictures in this report unless otherwise specified.



Figure 1: Locomotive DXC 5391 that failed within Tunnel 9 Midland Line

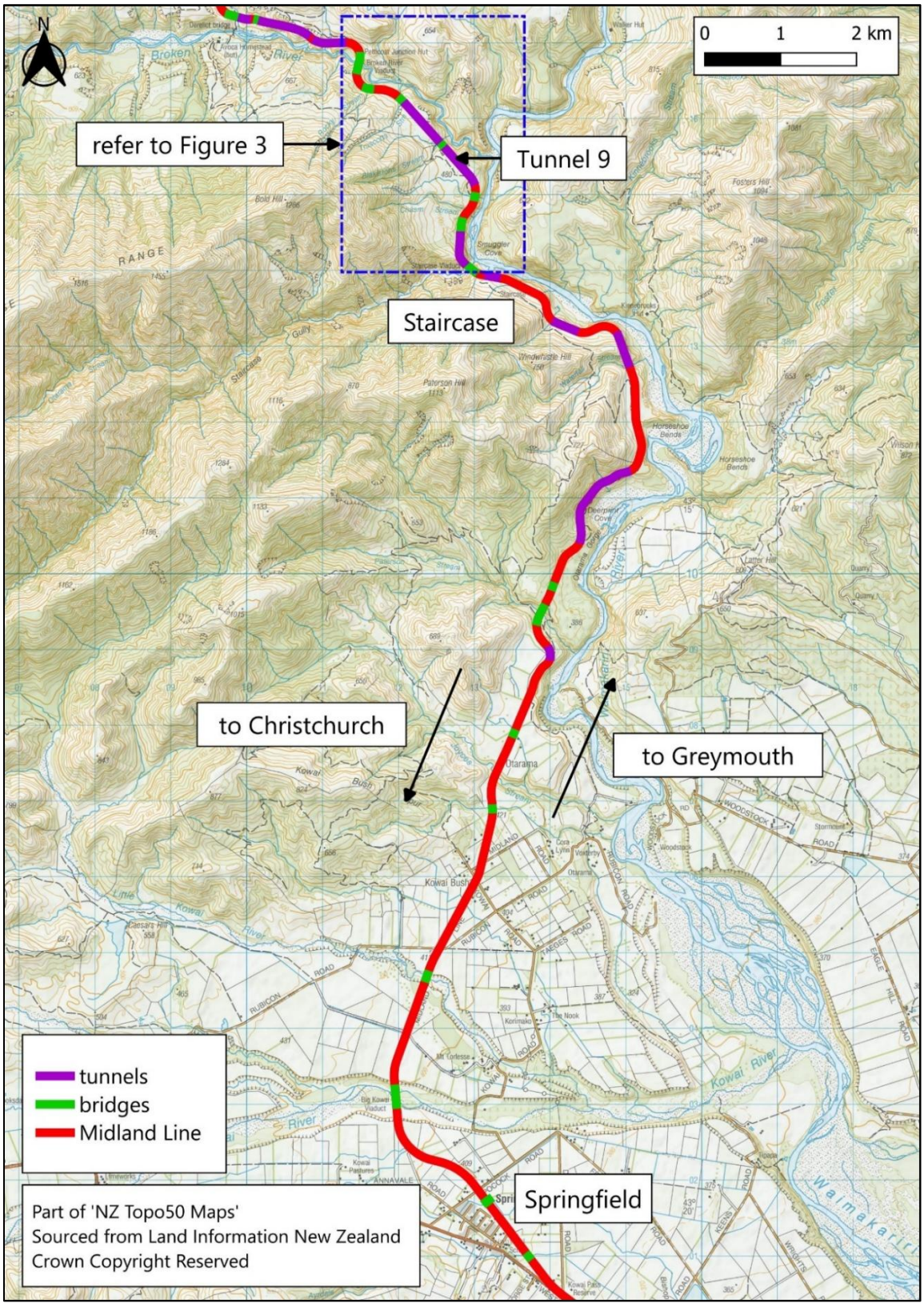

Figure 2: Location of incident at Tunnel 9 Midland Line
(Credit: Land Information New Zealand Toitū Te Whenua)

