

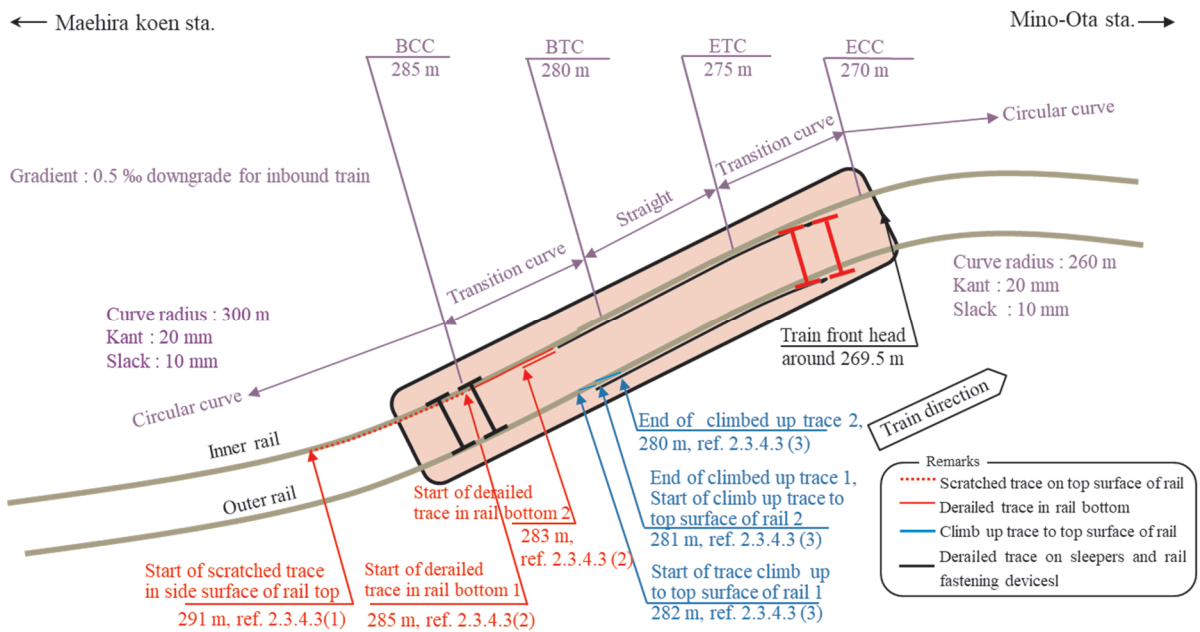
"The accident that the train running in the curved section, where poor rail fastening status had been existed continuously, derailed due to the widening gauge"

Railway operator : Nagaragawa Railway Co., Ltd.  
 Accident type : Train derailment  
 Date and time : About 14:44, March 18, 2020  
 Location : In the premises of Mino-Ota station, Etsuminan Line, Minokamo City, Gifu Prefecture

<SUMMARY>

At about 14:44, March 18, 2020, while the one-man operated inbound 12 train, composed of one vehicle and started from Hokunou station bound for Mino-Ota station, Etsuminan Line of Nagaragawa Railway Co., Ltd., was running in around the left curved track of 300 m radius in the premises of Mino-Ota station at the velocity of about 17 km/h, the driver of the train felt the impact and applied the emergency brake to stop the train.

<Outline of the accident site and the derailed traces>



<Status of sleepers & spikes in around the accident site>



<Damaged status of vehicle>



After the train stopped, the driver checked the under floor of the vehicle and found that all axles in the front bogie had been derailed to right.

There were 10 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 left wheels of all 2 axles in the front bogie went off to the inside gauge, after that the right wheels of all 2 axles in the front bogie went off to outside gauge in this accident, because the gauge was widened dynamically while the train was passing through left curved track of 300 m radius.
- It is probable that that the gauge was widened dynamically by the rail tilting and the rail movement caused by the lateral force while the train was passing, because the poor sleepers and the poor rail fastening status had been existed continuously.
- It is probable that the poor sleepers and the poor rail fastening status existed continuously because the company staff in the work-site division, who was assumed as lacked in the technical abilities, had judged that the status was enough to be observing the progress and had not been implemented the maintenance, in the management of the sleepers and the rail fastening status. In addition, it is probable that the lack of the technical activity was caused by the insufficient education and confirmation for the staffs in the work-site division by the head office.

<SAFETY ACTIONS>

(1) Reconfirmation of the safety management system

- (i) Implement the education for the staffs in charge of maintenance as to understand correctly on the dangerousness of the poor sleepers and the floating spikes, etc., in the inspection of sleepers, and confirm after that.
- (ii) The status of the sleepers, that has been judged it should be observed the progress of the poorness, should be recorded even when there was no change, in order to comprehend the status of progress of the poorness.
- (iii) When received the reports on the inspected results and the maintaining status for the track, judged the measures to be taken properly and instruct the results to the work-site division, not leave it to the work-site division.
- (iv) There is no definite standard on the measures for the case, that over three continuous sleepers are in the poor status at present, therefore, establish the rules and take measures obeyed the rules.

(2) Implementation of the track maintenance

- (i) As it is probable that the possibility to cause the derailment inside gauge becomes higher depending on the status of rail fastening, even when the measured irregularity of gauge did not exceed the maintenance standard value, to study on the introduction of the preventive measures such as to attach the gauge ties, although there was no need to be repaired, depending on the fastening status of rails.

- (ii) As for the exchange of sleepers, exchange to the PC sleepers, which are superior in the durability and the easiness of the maintenance compared to the wooden sleepers, as earlier as possible. Furthermore, as for the wooden sleepers, implement the maintenance not to continue over three poor sleepers. When the maintenance could not be implemented in time, study the introduction of the preventive measures such as to attach the gauge ties.
- (iii) When conducted the inspection of the track materials such as the sleepers, or the on-foot track patrol, etc., pay attention to the abrasion of the sleepers and the floating spikes, and secure the required rail fastening forces, if necessary, by implementing change of the sleepers, and the certain hammering and change of the spikes, etc., as soon as possible. Furthermore, as for the fastening method of rails, implement the additional hammering based on the standard of the hammering spikes as giving priority in the steep curved track, etc., where feared to widening gauge, and increase the rail fastening force by hammering the spikes correctly.

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>