

4. Summary of the "Opinion" that the JTSB expressed to the Minister of the MLIT

The Japan Transport Safety Board, the JTSB, can express its opinions to the Minister of Land, Infrastructure, Transport and Tourism, the MLIT, or to the director of the related administrative organization on the measures that should be taken in order to prevent accident, etc., and to reduce damages, pursuant to Article 26 of the Act for Establishment of the Japan Transport Safety Board.

On June 28, 2018, the JTSB stated its opinion to the Minister of the MLIT, on the four train derailment accidents due to the gauge widening occurred in the period from October 2016 to May 2017.

On the opinion to prevent the train derailment accident caused by the gauge widening

Opinion stated on June 28, 2018

Among the railway accident that the JTSB implemented the investigation, the four train derailment accidents due to gauge widening occurred in the period from October 2016 to May 2017, as follows :

Accident in Ichihashi Line, Seino Railway Co., Ltd., occurred on October 6, 2016

Report RA2017-9-2 was published on December 21, 2017.

Accident in Kishu Railway Line, Kishu Railway Company, occurred on January 22, 2017

Report RA2018-1-2 was published on January 25, 2018.

Accident in Fujisaki Line, Kumamoto Electric Railway Company, occurred on February 22, 2017

Report RA2018-1-6, was published on January 25, 2018.

Accident in Watarase Keikoku Line, Watarase Keikoku Railway Company, occurred on May 22, 2017

Report RA2018-4-1 was published on June 28, 2018.

It is probable that these accidents were caused by the the generation of dynamic gauge widening due to the rail tilting, etc., in the status that the defects of wooden sleepers and rail fastening devices had been existed continuously.

Many factors to cause the gauge widening are commonly existed in the local railway companies, etc., even though there were the factors differed for each accident, therefore, based on the knowledges obtained from the investigation of these accidents, the JTSB summarized the points to be paid attention, from the view point to prevent the similar accidents in the local railway companies as the attached material "On the prevention of train derailment accident due to gauge widening".

Hence, the JTSB expressed its opinions as follows to the Minister of Land, Infrastructure, Transport and Tourism, pursuant to Article 28 of the Act for Establishment of the Japan Transport Safety Board.

When some measures were taken responded to this opinion, the JTSB will appreciate to manage to let us known on these contents.

Notes

1. Let well known the railway operators on the contents of the railway accident reports of four train derailment accidents and the "On the prevention of train derailment accident due to gauge widening" attached in this opinion.
2. Considering the actual circumstances that the derailment accidents caused by the defects of sleepers and rail fastening devices occurred in the local railway operators, etc., have to provide the required guidance including the effective use of the existing public subsidy system and the technical support system, etc., in order to promote the measures to prevent gauge widening such as the systematic replacement to the concrete sleepers considering the places in high priority based on the occurred status of the defects or the track shape, etc.

[Attached material]

On the prevention of train derailment accident due to gauge widening, extract

Summary

Among the railway accident investigated by the JTSB, four train derailment accident caused by the gauge widening had occurred in the period from October 2016 to May 2017. It is probable that the occurrence of these accidents caused by the generation of dynamic gauge widening by the rail tilting, etc., due to the existence of continuous defects in wooden sleepers and rail fastening devices.

Many factors to cause the gauge widening are commonly existed in the local railway companies, etc., even though there were the factors differed for each accident, therefore, based on the knowledges obtained from the investigation of these accidents, the JTSB summarized the points to be paid attention, from the view point to prevent the similar accidents in the local railway companies, in order to assist to improve safety still more in the future, as follows.

1. On the managing method of the track maintenance

It is necessary to manage sleepers, rail fastening devices and rail flaws, etc., properly by the periodic inspections of tracks and the track patrols, and also it is necessary to implement measures to prevent gauge windings such as the exchange of spikes or the additional hammering of spikes, replacement of sleepers, installation of the gauge ties, *i.e.*, the metal to hold the gauge, etc. It is necessary to pay attention to the continuity of looseness of sleepers and rail fastening devices, and to give priority to steep curve with large slack, and to pay attention for not only for the outer rail side but also for the inner rail side.

The measurement of dynamic track irregularities using the track inspection car is the effective method on the measurement of track irregularities. It is necessary to pay attention for the danger to generate dynamic gauge widening due to tilting of rail, etc., and manage sleepers and rail fastening devices adequately, when implement the management of track irregularities based on the measurement of static track irregularities only.

2. On the managing standard of track maintenance

It is necessary to implement the track maintenance properly according to the status of track irregularities in order to prevent the derailment accident due to gauge widening. Therefore, it is desirable to decide the standard values considering the limit of safety, and to make clear the period of maintenance. Furthermore, it is desirable to decide the handling of the operation control and the track maintenance, etc., when the remarkable track irregularity was detected according to the necessity, in addition to the standard values for track maintenance for the conventional track maintenance, etc.

As for the slack in the curved track, it is desirable to confirm that it is arranged to the proper value corresponded to the running vehicles, and to improve the slack at site together with the track repairing works, etc., when review the present values.

3. On the track structure

It is desirable to implement systematically the replacement to the concrete sleepers, etc., which have superior in durability and easy maintainability compared with wooden sleepers, including the partial replacement to replace in the ratio of one sleeper in several sleepers, considering the places in high priority based on the generated status of defects of sleepers and the track shape, etc.

It is desirable to install the guard angles or the guard rails as possible for the places without effects by the falling stones and the snowfalls, when installed the guard rail, etc., in the curved section, from the point of view preventing the derailment accident. Furthermore, it is necessary to pay attention to the installation method such as the number of fastenings to sleeper, the height difference between rail and guard rail, in the installation of the guard rails and similar facilities.

* The opinions, full text, is published in the home page of the JTSB,
http://www.mlit.go.jp/jtsb/railway/kankokuiken_rail.html