Mines Safety Significant Incident Report No. 161

Struck by moving train — fatal accident

Incident

During the early hours of Tuesday 24 February 2009, a railway maintenance operator involved in maintenance on a mainline track was struck while between a “tamper” track maintenance machine and a passing empty ore train travelling on the bypass rail line.

It appears there was a problem with the tamper’s work heads on the dual rail side. The operator left the rear cabin, climbed off the machine between the two rail lines and walked towards the front cabin to investigate the problem. The empty ore train was travelling at about 35 km/hour when it apparently struck the operator.

The injured person was found alive but passed away before emergency service personnel arrived at the scene.

Contributory factors

Possible contributory factors may be broadly grouped as design, systems and human factors.

Design factors

- A track maintenance machine on a main railway line, with an adjacent passing line, experienced a fault with its tamping heads. The mainline and bypass rail lines were installed about 3.5 metres apart, with a rail vehicle clearance of about 1.75 metres. This exposed rail employees on foot between the tracks to a “struck by/caught between” moving machinery hazard.
- There was no internal access between the rear and front cabins of the tamper, where separate operational controls were located.
- The track machine operator alighted from the tamper on the bypass rail side around the time a passing empty train was expected to pass.
- The rail ballast in the area was coarse and sloped in a “V” formation, with the main line slightly higher than the bypass loop rail line. Marks were evident in the sloped ballast in line with the tamper working heads, and a small steel jacking plate had been placed under one of the lifting jacks. The low point of the ballast where personnel might walk was 0.5 metres from the side of the passing train.

Systems factors

- Vigilance was the primary control to warn of approaching trains.
- Time records were out by 8 minutes between train control time and the radio wavefile time documented during each communication. There was no time synchronisation communication recorded between train control and the tamper prior to going on track.
- Employees were exposed to substantial noise and were wearing local CB radio headphone and intercom sets, which may have prevented them from hearing the approaching train.

Human factors

- Upon approaching the track machine, the train driver dipped the headlights of the train but did not sound the horn as no personnel were expected to be on foot in the area.

- The deceased was working his first nightshift of a fly-in fly-out roster and, including travel, flight and work arrangements, potentially had been awake for nineteen hours before the accident.

Comments and preventative actions

To avoid a reoccurrence of this type of incident, the following preventative actions should be considered.

- Designers and manufacturers of rail equipment should, where practicable, provide an internal walkway to provide onboard access between front and rear cabins.
- Rail companies should, where practicable, provide adequate track separation or safety barriers to protect rail employees from being struck by moving rail equipment. Employees must not alight from machinery unless there is adequate clearance.
- Rail companies need to ensure that safe work procedures are developed and implemented via training and on-the-job competency assessments for all employees and site supervisors prior to carrying out work at the rail operations.
- In conjunction with employee vigilance, the safe work procedures for communications and movement during rail maintenance must include the use of signs or devices warning of the hazard.
- All rail operations should be on synchronised time.
- Rail companies need to review their fitness-for-work or fatigue management policies regarding returning to work on the first day of a fly-in fly-out operational roster, whether on a day or night shift. The policy must take into account the length of the work day and travel undertaken by the employee.

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