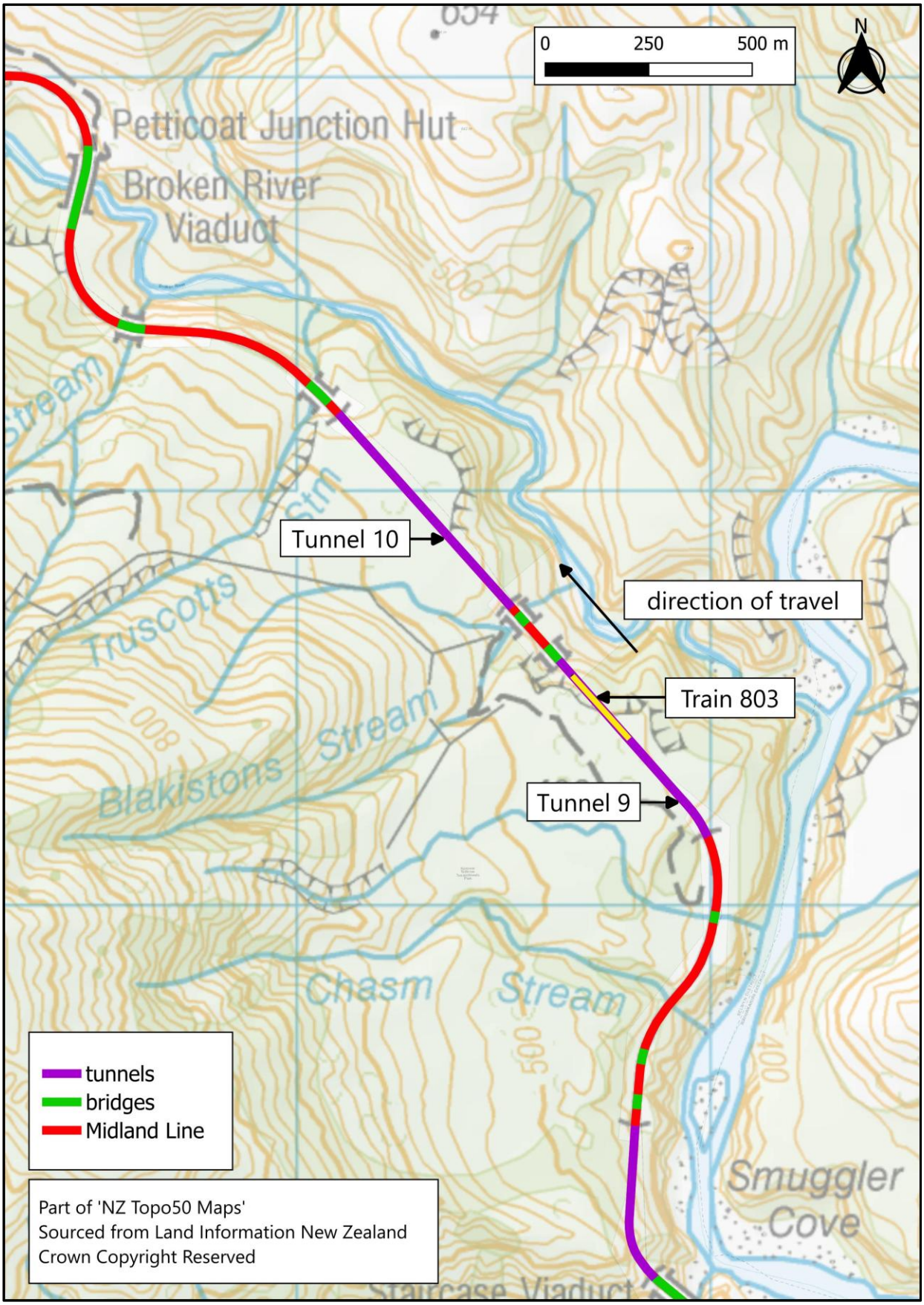

Figure 3: Location of incident in Tunnel 9 Midland Line
(Credit: Land Information New Zealand Toitū Te Whenua)

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1 Factual information
Pārongo pono

Background

1.1. The TranzAlpine passenger train service was a daily tourist service owned by KiwiRail Holdings Limited (KiwiRail) and operated by Great Journeys New Zealand, KiwiRail's tourism business. The service departed Christchurch in the morning and travelled to Greymouth before returning to Christchurch in the evening.

