

## 5. Examples of measures for the prevention of accident

In order to contribute the prevention of accidents and to improve safety of transportation, the examples of measures such as the technical supports or the technical developments conducted by each corporation and the national support system are introduced in the followings.

### (1) Examples of the technical supports

#### (i) Railway Technical Research Institute, public foundation, RTRI

Railway Technology Promotion Center, RTRI, implemented "Site investigation", "Visiting advice by the rail advisor", "Presentation of literatures and opinion of the laboratory, etc." responding to the technical consultation from the members of railway operators.



Status of "site investigation"

[Summary]

##### - "Site investigation"

The researchers of the RTRI implement the technical diagnosis and advice directly at site for about half day in free of charge.

##### - "Visiting advice by the railway advisor"

The RTRI dispatch the rail advisor, *i.e.*, the expert retired from railway operator, having the deep knowledges and plentiful actual experiences to the site, and implemented advises, etc., also free of charge same as "site investigation".

##### - "Presentation of literatures and opinion of the laboratory"

Send the literatures or integrate opinions of researchers in the RTRI into the text and answer by telephone, facsimile, or E-mail.

[Home page of the RTRI] <http://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 have been implemented 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 implemented 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, etc., of railway facilities, and introduced proper construction methods responding the situation based on the investigation of the facilities implemented at site according to the necessity, in free of charge.

[Concrete samples]

- 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.

[Home page of the JRJT] <https://www.jrjt.go.jp/construction/outline/family-doctor.html>

[Phone] Railway General Support Section, International, General Affairs Dept., JRJT, 045-222-9016

(iii) Japan Railway Civil Engineering Association, JRCEA

The JRCEA hold the "Lecture course on the management of track maintenance" in each district transport bureau, in order to promote succession of technical abilities required to proper track maintenance management, targeted the local railway operators, as one of the supports for local railway operators.

[Home page of the JRCEA] <https://www.jrcea.or.jp/>

[Phone] Planning Dept., JRCEA, 03-5846-5300

(iv) Japan Railway Rolling Stock & Machinery Association, RMA

The RMA hold 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., RMA, 03-3593-5611



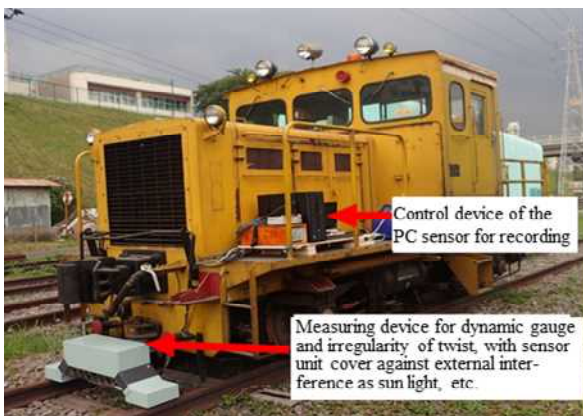
(2) Examples of technology development on the track management

Railway Technical Research Institute, public foundation, RTRI

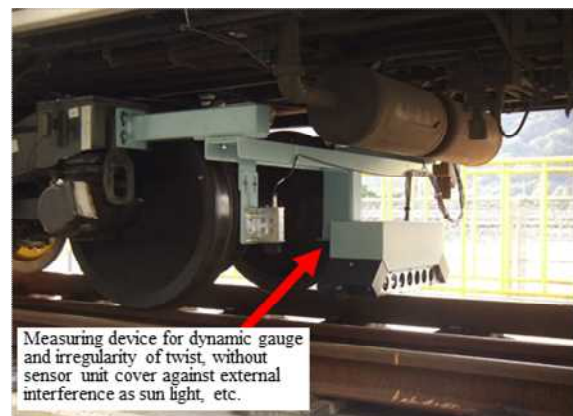
The RTRI is developing measuring devices and software to support as to enable vehicles running in safety on the ballasted track deteriorated by years in the local deserted section, etc.

(i) Measuring device for the dynamic gauge and irregularity of cross level

It is desirable to use the track inspection car for the measurement of the track irregularities, but it is not easy to introduce it due to high cost. Therefore, the RTRI is developing simple measuring device for the gauge and irregularity of cross level, which can be attached to the attachment base of the guard iron of the commercial vehicle or the coupler of the motor car, etc., for the purpose to prevent the derailment to inside gauge and the flange climb derailment.



Mounted to the motor car



Mounted to the commercial vehicle

(ii) The support system to decide the changing plan to PC sleepers

There is the case to replace to the PC sleepers in the curved track section consisted of the wooden sleepers, for the purpose to prevent the derailment to inside gauge. Therefore, the RTRI developed the system to evaluate the priority for individual curve to change to the PC sleepers, and to support decision of the construction plans.

[Phone] Track management Lab., Track Technology Div. RTRI, 042-573-7277



Display indicating the estimated and selected results of the priority and the target curves for the replacement to PC sleepers.



Display indicating the investigated results of the ratio of partially replaced PC sleepers.