



Recent Investigation State in Taiwan

Taiwan Transportation Safety Board
Managing Director

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2025.10.22

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Railway Occurrence Investigation Division

Job Title	Staff	Background
Director and Chief Investigator	1	■ Taiwan High Speed Rail ■ Taiwan Railway ■ Taipei Metro ■ New Taipei Metro ■ Taichung Metro ■ Ministry of Transportation and Communications ■ Air Navigation and Weather Services, CAA ■ CECI Engineering Consultants
Deputy Chief Investigator	2	
Investigator	5	
Associate Investigator	5	

Scope of Major Railway Occurrence investigation



Transportation Occurrences Investigation Act



Scope of Major Transportation Occurrence

Aviation

Marine

Railway

Highway

Railway System

Collision on mainline

Derailment on mainline

Train fire on mainline

Level crossing occurrence /
fatality of person on board

Against the block protection
Operation against the signal
Signal passed at danger
Facility damage
Trainset failure

Foreign object intrusion - 2025.02.18

Cause significant impact on
people's lives or bodies of civilians,
or properties

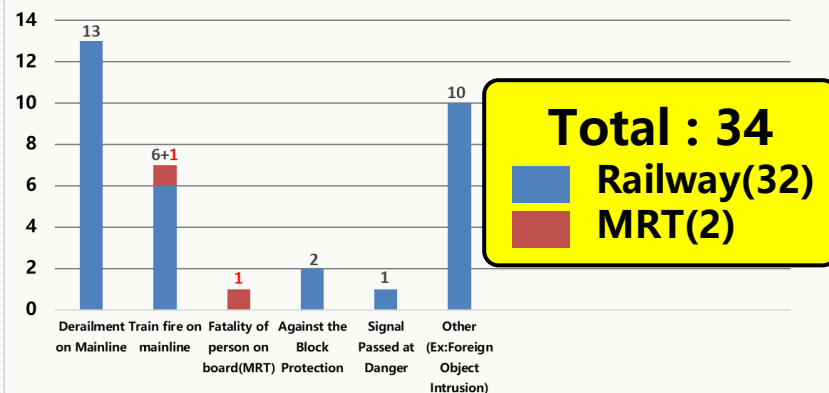
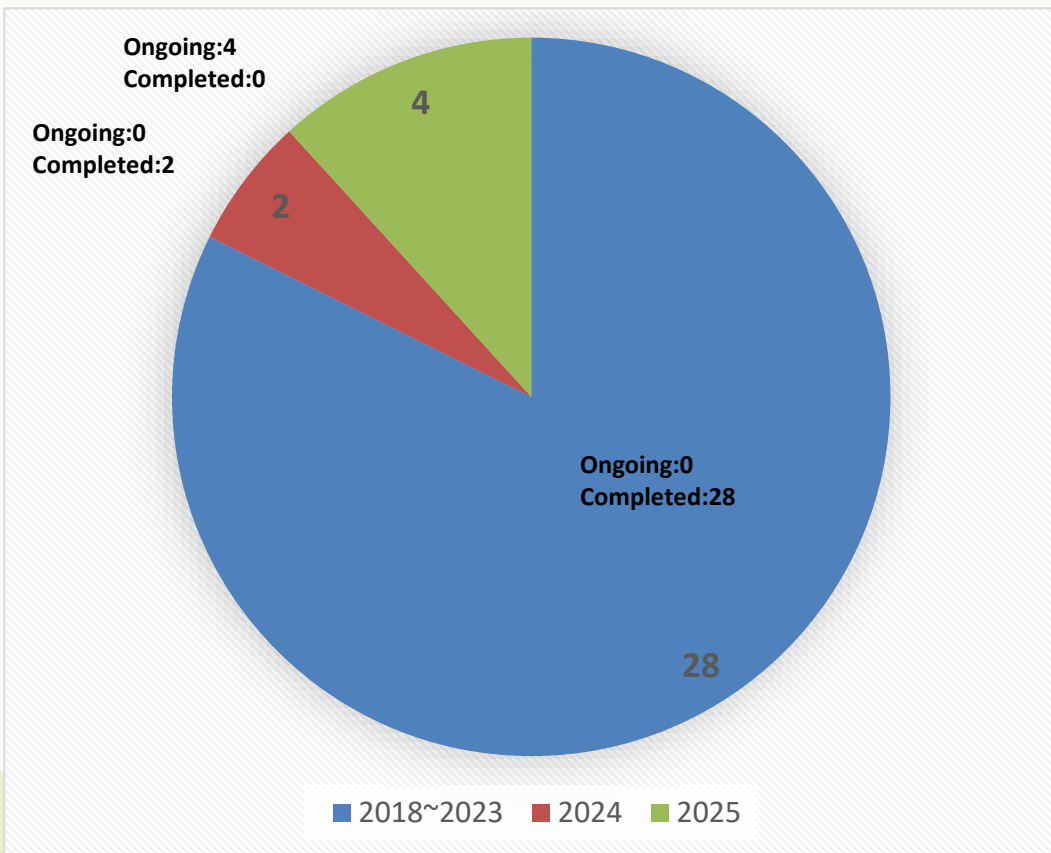
MRT System

Investigation Timeline

- **Level 1 cases : 14 to 18 months**
(Collision, Derailment, Train fire)
- **Level 2 cases : 10 to 12 months**
- **High-profile cases : Around 12 months**



Major Railway Occurrences Investigated



Data: 2018 ~ 2025

Investigation cases completed this year

- TTSB Completed 2 train derailment cases.