Narrative

1.2. At 0815[1] on 30 May 2026, Train 803 (the train), operating as the TranzAlpine service, departed Addington Station with 162 passengers, one locomotive engineer and six on-board crew. The train was being hauled by locomotive DXC 5391 (the locomotive). At 0835 the train stopped at Rolleston Station to pick up a further 15 passengers.

1.3. At 0845 and 0847, the locomotive experienced ground relay[2] faults in one traction motor[3] (TM6) while travelling between Rolleston and Springfield stations. The ground relays reset automatically, without the train stopping, and the train continued its journey.

1.4. At 0927 the train entered an isolated section of the Midland Line.[4] From the 5-kilometre (km) to the 70-km meterage[5] the line follows the Waimakariri and Broken River gorges. Along these sections there is no road access to the track.

1.5. At 0944, the locomotive experienced a rectifier fault[6] while travelling at 30 kilometres per hour (km/h), causing it to stop providing the tractive effort[7] to the train. Because of this loss of tractive effort, the train began to slow down.

1.6. At 0946, the train entered Tunnel 9 (*see* Figures 2 and 3) travelling at 22 km/h.

1.7. At 0947, the train came to a stop inside Tunnel 9 at approximately 65.73 km on the Midland Line. Based on data obtained by the Commission , the front of the train was approximately 100 metres (m) from the western portal[8] of Tunnel 9 and the rear of the train was approximately 250 m from the eastern portal when it came to a stop. The whole train, with 177 passengers, one locomotive engineer (LE1) and six on-board crew, was inside Tunnel 9.

1.8. The fault code 'Hot Diode' was displayed on the diagnostic information display on the engine control panel inside the locomotive cab.

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[1] Times in this report are in New Zealand Standard Time (Universal Coordinated Time +12 hours) expressed in a 24-hour format.

[2] A ground relay is a protective device that detects an unintended electrical connection between a locomotive's traction-power circuit and its frame. It responds by removing traction power and indicating a fault to the driver.

[3] Electric motor that converts electrical energy into mechanical energy, which is applied to the locomotive wheels.

[4] The rail line between Rolleston (Christchurch) and Stillwater (Greymouth) in the South Island of New Zealand.

[5] Kilometre meterage is the location defined from a fixed reference point. On the Midland Line that reference point is Rolleston.

[6] A failure or malfunction of the rectifier, which is an electrical device that converts alternating current (AC) to direct current (DC).

[7] The pulling force a locomotive exerts on a train.

[8] The structural entrance or exit of a tunnel

1.9. After stopping, LE1 secured the train by applying the brakes to the train and placed an emergency call to train control on the radio. LE1 then shut down the locomotive to limit the emission of diesel fumes while inside the tunnel. While shutting down the locomotive, LE1's gas monitor[9] sounded an alarm indicating increased toxic gases in the air.

1.10. LE1 established communication with train control at 0957 and informed the train controller that the train was disabled inside Tunnel 9 because of a 'Hot Diode' fault.

1.11. On receipt of this information, KiwiRail declared a Level 3 emergency[10] and initiated the recovery operation for the train.

1.12. Freight train 850 was at Springfield at the time of the incident. The locomotives (the recovery locomotives) and the locomotive engineer (LE2) from this train were directed to recover the disabled train back to Christchurch.

1.13. At 1035, a safe-working authority[11] (SWA) was issued to LE2 to proceed from Springfield to Staircase (*see* Figure 2) with the recovery locomotives.

