

EXTENDED SUMMARY IN ENGLISH

Two technicians were hit by a passing train (80849) in Markaryd, as they were performing maintenance work in a switch. One of them (B) suffered severe injuries, the other (A) was suffered minor injuries.

On 24 May, 2016, the two technicians were scheduled for night duty and were originally assigned work in Ängelholm. This activity was however cancelled, as the necessary work there had already been finished the night before. The foreman had found an inspection note about switch 22 in Markaryd, which had happened to be left unattended for several weeks. The note concerned a wear-related deformation of one of the stock rails and the two technicians were asked to handle this problem. The rail was to be re-shaped with a grinder, pending more comprehensive overhaul of the switch.

The technicians went to Markaryd by car and once there, they began preparations for the work at hand, such as starting the power generator and arranging the electric cables for the grinder. They left the vehicle's headlights switched on.

"B" began the actual grinding process in order to restore the shape of the stock rail head on the side facing the point blade, the rail head having been rolled into an unsuitable form by heavy use. "A" supervised the activity.

At one point, "B" asked "A" to check how the work was proceeding and to give advice and "A" bent down to inspect the surface of the rail. As he looked up, he saw a train, 80849, approaching at a short distance and at full speed.

Train 80849 was travelling over a protected route and under clear signals at about 100 km/h. The driver noticed the headlights of a car shining in his direction and then suddenly saw two people bending over the track some 50 metres ahead and he then applied emergency brakes. He could hear that the train hit something.

Train 80849 was an empty train made up by an X55 consist, which was scheduled to run from Gothenburg to Malmö via Helsingborg. The vehicles were re-routed through Markaryd, due to track works in Helsingborg. The accident occurred at 00.25 hrs on 25 May.

Evidence suggests, that no protective measures of any kind had been taken by "A" or "B", prior to embarking on the job at hand and that there had been no conversation with the traffic controller (at Malmö traffic control center) about establishing a track possession, and no proper arrangements were made to provide warning of approaching trains ("train warning").

The rules concerning how to protect personnel working in the track area are well established. The two technicians involved in the accident have several years' experience and have been regularly tested for the competence and knowledge required in their professional tasks (such as performing risk assessments and establishing track possessions and other protective measures). Competence checks do not, however, include practical, on-site activities.

Site protection arrangements are normally included in the "pre-planning" of maintenance activities in the track area. This planning is usually (in about 90% of the instances, according to the railway maintenance undertaker (Infranord AB) performed by the foremen, so the appointed safety coordinator in the work team needs only to check the real situation on-site against the plan and then (if all is well) proceed with the protective measures that are included

in the plan. However, the competence level needed for this mandate (to approve or reject a plan for protective arrangements) also includes the requirement to be able to perform such a planning process unaided, on-site if the need should arise; this is called "direct planning".

The direct planning process includes performing risk assessment, deciding on the correct protective measures and implementing these. All the steps must be recorded in writing, usually in a form designed for the purpose, and the procedure should be led by the appointed safety coordinator in the team. Maintenance work of the kind dealt with in this report is possible to protect through direct-planning, but pre-planning is the default procedure, as described in the pertaining rules.

Generally speaking, the two possible protective arrangements that could be applicable in a situation such as described above, are the track possession (track closed to train movements, track circuit shorted by special equipment) and "train warning". Neither of these arrangements had been put into effect, which was the direct cause of the accident.

One contributing factor is the fact that the routine for appointing a safety coordinator in a working team, was not applied to the working teams that perform track maintenance (welding, grinding etc.); these teams were expected to determine for themselves, who was going to assume the role of safety coordinator in situations where such a function was needed, unless a foreman did this when the jobs were allotted. No foreman was on duty when the team (technicians A and B) were sent out on the job in question.

Safety recommendations

No safety recommendations are issued as a result of this investigation, mainly because the commission is aware, that there are measures being taken by concerned parties, in response to recommendations issued together with earlier reports on incidents and accidents related to maintenance work in the track area.