Rail Accident and Incident Investigation Unit

Summary
Safety Investigation Report
Collision of a shunting locomotive with an empty, parked passenger train
Schaerbeek Marshalling yard R - 13/05/2024

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July 2025

REPORT VERSION TABLE

Version number	Subject of revision	Date
1.0	First version	15/07/2025

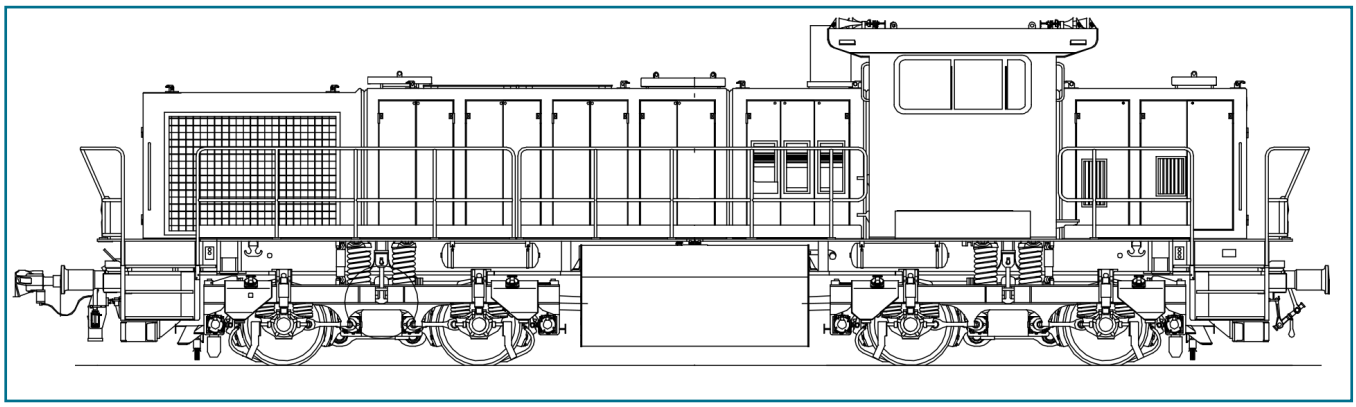
Any use of this report with a different aim than of accident prevention - for example in order to attribute liability - individual or collective blame in particular - would be a complete distortion of the aims of this report, the methods used to assemble it, the selection of facts collected, the nature of questions posed and the ideas organising it, to which the notion of liability is unknown. The conclusions which could be deduced from this would therefore be abusive in the literal sense of the term.
In case of contradiction between certain words and terms, it is necessary to refer to the Dutch version.

SUMMARY

On Monday, 13 May 2024, the train driver starts his shift at 05:05 a.m. and performs work in the Schaerbeek marshalling yards throughout his shift, together with the chief First Assistant Operations and the assistant First Assistant Operations.

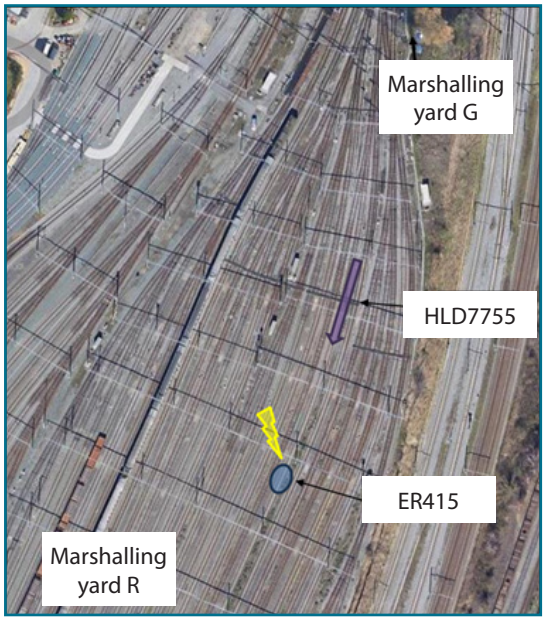
Between 8:30 a.m. and 9:00 a.m., another train driver, who is in line study, joins the train driver and First Assistants Operations. For his line study, he spends the day in the driver's cab next to the train driver.