1.14. At 1102, LE1 was able to restart the locomotive of the train inside Tunnel 9. With approval from train control, the locomotive pulled the passenger train clear of Tunnel 9 and proceeded through Tunnel 10 in search of a suitable place to stop the train safely.

1.15. The 177 passengers had been inside Tunnel 9 for approximately 76 minutes.

1.16. The recovery locomotives arrived and stopped at Staircase at 1105.

1.17. The train came to a controlled stop at 66.8 km on the Midland Line at 1107.

1.18. At 1124, an SWA was issued to the train to not move from its location to facilitate the rescue.

1.19. At 1129, an SWA was issued to the recovery locomotives to travel from Staircase to the new location of the train.

1.20. At 1145, the recovery locomotives arrived at the stationary train to complete the recovery operation. LE1, LE2 and one member of the on-board crew coupled the recovery locomotives onto the train.

1.21. At 1219 the recovered train, with the failed locomotive running dead,[12] departed from 66.8 km on the Midland Line back towards Christchurch. The recovered train stopped to leave the failed locomotive on the Staircase crossing loop at 1228.

1.22. The recovered train continued its journey back to Christchurch, making stops at Springfield and Rolleston at 1314 and 1401 respectively, to allow passengers to disembark. The recovered train arrived at Christchurch station at 1423, where the remaining passengers were disembarked.

1.23. The failed locomotive was separately hauled from Staircase back to Christchurch by another recovery locomotive. It departed Staircase at 1617 and arrived at Waltham Mechanical Hub at 1844.

[9] A device that continually tests and monitors the air quality.

[10] In accordance with KiwiRail's emergency response plans. A Level 3 emergency includes establishing a crisis management team and external assistance.

[11] A form used to authorise rail traffic movements and instructions not otherwise permitted under the normal system of safe working.

[12] Moving a shut-down locomotive using the power of another locomotive rather than its own engine power.

The fault

1.24. The 'Hot Diode' fault code indicated that the diodes within the rectifiers of the locomotive were overheating. The locomotive control system[13] was programmed to stop supplying power to the rectifiers if they overheated to prevent further damage to the locomotive or an electrical fire.

1.25. The rectifiers transfer alternating current (AC) power, generated by the locomotive's alternator, into direct current (DC) power, which is provided to the TMs that provide tractive effort to the locomotive.

1.26. In order to prevent overheating of electrical equipment, the locomotive contained an equipment blower. The locomotive equipment blower was a fan system. The function of the equipment blower was to provide cooling, low-pressure air to the following electrical equipment of the locomotive (*see* Figure 4):

- traction motors (TMs)
- rectifiers
- batteries.

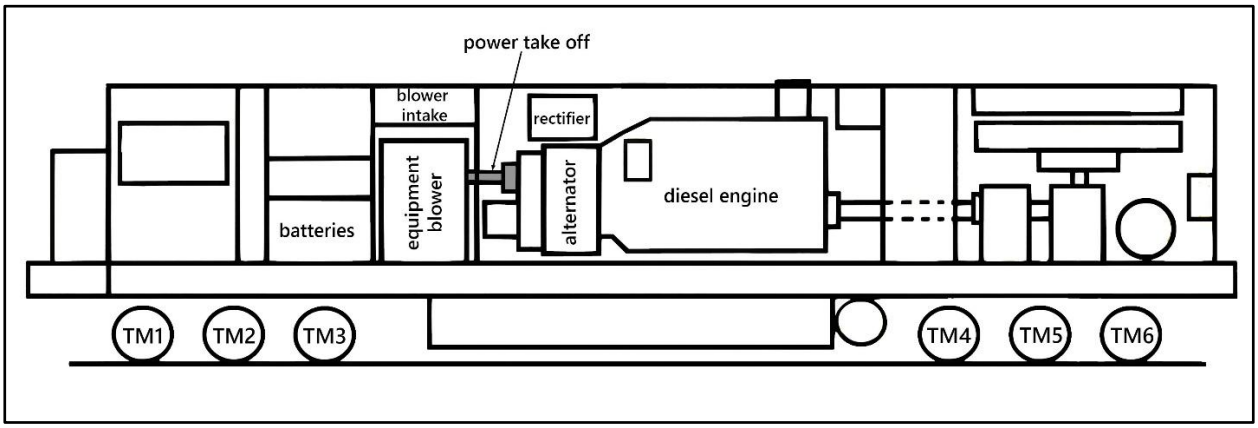

Figure 4: DXC class locomotive arrangement

(Credit: KiwiRail, modified by TAIC)

