

4. Introduction of the support systems to prevent accidents

This chapter presents some examples of the technical supports provided by each corporation and the national subsidy system to contribute to preventing accidents and improving transport safety.

As described in Chapter 2, the lack of technical abilities of railway operators may be a factor of train derailment accidents caused by “track” in the local railway operators. We expect the technical supports provided by each corporation to be used for the proper maintenance management of tracks and the proper planning of the “partial replacement to PC sleepers” and “priority-based installation”. Moreover, the national subsidy system is expected to be used to maximize the effect of measures with a limited budget, thereby contributing to the reduction in accidents and the improvement of safety.

Furthermore, you may consider a possibility of taking advantage of the available national subsidy systems for converting class 3 or class 4 level crossings into class 1 level crossings.

(1) Examples of the technical supports

(i) Railway Technical Research Institute, RTRI

Railway Technology Promotion Center, RTRI, implements “Site investigation”, “Lectures and training courses”, and “Advice via email, etc.” responding to the technical consultation from the members of railway operators without fee. Moreover, the RTRI prepares educational materials for the fostering of railway engineers.



Status of “site investigation”

(Outline)

- “Site investigation”

The researchers of the RTRI and the rail advisors (the expert retired from railway operators) are dispatched to implement the technical diagnosis and advice directly at site. As a recent case of the tracks, an on-site investigation on the soundness of tracks and the alignment irregularity management in the curves was carried out.

- “Lectures and training courses”

The researchers and the rail advisors who have the deep knowledges and plentiful actual experiences give lectures and training courses.

- “Advice via email, etc.”

The researchers of the RTRI respond to inquiries about the railway technologies via email and provide consultation services via on-line meetings.

(Website of the RTRI) <https://www.rtri.or.jp/tecce/>

(Phone) Railway Technology Promotion Center, RTRI, 042-573-7236

(ii) Japan Railway Construction, Transport and Technology Agency, JRJT

The JRJT implements the support “Railway family doctor” by effectively using the experiences and the knowhow cultivated in the duties of the railway construction and the railway support, for the railway operators and local public organizations supporting the local railways.

Concretely, the JRJT implements the technical advice and the provision of information such as the introduction of the precedents and provision of references, etc., responding to the consultation on the repairing, the maintenance management, the replacement plan including the replacement to PC sleepers, etc., of railway facilities such as the tracks, and introduces proper construction methods responding the situation based on the investigation of the facilities implemented at site according to the necessity, in free of charge.



Status of “site investigation”

(Concrete examples)

- Advise on the inspection method of the aged facilities and the points required attention on the maintenance management
- Introduction of the construction methods and materials for the repair works.
- Advise on the decision of the construction plans, ordering of the construction works, the supervising of the construction works.
- Introduction of the supporting systems.

(Website of the JR TT) <https://www.jrtt.go.jp/construction/outline/family-doctor.html>

(Phone) Railway General Support Section, International, General Affairs Dept., JR TT, 045-222-9016

(iii) Japan Railway Rolling Stock & Machinery Association, JRMA

The JRMA holds the “Training course for succession of technologies for the vehicle maintenance in the local railways” in each district transport bureau, together with the Ministry of Land, Infrastructure, Transport and Tourism, and the JR, the major railway operators, in order to secure safety and maintain and continue the technical abilities in the local railways.

(Phone) Vehicle Dept., JRMA, 03-3593-5611



Experience of “door adjustment work”

(2) National subsidy system

(i) **Support for project cost for general safety measures for railway facilities, project to improve safe transport facilities of railway and tramway.**

Subsidy for project cost to improve, maintain, secure the local public traffics, project to improve safe transport facilities of railway and tramway.

(Outlines)

The partial support of necessary expenses to renew facilities, etc., to contribute improvement of safety conducted by the local railway operators to secure safe railway transportation.

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|------------------------------|--|
| 【Operators to be supported】 | Railway and tramway operators |
| 【Ratio of support】 | One third of the expense subjected to be supported, etc. |
| 【Facilities to be supported】 | <u>Rails, sleepers</u> , facility to prevent falling stones, ATS, train radio facility, windbreak facilities, bridges, tunnels, <u>level crossing protection facilities</u> *1, vehicles*2, etc. |

(*1) “Level crossing security facilities are only subject to the Support for project cost for general safety measures for railway facilities, project to improve safe transport facilities of railway and tramway. The local public bodies, the JR, and the major private railway companies are not subject to this subsidy. Moreover, **in cases where level crossing security facilities are newly installed, “a level crossing on roads other than the national roads, prefectural roads, and municipal roads specified in the Road Act” is subject to the subsidy.**

(*2) “Vehicle” is the targeted support facility of the subsidy for project cost to improve, maintain, secure the local public traffics, project to improve safe transport facilities of railway and tramway.

(Website of the MLIT) https://www.mlit.go.jp/tetudo/tetudo_tk5_000001.html

(only available in Japanese)

(ii) Support for project cost for general safety measures for railway facilities, project to improve level crossing security facilities

(Outlines)

To subsidize a part of the expenses of developing level crossing security facilities for the purpose of preventing traffic accidents and contributing to smooth traffic under the Act on Promotion of Railway Crossings.

- 【Operators to be supported】
- (i) Railway and tramway operators other than local public bodies
A railway and tramway operator that meets any of the following. It has
- a deficit;
 - an operating loss; or
 - fixed assets for business which are 7% or less of operating margins
- and, in all its businesses, has
- a deficit;
 - an operating loss; or
 - fixed assets for business which are 10% or less of operating margins.
- (ii) Railway operators that are local public bodies
A railway and tramway operator that has a deficit.

【Ratio of support】 Within one half of the expense subjected to be supported (one third in cases where current profits are marked in the railway and tramway business)

【Facilities to be supported※】 Crossing gates, road warning devices (including omni-directional alarms), road warning device time control devices, two-phase crossing gates, large crossing gates, over-hung alarming devices, crossing trouble detectors (limited to high-spec detectors or control devices among obstacle detection devices and crossing obstacle detection devices), and crossing security cameras

(※) Only level crossings designated under the Act on Promotion of Railway Crossings (level crossings on roads specified in the Road Act) are applicable to the subsidy.

5. Summary (Conclusion)

The accidents and serious incidents in local railway operators have the following characteristics based on the status of accidents occurred in the past.

- About 90% of the accidents and serious incidents in local railway operators are “train derailment accidents” and “level crossing accidents”.
- The common cause of train derailment accidents is **“Track: related to maintained status of ground facilities such as track”**. **The number of this type of accidents does not show a declining trend after the Japan Transport Safety Board issued an opinion on June 28, 2018.**
- The number of train derailment accidents caused by “level crossing accident”, “natural disaster”, and “operation” has been decreasing in recent years, but these types of accidents occur once every few years.
- **The ratio of class 3 and class 4 level crossings is high** in the local railway operators that require specific measures such as the urgent abolition. **The ratio of level crossings for which measures have been taken after accidents occurred is also low compared to the JR and the major private railway companies.**