

Recommendations issued from the Security Investigation Report

DERAILMENT OF A FREIGHT TRAIN WETTEREN - 4 MAY 2013

RECOMMENDATIONS

1. AIM AND FUNCTION OF THE RECOMMENDATIONS

The safety recommendations made by the Investigation Body for Railway Accidents and Incidents are goal oriented at the parties concerned. They are intended to improve or maintain safety on the railways

Safety recommendations from the investigation body in no case create a presumption of blame or liability. The recommendations should not be taken in this sense.

Recommendations are divided into 3 categories:

- Recommendations in relation to the causes of the accident
 - direct or immediate causes
 - indirect or underlying causes
 - aggravating factors
- Recommendations in relation to the consequences of an accident

After the implementation of improvements from the recommendations made, the implications of an accident that takes place under the same dangerous conditions would most likely be much smaller.
- Recommendations concerning other findings

These findings are made during the investigation, but have no connection with the incident under investigation.

The addressee of a recommendation is the supervisory authority which has responsibility with regard to the actors concerned. For the rail sector the recipient is the National Safety Authority, the DRSI.

If circumstances so require (eg when actors do not belong to the rail sector), the addressee may be another national or international supervisory authority.

As a result of the recommendations, solutions (measures, improvements, renewals, etc.) are elaborated by the parties concerned under the responsibility of the supervisory authority.

Monitoring of the implementation of these solutions in relation to the recommendation made is the responsibility of the addressee (for the railway sector, the DRSI).

If appropriate measures to improve safety have already been taken during the course of the investigation, no recommendations must be formulated and it is sufficient to indicate the measures taken in the report.

2. RECOMMENDATIONS IN RELATION TO THE CAUSES OF THE ACCIDENT

N°	Finding – conclusion of the analysis	Recommendation
1	<p>Preventive measures:</p> <p>The presence of works (and the lights) on the day of the accident could have diverted the driver's attention away from correctly perceiving the meaning of signal RX-W.6: the works and the signal were simultaneously visible.</p> <p>In a situation like that which occurred in Wetteren, the infrastructure manager's procedures do not impose temporary speed restrictions.</p>	<p>The DRSI should ensure that railway undertakings re-evaluate the procedure for informing train drivers, in the context of works in progress that do not require temporary speed restriction but could create a distraction.</p> <p>The DRSI should ensure that the infrastructure manager re-evaluates the procedure for temporary speed restrictions and ensures that the risk of 'train drivers being distracted by works in progress in the adjacent tracks', as was the case in Wetteren, is incorporated in the safety management system.</p>
2	<p>Preventive measures:</p> <p>The investigation into the driver's timetable indicated a significant level of fatigue at the start of his service and at the time of the accident.</p> <p>Railway undertakings follow rules related to shift organisation, including for night shifts. This type of shift work scheduling is part of the special assessment during training and recruitment of staff (psychological and medical profile). Nevertheless, depending on the circumstances a specific form of fatigue can occur.</p> <p>When estimation of the fatigue level is based on self-evaluation, the relative ineffectiveness of this evaluation has been demonstrated.</p>	<p>The DRSI should ensure that railway undertakings set up procedures to limit the risks of impaired alertness of drivers to a minimum by introducing a system of fatigue management or by any other system.</p>

3	<p>Recovery measures:</p> <p>The railway system expects the drivers on its railway network to correctly perceive and interpret the signals and to take the appropriate action.</p> <p>The railway undertakings have adopted different protection mechanisms to help prevent accidents.</p> <p>These mechanisms are inadequate in case a driver wrongly perceives or misinterprets a warning signal.</p>	<p>The DRSI should ensure that railway undertakings and the infrastructure manager, within the framework of what is possible, take into account the principle of human error, so that a simple failure does not immediately lead to a disaster and that the identified risks are limited by structural and operational measures</p>
4	<p>Recovery measures:</p> <p>One of the tasks of the train protection system MEMOR is to remind the driver of restrictions using lights on the display: this was not sufficiently striking to be perceived by the driver and to play a role in recalling information.</p> <p>In the best case, the MEMOR light allows the driver to evaluate the situation again, however a correction of their perception of the situation is not possible as the signal is no longer visible and as MEMOR gives no indication of its aspect.</p> <p>In the absence of physical defences with the built-in safety management of trains, the protective measures, present at the time of the accident, were insufficient to prevent an accident.</p>	<p>It is important that the commitments, made after the railway accident in Buizingen, are observed to equip the Belgian railway network and the trains with ETCS.</p> <p>It is recommended at all levels of decision-making to continue the efforts to implement the proposed plans¹.</p> <p>The DRSI should ensure that railway undertakings and infrastructure manager evaluate their safety management system as to elaborate operational measures for the interim period between now and the full equipping of the network with ETCS, that could improve the level of security.</p>

