The Bruehl train accident—German rail safety on the decline

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With the tragic June 1998 Eschede accident still fresh in mind, in which of one of Germany's high-speed ICE trains crashed killing 101 persons, Germany's Deutsche Bahn AG rail corporation has once again placed itself at the centre of public attention with a new disaster.

In the early hours of Sunday, February 6, night express train D 203 derailed at Bruehl station near Cologne while en route from Amsterdam to Basle with about 300 passengers on board. The toll so far is eight dead and one person in critical condition. A total of 149 passengers were injured, and on Tuesday evening 46 seriously injured were still being treated at local hospitals.

Due to track construction work the train was diverted to the opposite-direction track before reaching Bruehl station so it could bypass the construction site that was unusually long, 6 kilometres. To do this the engine driver reduced speed to the prescribed 40 kilometres per hour. But he then re-accelerated to about 120 kilometres per hour, although the speed limit was still in effect.

While driving through Bruehl station the train traversed another switch that was supposed to divert it to an adjacent track which is only designed for a maximum speed of 60 kilometres per hour. The high speed caused the train to derail. It hurtled down the embankment, narrowly missing a group of trees. The locomotive smashed into the wall of one of the nearby one-family houses. Some of the train cars were dragged down the embankment and demolished, while others buckled up sideways in the station and were crushed against the pillars of the station roofing.

In this instance the cause of the accident appeared to be quickly identified. The engine driver had not observed the signalled maximum speed, and had accelerated to three times that speed. The retrieved tachograph had recorded a speed of 122 kilometres per hour at the time of the accident. A disaster was thus inevitable.

Despite this, the safety concept of Deutsche Bahn is once again at the centre of public debate, and not without reason. For one thing, the engine driver's motivations for acting the way he did are not yet clear, but there was undoubtedly some reason for his actions. It has not been possible to question him yet. Although practically uninjured physically, he is being treated for severe shock in the psychiatric ward of a hospital.

The investigations of both the Public Prosecutor's Office, which has started official inquiries as to whether the engine driver is guilty of involuntary manslaughter, and the Federal Railway Office, which is trying to ascertain the cause of the accident on its own, are mainly focused on the question of why the engine driver accelerated the train's speed so much while approaching the station.

As reported by the WDR broadcasting station on Wednesday evening, the Railway Office's investigations have already unearthed some indications that the engine driver may have been, at the least, greatly irritated by contradictory instructions. For instance, according to this source the Railway Office's official “Temporary Low-Speed Approach Points” (LA) listing stipulated a speed of 120 kilometres for the track section under repair.

The LA listing provides for every engine driver a documentation of line information that deviates from the engine driver's own knowledge of that railway line, especially on such sections where trains must drive at a lower speed than is otherwise customary. It is important to note in this context that normally all engine drivers must know a line very well indeed before they are allowed to drive a train on it for the first time. In other words, they generally know when and where they are allowed to speed up the train.

However, Deutsche Bahn is still attempting to shift the entire blame on the engine driver, claiming, as one company spokesperson put it, that it is “completely irrelevant what was in the LA—the signals are the supreme law for engine drivers”.

But, according to the WDR report, the signals themselves were ill-suited to provide the engine driver with reliable instructions. For a start, one mobile construction site signal apparently actually did display a speed of 120 kilometres per hour. Also, the intermediate signal required to be in place at certain intervals was missing along the construction site section, which was a full 6 kilometres long. This signal could have reminded the engine driver of the speed limit and induced him to slow down the train.

Every car driver in Germany knows that, at highway construction sites, signs repeating a speed limit are put up at intervals of one kilometre, even though the speed limit displayed on the first sign is still fully in effect. This takes into account the fact that briefly perceived signals may quickly be forgotten by drivers. Such a reminder is all the more necessary for engine drivers who bear the responsibility for hundreds of passengers as they carry out their monotonous engine driving work in the middle of the night.

It would be a far too limited approach, however, if one were to restrict the responsibility borne by Deutsche Bahn for the disaster entirely to mistakes that were the immediate cause of the engine driver's confusion. These mistakes are merely the consequences of a corporate policy that has been systematically undermining the

safety of employees and passengers for years.

