* Natural Disaster and Accidents

In Thailand Railway System

(Case Studies)"



Department of Rail Transport

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Natural Disaster and Accidents in Railway System (Case Study)

Definition

This presentation focuses on the impact of natural disasters and accidents on railway systems. It highlights the challenges faced by railway operators during such events and their responses to ensure safety and continuity.





Impacts

Safety Concerns: Railway systems are critical for mass transportation, and any disruption can have severe consequences on passenger safety and operations. Economic Impact: Natural disasters and accidents often lead to significant financial losses due to infrastructure damage and service interruptions.

Case Study 1Heavy rain, flooding tracks(Laemchabang – Sriracha, Chonburi province)





Case Study 1 : Guidelines for prevention and reducing flood losses



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Case Study 2Landslide(Pang Ton Phung – Huai Rai, Phrae province)



Case Study 2 : Landslide (Pang Ton Phung – Huai Rai, Phrae province)

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Landslide occurred from the side of the tunnel entrance, and water flowed from above the tunnel down along the slope, causing flooding on the tracks and water to flow into the tunnel. **Shotcrete and Surface Drainage System** at the portal tunnel provides a comprehensive solution, including soil reinforcement and water management, to prevent landslides and erosion around the tunnel entrance. This approach ensures long-term maintainability.



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Case Study 3 (Illegal crossing in Phichit Province)



Date: 8 July 2024

Location: Illegal crossing in Phichit Province

Cause: Negligence of the car driver

Time Line: 06:09 PM, the Train No. 201 was passing through an illegal crossing between Phichit Station and Tha Yalo Station, a pickup truck drove in front of the train at close range. As a result, the train collided with the left side of the pickup truck.



The illegal crossing equipped with speed bumps, a stop sign, and a flashing light warning sign before the crossing. The crossing was also fitted with high-strength pre-stressed concrete slabs, and the area was a straight path for both the railway and the road. The lighting was adequate, and there was no rain at the time.



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Case Study 3 : Train-Car Collision at Illegal Crossing

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The Deputy Minister of Transport has issued the following policies regarding the approach to solving the problems at illegal crossings :

- Provinces or Provincial Administrative Organizations are to construct local roads that connect to legal crossings.
- While constructing the local roads alongside the railway, staff must continuously manage stroller type barriers at the crossing 24/7. Additionally, closed-circuit television (CCTV) cameras should be installed at the unauthorized crossing area.
- In the MOA, the State Railway of Thailand (SRT) must verify whether staff are managing the stroller type barriers.



Case Study 4 (Pak Tho Railway Station)



Case Study 4 : Train-Train Collision

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09-1440:4

Date: 24 February 2020

Location: Pak Tho Railway Station

40 Injuries

36 Passengers4 Staffs

The incident occurred at the side-track in the vicinity of the Pak Tho Railway Station, Ratchaburi Province.

Cause of the accident:

- The area is undergoing a double track railway construction project, which temporarily suspended the signaling system.
 Instead, 2 Switchman were assigned, one to the north and one to the south.
- At the time of the incident, the south switch did not return to the main track, causing train 722 to pass through the switch and collide with train 37.

The accident occurred on February 24 at 18:39, with the route closed at 18:41 The route was reopened on February 25 at 01:45

Bangkok

Switchman 2

Side-track

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Safety Measures

Urgent Measures :

- Organized train services for passengers returning to Bangkok, accommodating 90 passengers.
- Local military personnel arranged buses to transport 24 passengers to Hua Hin and Prachuap Khiri Khan.
- Pak Tho Police Station provided a meeting room as a temporary shelter.
- Follow-up Measures :
 - 1. Avoid relying on manual switch (minimize human error)
 - 2. If Switchman are necessary, must employ staff with adequate knowledge and expertise.
 - 3. In case of insufficient staff, the SRT should urgently recruit additional staff.





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