1.27. The equipment blower was driven by a power take-off system (*see* Figure 5). The power take-off used the rotation of the alternator drive shaft to rotate the equipment blower fan and provide cooling air. The power take-off translated the rotation of the alternator drive shaft to the equipment blower through a gear train.[14] The location of the power take-off is also shown in Figure 4.

[13] An electronic system that monitors the operation and condition of locomotive equipment.

[14] A set of connected gears that transfer movement and power from one rotating part of a machine to another.

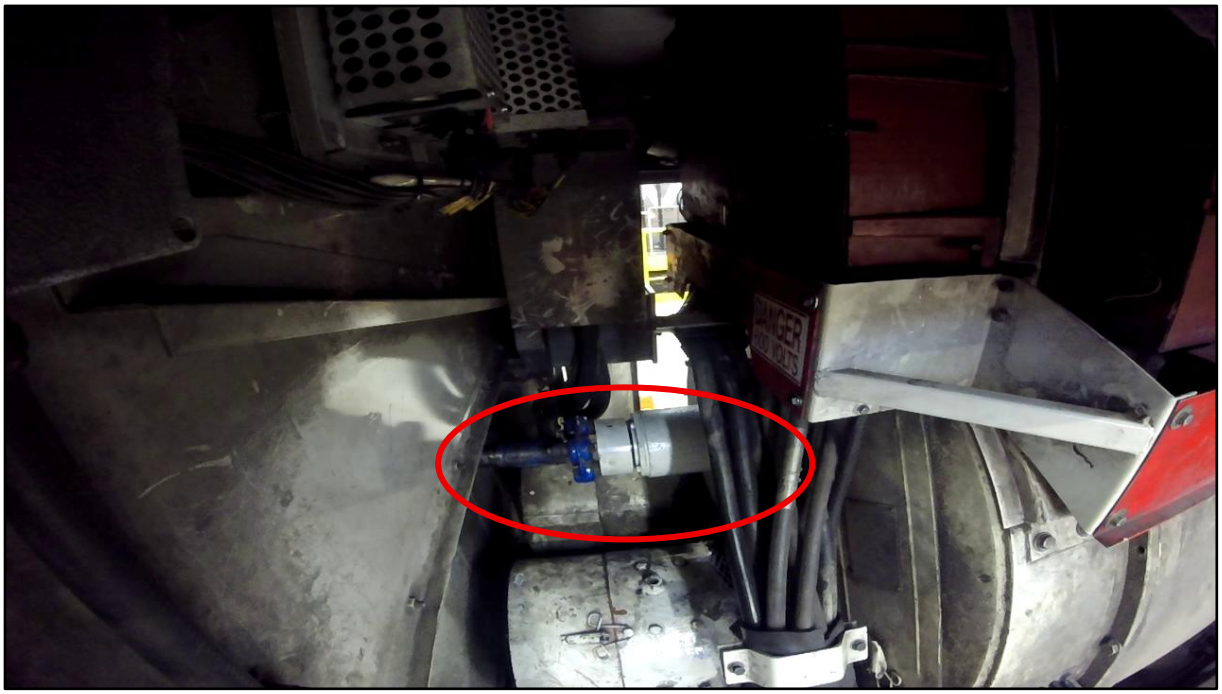

Figure 5: Power take-off (circled in red) in locomotive DXC 5391

1.28. The gear train of the power take-off failed which led to the equipment blower not operating. This meant no cooling air was provided to the electrical equipment during operation of the locomotive.