As was already established in the investigation of the Eschede ICE accident, a combination of numerous individual defects culminated in the disaster, all of which had one common denominator: cost reduction for the purpose of improving competitiveness in the increasingly embattled markets of the transportation sector.

Ever since formerly state-owned German Rail started out on the road to privatisation, there have been a number of developments that, in retrospect, make the disasters in Eschede, and most recently Bruehl, seem inevitable. When Hartmut Mehdorn, the Chairman of Deutsche Bahn AG, says: “Safety is our most valuable asset”, this should be taken quite literally: safety as the potential for future cost reductions.

Deutsche Bahn, Europe's largest transportation company with a workforce of 240,000 employees, has already cut back 120,000 jobs within the past four years, including roughly 10,000 engine drivers. In the company's travel and tourism division, for instance, this has resulted in employees accumulating an overtime backlog of more than 100 hours. Most of the workers take pay for part of the overtime instead of time off because “that's the only possibility”, as a trade union spokesman put it.

In January of this year, further cost reductions were announced amounting to 3 billion deutsche marks up to 2004, which, according to the trade unions, means that approximately 70,000 jobs will be cut, including 6,800 engine drivers—one-third of their total number!

Also, German Rail was split up during the privatisation process into numerous separate units, such as long distance traffic, commuter traffic and freight traffic. Among other things, this has resulted in engine drivers of long distance trains being stuck with the monotony of this work, while in the past they were able to work switch shifts in the different categories, which helped prevent fatigue.

Also affecting safety is the outsourcing of track construction and repair work to private companies with little or no knowledge of railway operations. In the past such construction gangs always had experienced railwaymen in their midst whose competence guaranteed that construction sites were properly safeguarded. Numerous moderately serious accidents over the past few years have involved construction sites, adding fuel to the assumption that one of the reasons for the latest accident in Bruehl was insufficient safeguarding of the construction work.

The training of engine drivers has undergone a change over the past three years which is also hardly conducive to safety. Whereas in the past an engine driver was trained for 18 months, today it is possible for someone with a qualified technical profession to acquire the right to drive trains on their own with up to 1,200 passengers at speeds of up 200 kilometres within seven months.

While it is true that the unfortunate engine driver of train D 203 was trained for 18 months and then employed by a private railway company for five years, he only had three months to prepare for long distance traffic after he returned to Deutsche Bahn in August 1999. At the time of his training, by the way, the regulation was that two drivers worked together in a train engine and that, additionally, young engine drivers worked under the guidance of an experienced colleague for six months in what was called “supervised employment”. This is no longer the case.

Not least of all, the technical equipment used by Deutsche Bahn casts a glaring light on the company's safety concept. Helmut Holzapfel, professor for traffic planning at Kassel, describes Deutsche Bahn's safety standards bluntly as “retrograde”, stating that the existing track safety systems have not been improved for decades.

Once an engine driver has been diverted to an opposite-direction track—which is customary in the case of construction sites, including the one at Bruehl—-he can literally “do whatever he feels like” without being hindered by precautions, such as inductive safeguarding equipment which doesn't work on an opposite track. The inductive safeguard system otherwise automatically brakes the train if the engine driver ever disregards or doesn't notice instructions or signals.

Only one day after the accident, Hartmut Mehdorn acknowledged on ZDF television's morning news program "Morgenmagazin" that the idea of the scheduled cost reductions was “simply, as is common practice in industry, to increase the company's efficiency by 5 percent each year”—an increase the company must achieve in all-out competition with road and air carriers and other private railway companies.

A closer look at this competition is enough to make one fear the worst for future railway safety. The OTV transportation trade union sent out questionnaires to professional truck and bus drivers last summer to establish their workload. The results were shocking: 44 percent of respondents work 60 to 80 hours a week and 86 percent of these drivers stated that they had dozed off while driving more than once. Forty percent of respondents were not able to observe the required driving breaks. Almost all of them had experienced fatigue, and there is widespread incidence of drivers falling asleep for a few seconds, threatening near-accidents.

The situation is no less catastrophic in other sectors of transportation. Pilots are in the cockpit for up to 14 hours; cab drivers work 12-hour shifts with a maximum of 45 minutes break. It is all too easy to envisage the kind of work stress in store for the engine drivers and other employees of Deutsche Bahn in the future—and the consequences for what the company proudly calls “the safest means of transportation in the world”.