



Transport Accident
Investigation
Commission

Watchlist 2026

Not following rail signal indications

What is the problem?

When a train passes a stop signal without proper authorisation (a 'Signal Passed at Danger' or SPAD), it risks derailment and/or collision with other rail vehicles and track workers, which can have severe consequences.

Currently, there is no regulatory requirement for physical fail-safe defences to automatically stop a train that passes a signal at danger.

What is the solution?

Relying primarily on written rules and codes to help avoid SPADs has limited effectiveness because they are inherently vulnerable to human error. Engineering controls, which physically isolate hazards, can add another layer of defence against collisions, overspeed derailments, incursions into work zones, and main track switches left in the wrong position.

In New Zealand, the system for ensuring a train remains only in authorised areas of the track depends primarily on human interpretation of signal indications and compliance with them. The Transport Accident Investigation Commission has inquired into accidents and incidents showing there are inconsistencies in the way train crews recognise and follow signals. Fatigue, inadequate training, distraction, or misunderstanding can lead to missed signal indications, creating a risk of collision and/or derailment with consequences that can be severe. Engineering controls help to mitigate this risk.

How are trains stopped from entering unauthorised sections of track?

Train crews rely on the signals to control train movements and prevent collisions. Signals are controlled by an interlocking system that checks whether the route ahead is clear and correctly set, which prevents conflicting routes from being set and is fundamental to the safe operation of the railway, ensuring that rail traffic occupying the track is spaced safely.

To rely primarily on written rules and codes to help avoid accidents and incidents within this complex system would make safety inherently vulnerable to human error. Instead, complex systems require multiple reliable defences to be safe. This includes engineering controls, which physically isolate hazards and add extra defence against incidents and accidents.

Some areas of New Zealand's rail network infrastructure and locomotive fleet are protected by various engineering controls. But there is no regulatory requirement for them to be in place. They include:

- European Train Control System (ETCS)
- Train Stop Protection (TSP)
- Electronic Train Protection (ETP)
- the worksite protection system, E-Protect
- the geofenced track warrant limit of authority system, Interceptor.

What recommendations have we made?

In March 2026, we recommended that KiwiRail use engineering safety controls in areas of its rail network where none currently exists.¹ We also recommended that NZTA and the Ministry of Transport, as regulators, ensure that system safety oversight is maintained.

These recommendations follow earlier recommendations about common safety systems on the Auckland rail network.²

Why is the Commission concerned?

The Commission has launched several inquiries in recent years related to SPADs.³ KiwiRail's mainline train SPAD data show that in 2025 the number of SPADs per million kilometres almost doubled in the period 2020 to 2025. In 2025, it peaked at 3.2 against a benchmark of 1.0.⁴

KiwiRail's current risk controls to prevent SPADs are largely based on written rules and codes, and not all areas of the rail network have engineering controls. The Commission acknowledges that engineering controls are expensive and take time to implement, but we are concerned at the number of incidents and accidents where trains have entered areas of the track where they should not be. The consequences can be severe.

References to reports and recommendations

¹ RO-2024-104: Freight train SPAD A1 and conflict with HRV, near Morrinsville, 2 August 2024

[RO-2024-104 | TAIC](#)

Safety recommendation 001/26, 002/26, and 003/26 under consideration/implemented/accepted

² RO-2023-104: Passenger Train 104 (Te Huia) SPAD and potential conflict, Penrose, Auckland, 17 June 2023

[RO-2023-104 | TAIC](#)

Safety recommendation 017/24 implemented

RO-2022-102: L71 Mainline Shunt, derailment and subsequent rollover, Tamaki, 1 June 2022

[RO-2022-102 | TAIC](#)

Safety recommendation 036/23 being implemented

³ RO-2025-103: Shunt train, SPAD, North Island Main Trunk, near Westfield, Auckland, 1 February 2025

[RO-2025-103 | TAIC](#)

RO-2024-104 (see reference 1)

RO-2023-104 (see reference 2)

RO-2022-102 (see reference 2)

⁴ RO-2024-104 (see reference 1), paragraph 3.50

This safety concern was first published as a Watchlist item in 2026.

Te Kōmihana Tirotiro Aituā Waka

Transport Accident Investigation Commission

www.taic.org.nz

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 rather than to ascribe blame to any person.