1.29. The electrical equipment overheated and the system stopped supplying power to the rectifiers. This resulted in no power being provided to the locomotive's traction motors and the train came to a stop.

Train information

1.30. Train 803 was operating as a passenger service. It was comprised of 10 carriages, was 208 m long and weighed 380 tonnes (t) on the day of the incident. It was powered by locomotive DXC 5391. There were 177 passengers on board, one locomotive engineer and six on-board crew members.

Personnel information

1.31. LE1 had been employed by KiwiRail since 2012 and started locomotive driving in 2014. They had been certified to drive passenger trains since September 2025. Their safety observations[15] were current at the time of the incident.

[15] In-field assessment of rail personnel carrying out the application of practical skills for the activities specified on their Licence to Operate.

2 Further lines of inquiry
Ngā aho uiuinga atu

2.1. A full inquiry into this occurrence is continuing. A final report, setting out findings, safety issues and recommendations, if any, will be issued at the completion of this inquiry.

2.2. The Commission is continuing to collate and verify evidence directly relating to the rolling stock irregularity that caused the disablement of the train and is pursuing several lines of inquiry of a systemic nature.

3 Data summary
Whakarāpopoto raraunga

Vehicle particulars

Train type and number:	Passenger Train 803 – TranzAlpine
Classification:	Passenger
Year of manufacture of locomotive:	1976
Locomotive type:	diesel electric
Operator:	KiwiRail Holdings Limited

Date	30 May 2026
Location	Tunnel 9 Midland Line
Operating crew	one locomotive engineer and six on-board train crew
Injuries	nil
Damage	electrical equipment power take-off gear unit

4 Conduct of the inquiry
Te whakahaere i te pakirehua

4.1. On 30 May 2026, the New Zealand Transport Agency Waka Kotahi notified the Commission of the occurrence. The Commission subsequently opened an inquiry under section 13(1) of the Transport Accident Investigation Commission Act 1990 and appointed an Investigator-in-Charge.

4.2. Commission investigators inspected the locomotive and carriages of the train on 30 May 2026. On subsequent days, Commission investigators conducted further inspections of the locomotive and interviewed the staff involved in the incident.

4.3. The Commission obtained records and information from sources that included:

- Tranzlog data from the locomotive
- train control graphs and voice logs
- maintenance records of the locomotive.

4.4. On 26 August 2026, the Commission approved a draft interim report for circulation to five interested parties for their comment.

4.5. Two interested parties provided a detailed submission, one interested party replied that they had no comment and two interested parties did not provide a response. Any changes as a result of these submissions have been included in the final interim report.

4.6. On 28 October 2026, the Commission approved the final interim report for publication.

Abbreviations
Whakapotonga

AC	alternating current
DC	direct current
km	kilometres
km/h	kilometres per hour
LE	locomotive engineer
m	metres
SWA	safe-working authority
t	tonnes
TM	traction motor

Glossary
Kuputaka

gas monitor	a device that continually tests and monitors the air quality
gear train	a set of connected gears that transfer movement and power from one rotating part of a machine to another
ground relay	protective device that detects an unintended electrical connection between a locomotive's traction-power circuit and its frame. It responds by removing traction power and indicating a fault to the driver
locomotive control system	an electrical system that monitors the operation and condition of locomotive equipment
meterage	kilometre meterage is the location defined from a fixed reference point. On the Midland Line that reference point is Rolleston
portal	structural entrance or exit of a tunnel
rectifier fault	a failure or malfunction of the rectifier, which is an electrical device that converts alternating current (AC) to direct current (DC)
running dead	moving a shut-down locomotive using the power of another locomotive rather than its own engine power
safe-working authority (SWA)	a form used to authorise rail traffic movements not otherwise permitted under the normal system of safe working
safety observations	in-field assessment of rail personnel carrying out the application of practical skills for the activities specified on their Licence to Operate
traction motor (TM)	electric motor that converts electrical energy into mechanical energy, which is applied to the locomotive wheels
tractive effort	pulling force a locomotive exerts on a train