

Railway accident investigation report

Railway operator : Minami-Aso Railway Co., Ltd.

Accident type : Train derailment

Date and time : About 17:32, October 29, 2015

Location : In the premises of Nakamatsu station, single track, Takamori Line, Minami-Aso Village,
Aso District, Kumamoto Prefecture

SUMMARY

On October 29, 2015, the outbound local 19 train, composed of 2 vehicles, started from Tateno station bound for Takamori station, Takamori Line of Minami-Aso Railway Co. Ltd., departed from Minami-Aso-Mizunoumarerusato-Hakusuikogen station on schedule, 17:29.

A driver of the train checked the speed restriction signal of the down line entry signal of Nakamatsu station, and operate the train running around No.11 turnout in the premises of Nakamatsu station at about 20 km/h, felt an abnormal sound and applied an emergency brake, then he also felt louder abnormal sound and vibration, and the train stopped.

After the train had stopped, the train driver checked the situation and found that the all 2 axles in the front bogie of the first vehicle derailed to right, and the all 2 axles in the rear bogie of the first vehicle and the all axles in the second vehicle entered into the up track main line, that was branch direction and different from the scheduled down track main line.

There were 11 passengers, the train driver and the conductor onboard the train, but no one was injured.

PROBABLE CAUSES

It is probable that the accident occurred, when the train had entered into the straight line facing the turnout, obeying the speed restriction signal indication of the entry signal of the station, the flange of right wheel of the first axle in the front bogie of the first vehicle entered into the gap between right side stock rail and right side tongue rail, caused the situation that the inside surface of right and left wheels of the first axle in the front bogie of the first vehicle caught both the right and left tongue rail of the turnout, resulted that all axles after the second axle in the front bogie of the first vehicle entered into the up track main line, different from the scheduled route, then the all axles in the front bogie of the first vehicle had derailed to right, and the rear bogie of the first vehicle and the all bogies of the second vehicle had entered into the up track main line, different from the scheduled route.

It is somewhat likely that the flange of right wheel of first axle in the front bogie of the first vehicle entered into the gap between right side stock rail and right side tongue rail, as the right tongue rail in the turnout was not switched to the normal position rigidly and the turnout was in the state of defect switching.

It is somewhat likely that the turnout was in the state of defect switching because there was the large switching load exceeding the switching force of the spring switch due to the increased

coefficient of friction between the tongue rail and the base board by lack of lubrication oil poured to the base board in the point of the turnout.

It is highly probable that the speed restriction signal, not the stop signal, was indicated in the entry signal although the turnout was in default switching state, because the fault contact of the tongue rail could not be detected as the contacts of micro switch in the circuit control device for detecting the default switching operation of the turnout did not switched and in connected state.