2024.02.12 Train No. 4816



1. A low-speed derailment that occurred just after a train left the station

2024.06.21 Train No. 229



2. Train derailed after colliding debris that was caused by a landslide and had overflowed onto the track

Train No. 4816 derailed at Lingjiao Station (1/2)

2024
Feb.
12

10:51 AM

- Train No. 4816 consisting of 4 cars.
- At 10:51 AM, the train was departing from the Lingjiao Station on the Pingxi Branch Line.
- The first and second axles at the 3rd car derailed.
- There were no injuries.



Train No. 4816 derailed at Lingjiao Station (2/2)

Findings :

- 1. The failure of the air spring leveling valve caused the train load to become unbalanced.**
- 2. The poor track geometry in the derailment section reduced the vertical force on the wheel.**
- 3. A guard rail had not been installed in this section.**

Train No.229 derailed at Tunnel (1/3)

2024
Jun.
21

04:49 PM

- Train No. 229, consisting of 12 cars.
- At 04:49 PM, the train passed through the south entrance of the Xin-Heren tunnel in Hualien County and struck debris and rocks caused by a landslide that had overflowed onto the track.
- It caused the derailment of the 4th axle of the 1st car, all 4 axles of the 2nd car, and the 3rd axle of the 9th car.
- This accident resulted in injuries to the driver and 8 passengers.



Train No.229 derailed at Tunnel (2/3)

Findings:

1. Monitoring System Limitation & Training Gap

Part of the monitoring system lacked detection and alert functions, and staff were not informed, leading to missed early signs of debris on the track.

2. Lack of a Debris Flow Monitoring Mechanism

There was no comprehensive system in place to monitor or respond to landslides.

3. Poor Inter-Agency Coordination

No joint inspection or warning mechanisms were established between the company and relevant agencies.

Train No.229 derailed at Tunnel (3/3)

Safety Recommendation

- 1. To the Railway Company**
 - **Enhance the monitoring system and establish SOPs for debris flow risks.**
- 2. To the Ministry of Transportation and Communications (MOTC)**
 - **Assist railway company in working with relevant agencies to build a joint defense mechanism for debris flow risks.**

Ongoing Investigation

2025.01.03 Train No. 125



1. Train derailed while shunting to Station

2025.03.01 Train No. 7501



2. Freight train derailed on mainline

2025.04.20 Shunting Locomotive



3. Locomotive collided with a stationary train while Shunting at Depot

2025.09.24 Train No. 423



4. Train struck a rockfall on the track, causing the derailment

Train No. 125 derailed at Station

2025
Jan.
3

12:02 PM

- At 12:02 PM, the train No. 125 departed from the depot and headed toward the station.
- The rear locomotive of the train derailed but continued traveling until it stopped on the track at platform 3 of the Station.
- It caused damage to the train body, wheels, pantographs, overhead catenary system, tracks, and turnout.
- There were no casualties in this occurrence.



Freight train No. 7501 derailed on mainline

2025
Mar.
10

10:54 AM

- Freight train No. 7501 consisted of 26 cars, with one locomotive providing power at the front and another at the rear.
- A guard car was attached in front of the rear locomotive,.
- At 10:54 AM, the guard car derailed on the mainline in an uphill section.
- There were no casualties in this occurrence.



Locomotive collided with a Stationary Train

2025
Apr.
20

02:21 PM

- Diesel-electric locomotive No. R169 was running at depot and going to couple with a stabled train on the stabling track.
- The locomotive did not stop before the stop sign and collided with the stabled train.
- The collision caused damage to both the locomotive and the stabled train, including their bodies and couplers.
- There were no casualties in this occurrence.



Train No. 423 struck a rockfall cause derailment

2025
Sep.
24

13:33 PM

- A Train No. 423 operated by Taiwan Railway Corporation struck a rockfall that fallen onto the track.
- The first car derailed.
- There were no injuries or fatalities.



Major Railway Issues

- Installation of In-Cab Video and Voice Recorders for Railway Trains.



Exchange of experiences

2024 seminar

- Themes:
 1. Preventive mechanisms for foreign object intrusions.
 2. Warning Systems for natural disasters under extreme weather conditions.
 3. Handling and prevention of railway near-miss events.
- 8 railway operators were invited to present, and around 50 participants joined the discussions.

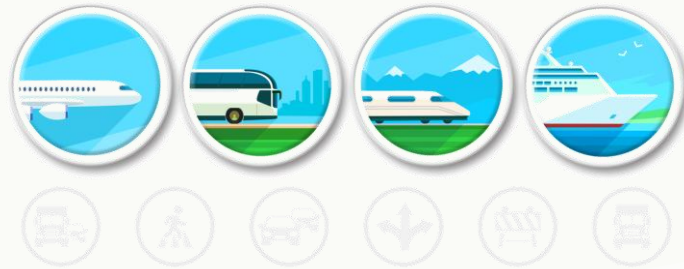


Join International Organization

- Participate in international organizations.
- UK Rail Safety and Standards Board(RSSB).



Thank you for your attention



Taiwan Transportation Safety Board