

"The accident that train collided with earth and sand, etc., accumulated in the catch net for falling rocks as a result of a slope collapse, and derailed"

Railway operator : West Japan Railway Company  
 Accident type : Train derailment  
 Date and time : About 05:48, March 9, 2020  
 Location : Around 20,060 m from Bitchu-Kojiro station, between Tojo station and Bingo-Yawata station, single track, Geibi Line, Shobara City, Hiroshima Prefecture

<SUMMARY>

On March 9, 2020, the one-man operated outbound Rapid 441D train, composed of one vehicle and started from Niimi station bound for Bingo-Ochiai station, Geibi Line of West Japan Railway Company, departed from Tojo station on schedule at 05:46.

While the train was running between Tojo station and Bingo-Yawata station at the velocity of about 65 km/h, in the dark circumference before sunrise, the driver of the train felt a shock and operated the emergency brake but the train collided with earth and sand in the pocket type catch net for falling rocks accumulated due to the collapse of the slope.

<Status of the accident site and periphery >



<Status of the collapsed slope >



<Status of the derailment >



The train tilted to left side against the direction of travel and the vehicle body turned over, caused the derailment of the whole axles.

Only the driver was onboard the train, but was not injured.

#### <PROBABLE CAUSES>

The JTTSB concludes that the probable cause of this accident was that the fallen rocks and earth and sand, etc., which were caused by the collapse of the slope and accumulated in the pocket type catch net for falling rocks and pushed out resulted to hinder the route of the train, and the approaching train collided with them, turned over, and resulted the derailment of all axles, in this accident.

It is probable that the slope had collapsed because the strength of the fragile inner bedrock in upper part of the slope deteriorated gradually by the progress of the weathering in long period.

In addition, it is likely that the driver could not noticed that the earth and sand, etc., accumulated in the pocket type catch net for the falling rocks was hindering the route of the train, related with that the circumference was dark as it was before sunrise.

#### <SAFETY ACTIONS>

It is probable that this accident occurred because the slope had collapsed as the strength of the fragile inner bedrock deteriorated gradually by the progress of the weathering in long period, and the fallen earth and sand, etc., accumulated in the pocket type catch net for falling rocks and hindered the route of the train, however, the progress of the weathering are hard to be appeared in the surface of the slope. Therefore, it is necessary for the inspectors to monitor and judge carefully and continuously on the status of swelling due to the accumulation when checked the accumulated amount of earth and sand, etc., in the usual general inspection or the patrol inspection, etc., for the pocket type catch net for falling rocks.

Furthermore, the pocket type catch net for falling rocks itself can catch the falling stones, etc., and prevent to be flowed into the railway track, however there is the fear that the accumulated earth and sand were pushed out and hinder the route of the trains, based on the concerned accident. Therefore, it is desirable to conduct the inspection for the place where the pocket type catch net for falling rocks was installed same as this accident site, and take the measures such as the removal of the sprinkled place of unstable loose stones, the covering surface works such as the spraying works, the lattice frame works, the concrete covering works to suppress the collapse of slope due to the encroachment of weathering, etc., according to the necessity.

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>