

The derailment of D203 in Brühl station

On February 6th, 2000, D203 from Amsterdam heading for Basel derailed in the diverging track of switch No. 48 in the Brühl station area. Nine people died and 149 were injured, the material damage was at about 50 Million DM.

The investigations at the crash site quickly revealed, that the derailment resulted from overspeed at switch 48, whose geometry only allowed a safe maximum speed of 53 kph. Therefore, the regular speed for running over the diverging track was limited to 40 kph. But according to the engine's data recorder, the train travelled at 122 kph when it finally derailed.

So the main question is: Why was D203 going more than three times faster than allowed?

At the time of the crash, the track regularly used by southbound trains was closed due to ongoing track maintenance work. Accordingly D203 (and 10 other trains before) had to use the opposite track usually used by northbound trains. Because of technical limitations of the interlocking system responsible for the Brühl station area, a special signal aspect (called Zs1) had to be used on the entry signal A2 of Brühl station in this particular situation. The signal aspect implicitly included a speed limitation of 40 kph for the whole station area, up to the exit signal (N3) 2500 m away.

According to the data recorder, the train driver first obeyed the 40-kph-rule and passed the entry signal A2 at about 38 kph. But 300 m behind A2, he started accelerating the train. As there was no line-side ATC (Automatic Train Control) installation, the train could not automatically be stopped as it exceeded the given speed limitation.

Investigations of the German Railway Supervision Agency ("Eisenbahnbundesamt" - EBA) showed that the driver probably was confused by a bunch of contradictory and inconsistent information. These information were given both on trackside boards announcing the track works site and also in the printed documentation the driver received before starting his shift. Furthermore the whole organizational process of managing the track works in the Brühl station were supposed to be inadequate and erroneous.