

"Replace wooden railway sleepers with those made of concrete," the JTSB proposes.

By Yoshitaka Ito | Jun 28, 2018 10:03

The railway track of Watarase Keikoku Railway, where one in three wooden sleepers were replaced with concrete ones. It is said that replacing wooden sleepers, even if not all of them, will be effective to prevent derailments. (Courtesy of the JTSB)

Japan had four derailments in eight months in its regional railways. In response to the successive occurrences of derailments, the Japan Transport Safety Board (JTSB) submitted a proposal to the Minister of Land, Infrastructure, Transport and Tourism of Japan, Keiichi Ishii for encouraging the replacement of wooden sleepers supporting rails with those made of concrete on June 28th. The policy of the Ministry of Land, Infrastructure, Transport and Tourism of Japan is to call on railway operators across the country to take actions.

According to the proposal and other documents, one-car rolling stock of Kishu Railway derailed while running around a curve in Gobo City, Wakayama Prefecture in January, 2017. The results of the investigation showed that corroded and/or cracked wooden sleepers had reduced the strength of spikes for fixing rails, tilting the rails outwards. The derailment occurred in such a way that a wheel was caught in the widened clearance between the rails.

One month later, a two-car train of Kumamoto Electric Railway in Kumamoto City derailed while running around a curve to the right. The cause of this accident was that loosening of the spikes fixing rails to sleepers tilted the rails, and widened the clearance between them.

In May, 2017, a similar accident occurred also on Watarase Keikoku Railway in Kiryu City, Gunma Prefecture. This was the fourth derailment that occurred during almost eight months since the first similar derailment had attacked Seino Railway in Ogaki City, Gifu Prefecture in October, 2016.

The JTSB proposes to start replacing wooden sleepers of railway tracks with those made of concrete, which are higher in durability and strength for fixing, as a countermeasure. When the

cost is expensive, even replacing only one in some sleepers is effective to prevent accidents, the JTSB says. Other measures raised included installation of guard angles.

According to the JTSB, although concrete sleepers have been widely adopted by railways in urban areas, small to medium-sized local railways that are faced with difficult business environments still use a high ratio of wooden sleepers. The JTSB also requested Minister of Land, Infrastructure and Transport of Japan, Ishii to promote the provision of information to local operators so that they can make use of subsidies from the Japanese government and local governments and technical assistance programs provided by the Japan Railway Construction, Transport and Technology Agency. (Yoshitaka Ito)

#### Derailment accidents associated with wooden sleepers

Oct 2016: In Ogaki City, Gifu Prefecture, a 25-car freight train of Seino Railway derailed. Nobody was hurt.

Jan 2017: In Gobo City, Wakayama Prefecture, a one-car train of Kishu Railway derailed. None of five passengers were hurt.

Feb 2017: In Kumamoto City, a two-car train of Kumamoto Electric Railway derailed. None of approx. 50 passengers were hurt.

May 2017: In Kiryu City, Gunma Prefecture, Watarase Keikoku Railway's rolling stock for working derailed. Nobody was hurt.