During his shift, the driver performs several shunting operations with the shunting locomotive HLD 7755, both in the direction of travel with the short nose at the front and in the direction of travel with the long nose at the front. In these shunting operations, First Assistants Operations support the movements.



← Long nose direction of travel

Short nose direction of travel →



At the end of the morning, the chief First Assistant Operations receives via radio the order from the assistant station manager to couple shunting locomotive HLD 7755, positioned on track 720 of Schaerbeek marshalling yard G, to the empty SNCB/NMBS passenger train ER415, parked on track 727 of Schaerbeek marshalling yard R. Next, this passenger train has to be taken to the carwash. The driver of the shunting locomotive learns verbally from the chief First Assistant Operations 'bac-garé' and that the shunting locomotive will then be used by another driver for the shunting service 'bac-carwash'.

Shortly after 11:10 a.m., the shunting locomotive departs from track 720. On board at the time are four people: the driver of the shunting locomotive, a train driver in line study and two First Assistants Operations.

At about 11:12 a.m., the shunting locomotive collides with the head of the empty, parked passenger train on track 727 during the shunting operation. As a result, the two First Assistants Operations and the train driver are injured. Furthermore, there is damage to the passenger train: the buffers of the locomotive are completely compressed.

After the initial findings on site and an exchange meeting with the parties involved, the RAIIU decided to open a safety investigation into this accident.

The direct cause of the accident is that the single locomotive was unable to brake in time to prevent the collision with the empty, parked passenger train.

A contributing factor is the limited visibility of the tracks in a marshalling yard from type 77 locomotives in the direction of travel with the long nose at the front.

The limited visibility was confirmed during a reconstruction ride.

A contributing factor is the lack of fully developed and standardised procedures for ordering shunting movements, both verbally and via radio.

The existing procedures for ordering shunting movements are incomplete. Thus, there is no requirement to explicitly state whether a track is free or occupied.

In addition, there is no standardised procedure for verbally ordering shunting movements without radio, as opposed to ordering shunting movements via radio. This leaves room for interpretation and can lead to misunderstandings about the shunting movement.

The railway undertaking's current analysis does not sufficiently take into account the need to explicitly state the status of the track when ordering a shunting movement and the specific risks associated with unstructured verbal ordering of shunting movements.

The RAIIU recommends the DRSI to ensure that the study planned by the SNCB/NMBS on standardising communication for carrying out a shunting operation is based on a thorough risk analysis, taking into account both the content and the mode of communication to reduce the risks of differences in understanding and interpretation.

A systemic factor is that monitoring and/or auditing the communication of shunting movements is insufficient to identify deficiencies.

It went unnoticed or was not acted upon that stating the status of the track when ordering shunting movements via radio is not mandatory, so it is not always done. In addition, it has not been noted that verbal ordering of shunting movements lacks standardisation and leaves room for the use of locally used but not officially defined terms.

The RAIIU recommends the DRSI to ensure that the thorough evaluation of shunting operations, including communication, is part of the railway undertaking's monitoring and/or audits to identify and address the risks of various deficiencies and deviations.

A systemic factor is that the danger of a collision due to limited visibility in locomotives operated in the long nose direction of travel was insufficiently identified.

The existing regulations regarding driving on sight stipulate that the movement must be performed at a speed at which the driver can stop with certainty before any visible hindrance. However, this leaves room for interpretation in situations where visibility is severely limited. In locomotives such as the shunting locomotive HLD 7755, which offer a limited visibility of the track in the direction of travel with the long nose at the front, hindrance is only visible very late or not at all. It seems that the railway undertaking's analysis did not sufficiently take this into account: for such cases, there are no additional regulations or guidelines requiring, for example, an adjusted speed limit or specific instructions.

The RAIIU recommends the DRSI to ensure that the SNCB/NMBS carries out a study to determine how the safety of a shunting movement with type 77 locomotives in the direction of travel with the long nose at the front can be improved in view of the structurally limited visibility.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