Derailment of a freight train at the Road Post 401 km on 8 January 2012

Summary

An accident occurred on 8 January 2012 at 22:10 in the railway line Daugavpils railway station Indra - State border at the Road Post 401 km of switch No1. A freight train with 58 loaded tanks and one gondola loaded with coal was travelling to the direction of the state border of the Daugavpils station.

As result of accident 17 tanks carrying dangerous goods derailed. From the 16 tanks that overturned five tanks leaked partial goods. Overall, about 180 tons of dangerous goods came to environment. The leaking of dangerous goods was limited by emergency services together with the railway infrastructure manager.

Trains traffic in the railway line station Krauja - Road Post 401 km and Road Post 401 km – station Naujene was closed up to 35 h 50 min, but in the railway line Road Post 401 km - Road Post 524 km 90 h 10 min.

Arrived on the accident site, the Transport Accident and Incident Investigation Bureau investigators found that left blade of a switch was broken in two places, which was also the reason of derailment of tanks.

Further investigation found that the flaws of a switch left blade were registered in the defectogram of the ultrasonic defectoscope, but the railway infrastructure manager was not recognizing those before accident.

The investigation has explored the railway infrastructure manager units of the flaw detectors organization system, flaw detectors learning process, and questioned a number of flaw detectors, as a result issued three safety recommendations addressed to the railway infrastructure.

Direct and immediate cause of accident was:

- Switches No. 1 left blade fragment breaking due to metal fatigue, a freight train running on the switch;

Underlying causes were the following:

- Flaw detector operators doing ultrasonic testing of switch point Nr 1 did not find any flaws in mined switch point left blade;

- Flaw detector operators doing flaw detectors data decoding in office did not find any flaws in mined switch point left blade, however flaw detector itself detected flaws;

- Flaw detector operators team leader doing supervision of flaws detector operators data decoding in office did not find any flaws in mined switch point left blade;

- Infrastructure manager did not appoint particular workers for independent decoding of flaw detectors data.

The root causes were the following:

- Infrastructure manager internal documents do not content standard providing independent worker to decode flaw detector data;

- Flaw detector operators time-table do not content additional time for flaw detector data decoding;

- Flaw detector operators and supervisors official instructions do not content responsibilities for decoding of flaw detectors data;

- Flaw detector operators training courses was not provided with course and teachers evaluating form.

Recommendations

Recommendation 2012-1

The infrastructure manager should analyze flaw detection units (departments) work organization and guarantee independent flaw detectors data decoding in the future.

Recommendation 2012-2

The infrastructure manager should improve own internal normative documentation, which regulate flaw detectors data decoding order, flaw detector operators time-table and training.

Recommendation 2012-3

The infrastructure manager should examine possibility to use hardware which can reduce human factor error influence on track flaw detection and flaw detectors data decoding.