3. RECOMMENDATIONS WITH REGARD TO THE CONSEQUENCES OF THE ACCIDENT

N°	Finding – conclusion of the analysis	Recommendation
5	<p>Mitigation measures:</p> <p>During the day of the accident, representatives from several companies entered the safety perimeter around the site of the accident, without prior risk analysis or LMRA (Last Minute Risk Analysis) and without appropriate personal protective equipment.</p> <p>The company responsible for the salvage work applied the above method correctly and effectively and the organization of access to the site of the accident during the salvage operations was more than outstanding</p>	<p>The DRSI should ensure that railway undertakings and the infrastructure manager carry out the necessary risk assessments and LMRA in their procedures and ensure that agreements, safety rules and perimeters are respected by its own staff and (sub-) contractors and that persons present are sufficiently aware of the risks associated with the presence of RID goods.</p>

4. RECOMMENDATIONS WITH REGARD TO OTHER FINDINGS

N°	Finding – conclusion of the analysis	Recommendation
6	<p>Mitigation measures:</p> <p>The analysis of the GSM-R messages from the driver displayed a relative confusion that has already been brought to light by persons present in other accidents. Certain functions of the GSM-R device seem complex and must be used by a train driver under stress conditions during emergencies.</p>	<p>The DRSI should ensure that the railway companies take the necessary measures to address the risks associated with an incorrect manipulation of the GSM-R in emergency situations.</p>
7	<p>Mitigation measures:</p> <p>After the end of the provincial stage, various parties, including provincial authorities, organised and discussions and sharing of lessons learned with all stakeholders.</p> <p>Railway undertakings and the infrastructure manager have so far partially exchanged their experiences.</p>	<p>The DRSI should ensure that railway undertakings and the infrastructure manager develop the principle of exchange meetings after serious incidents so that experiences and lessons can be systematically shared.</p>
8	<p>Mitigation measures:</p> <p>The infrastructure manager's emergency plan foresees that Traffic Control alerts the emergency service HC100 and acts as the single point of contact.</p> <p>As a result of communication problems with the driver, TC was required to gather information.</p> <p>TC did not directly contact HC100 but allows contacts through a service of SNCB/NMBS Holding, the SOC, which is not officially recognised by the HC100 for these situations.</p>	<p>The DRSI should ensure that the infrastructure manager meets all its obligations as foreseen in the internal emergency intervention plan in order to avoid possible misunderstandings.</p>

9	<p>Mitigation measures:</p> <p>The intervention of the emergency services took place before complete and accurate information on the RID goods, provided by the railway undertakings, was communicated.</p> <p>Ideally the emergency services must be informed of this information before their arrival on site, in order to ensure the safety of residents and of own staff and to adopt proper procedures when fighting fires.</p>	<p>The DRSI should ensure that the infrastructure manager evaluates procedures to ensure that all expected information about RID goods is immediately and automatically communicated to HC100.</p>
10	<p>Mitigation measures:</p> <p>The driving behaviour of train drivers can be evaluated through the analysis of train data recorders.</p> <p>There is no original manual for the use of the train data recorder in an official language, reviews could not be traced and a manual for the analysis of train data recorders relating to evaluations of drivers was not available.</p> <p>Recent technical adjustments to the locomotives involved in the accident, including the provision for registration of the use of the horn are properly documented and traceable.</p> <p>The information from train data recorders was insufficiently used by the railway undertaking for evaluation and guidance of train drivers.</p>	<p>The DRSI should ensure that the railway undertaking completes the working procedures, documentation and manuals for the train data recorders and that all changes are traceable.</p>

