



The Necessity of Installing Audio and Video Recording Devices in Train Driver Cabs and The Challenges in Promoting Their Implementation.

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Outline

- Introduction
- International Practices
- Current status of domestic operators
- Benefits and drawbacks for different stakeholders
- Challenges and Suggestions

◆ What's the purpose of an in-cab audio and video recording devices?



- Analyze driver's behavior and decisions.
- Reveal distraction, fatigue, stress and procedural error.
- Identify human factors.
- Learn from mistakes.
- Prevent recurrence of similar accidents.

Introduction

◆ In what cases do we recommend that the authorities install audio and video recorders in the driving cab?

- Date : Oct. 21, 2018
- Cause : The train driver misunderstood the information from TCMS and isolated the Automatic Train Protection System (ATP) , resulting in the train overspeeding and overturning at a sharp curve.
- Casualties: 18 fatalities and more than 200 injuries.
- Finding : The driver's verbal statements during those critical moments... did not actually match with the operations recorder by the TCMS.



Country	Legal / Policy Basis	Applicable Rolling Stock	Effective Date
	<i>Railway Safety Act</i> + LVVR Regulations (SOR/2020-178)	Locomotives (passenger and freight)	Sep 2, 2022
	<i>FAST Act</i> + FRA Final Rule (49 CFR Part 229.136)	Lead locomotives on intercity & commuter trains	Oct 12, 2027

Ref: <https://laws-lois.justice.gc.ca/eng/regulations/SOR-2020-178/FullText.html>

<https://www.ecfr.gov/current/title-49/subtitle-B/chapter-II/part-229/subpart-C/subject-group-ECFR4aa004644ff4be4/section-229.136>

International Criteria for Train Video and Audio Devices, Engineering technical research report TTSB-EDR-25-08-001, Division of Research and Engineering, TTSB, August 2025"

Current status of domestic operators

Operator	Outward-recording devices	Inward-recording devices	Remark
THSR CORP.	YES	NO	No plan to install Currently.
TR CORP.	YES	Partial	Only E500 & R200 train types have been equipped, but not yet been activated.
MRT / LRT	YES	Partial	A few haven't yet, due to vehicle warranty.
Alishan Forest Railway	YES	YES	Except for steam locomotive
Taiwan Sugar CORP.	YES	YES	-

High Speed Rail

Conventional Rail

Metro system and Light Rail Transit

Industrial Rail

Benefits and drawbacks for different stakeholders

Stakeholder	Benefits	Drawbacks
Train Drivers & Unions	● Clarify responsibilities and defend against unfair investigations.	● Invade personal privacy. ● Continuous monitoring causes stress. ● Risk of footage misuse.
Railway Operators	● Support event analysis and improve risk management.	● Require investment in equipment and may reduce employee's trust.
Regulatory Authorities	● Enhance oversight and support policy making.	● Raise privacy and labor rights concerns. ● Require strict data governance.
Investigation Agencies	● Identify potential human factors, and improve investigation efficiency.	● Depend on IT staff and systems. ● Hard to balance transparency and privacy.

Challenges in implementing of these devices

◆ Current Situation:

- The biggest challenges come from labor unions.
- Invade privacy and limited benefits for accident prevention.
- The policy is still under negotiation.

◆ Key Concern:

- A driver's actions on duty are directly linked to public safety.
- Public safety always must come first.
- For identifying human factors, not surveillance.

◆ Suggestions the regulatory authorities:

- Maintain open communication.
- Built transparency policies.
- Foster mutual trust and respect with all operators.

Unions Object



Communication and Negotiation



Mutual Trust and Respect



Transparency of Policies

Thank You For Your Attention



國家運輸安全調查委員會
Taiwan Transportation Safety Board