

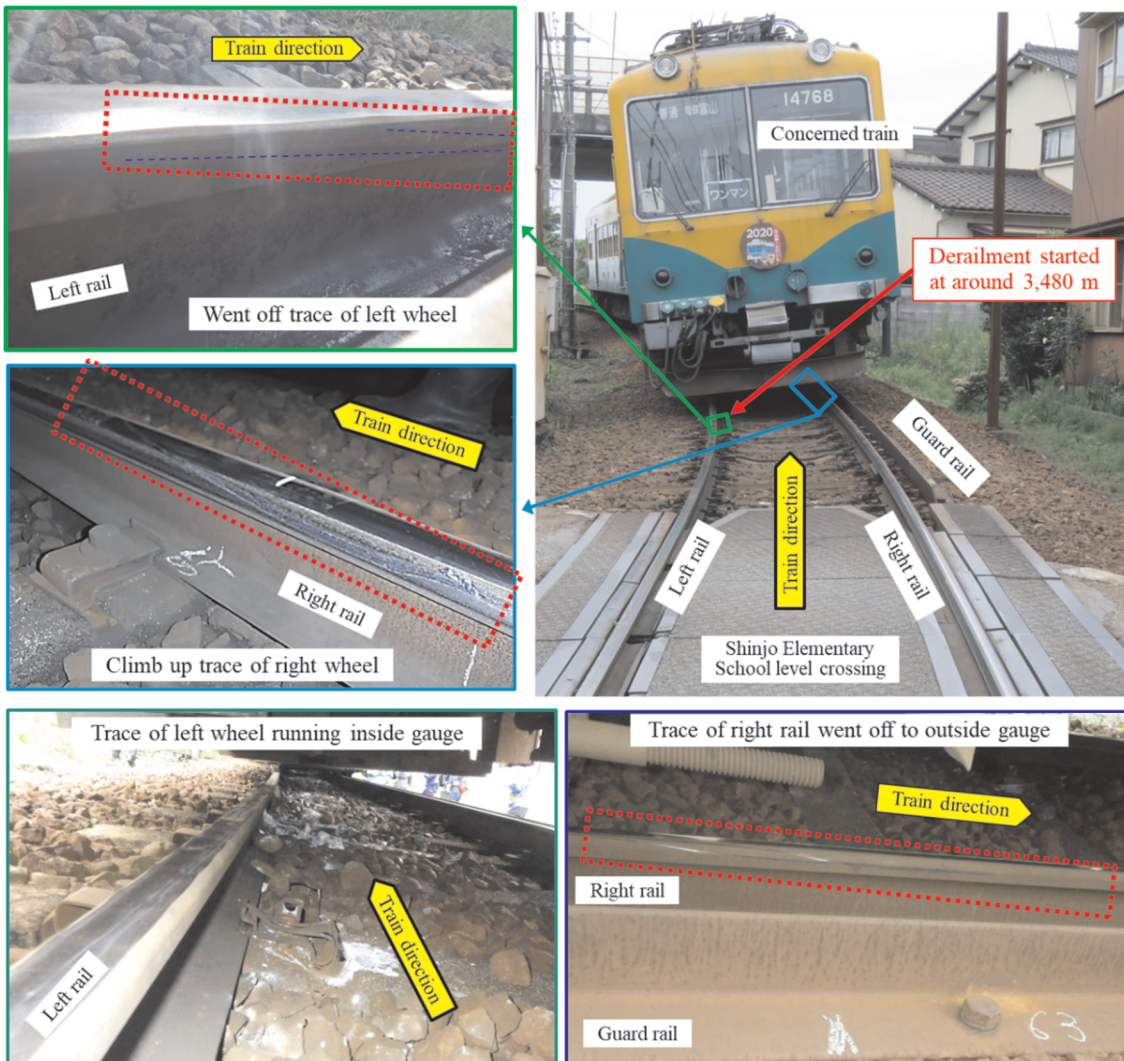
"The accident that train derailed by the significantly widened gauge while passing in curved track"

Railway operator : Toyama Chihou Tetsudou Inc.
 Accident type : Train derailment
 Date and time : About 08:56, July 26, 2020
 Location : In the premises of Higashi-Shinjo station, Main Line, Toyama City, Toyama Prefecture

<SUMMARY>

At about 08:56, July 26, 2020, the one-man operated inbound Local 1018 train, composed of two vehicles and started from Kamiichi station bound for Dentetsu-Toyama station of Toyama Chihou Tetsudou Inc., departed from Higashi-Shinjo station. While the train was passing in the left curved track of 181 m radius at the velocity of about 34 km/h, the driver of the train felt the abnormal sound and the impact, then, applied the emergency brake to stop the train.

<Status of the derailment>



After the train stopped, the driver checked the vehicle and found that the 1st axle in the front bogie of the front vehicle derailed to right, and all axles in the front bogie and the 1st axle in the rear bogie of the rear vehicle derailed to right.

There were 31 passengers and the driver were onboard the train, but no one was injured.

<PROBABLE CAUSES>

The JTTSB concludes that the probable cause of this accident was that the gauge widened significantly while the train was passing in the left curve of 181 m radius, and the left wheel of the 1st axle in the front bogie went off inside gauge.

It is probable that the gauge widened significantly because the gauge widened dynamically due to the lateral movement and the tilting of rail caused by the the lateral force accompanied by the train running, as the poor rail fastening devices existed continuously in the curved track, where the static irregularity of gauge had been exceeding the maintenance standard value.

It is probable that the irregularity of gauge had been exceeded the maintenance standard value because the maintenance was not implemented before the occurrence of this accident as the period from when the gauge exceeded the maintenance standard value to the maintenance had not been stipulated, and there were many places where the gauge exceeded the maintenance standard value and the maintenance of the other places were considered as in higher priority.

It is likely that the poor rail fastening devices existed continuously because the management based on the dangerousness against the wide gauge had not been conducted as there was no manual, etc., to enable the proper judgement and measures in the inspection of sleepers and the lack of technical activities for the maintenance management.

<SAFETY ACTIONS>

(1) Maintenance management of the track irregularities

It is desirable to establish the period from when the gauge exceeded the maintenance standard values to the maintenance, and the maintenance standard values considering the amount of the progressed track irregularities in the above period, in order to implement the management of track irregularities properly.

It is necessary to implement the maintenance management of the track materials carefully, considering sufficiently the possibility that the amount of the dynamic irregularities during the train running becomes larger than the supposed values, depending on the status of the track materials such as the sleepers and the rail fastening devices, etc.

(2) Maintenance management of the track materials

It is necessary to promote the establishment of the manual, etc., to enable proper judgement and measures for the status of the sleepers and the rail fastening devices, etc., and to comprehend correctly on their status in the inspection of sleepers and the track patrol at the same time. Furthermore, it is desirable to comprehend the exchanged history of the track materials, in order to conduct the planned maintenance.

(3) Education on the maintenance management of the railway track

It is desirable to enrich the education on the maintenance management of railway track by making the most of the outer abilities such as the technical support or the various lectures, etc., and the information exchange with the other companies, etc., in order to improve the technical activities on the maintenance management of railway track.

(4) Management system for maintenance and preservation of the railway track

It is necessary to improve the place where the gauge exceeded the maintenance standard values, by building up certainly the management system for the maintenance and the preservation of the railway track, by taking the measures such as to review drastically the safety management system and the maintenance plans, etc., in order to secure the running safety of the train.

Details can be obtained by the railway accident investigation report in the website of the Japan Transport Safety Board, *i.e.*, <https://www.mlit.go.jp/jtsb>