MINISTRY FOR
TECHNOLOGY AND INDUSTRIAL
TRANSPORTATION SAFETY BUREAU

FINAL REPORT (EXTRACTION)

2021-0682-5
(HU-10084)

Railway incident / Other
Ferencváros, 11 July 2021

Translation

This document is the translation of Points 1, 5 and 6 of Hungarian version of the Final Report. Although efforts have been made to translate the mentioned parts of the Final Report as accurately as possible, discrepancies may occur. In this case, the Hungarian Final Report is the authentic, official version.

Basic principles of the safety investigation

The purpose of the safety investigation fulfilled by Transportation Safety Bureau (TSB) as National Investigation Body of Hungary is to reveal the causes and circumstances of serious railway accidents, railway accidents and railway incidents and propose recommendations in order to prevent similar incidents. The safety investigation is not intended to examine and determine fault, blame or liability in any form.

The findings of the safety investigation are based on an assessment of the evidence available and obtained by TSB in the course of the investigation, taking into account the principles of a fair and impartial procedure. In the Final Report, the persons involved in the occurrence shall be referred to by the positions and duties they had at the time of the occurrence.

The Final Report shall not have binding force and no appeal proceedings may be initiated against it.

This safety investigation has been carried out by TSB pursuant to relevant provisions of

- Act CLXXXIV of 2005 on the safety investigation of aviation, railway and marine accidents and incidents;
- Commission Implementing Regulation (EU) 2020/572 of 24 April 2020 on the reporting structure to be followed for railway accident and incident investigation reports;
- in the absence of other related regulation of the Act CLXXXIV of 2005, the TSB conducts the investigation in accordance with Act CL of 2016 on General Public Administration Procedures.

Act CLXXXIV of 2005 is to serve compliance with Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety.

The competence of the TSB is based on Government Regulation № 230/2016. (VII.29.) on the assignment of a transportation safety body and on the dissolution of Transportation Safety Bureau with legal succession.

The safety investigation is independent of other investigations, administrative infringement or criminal proceedings, as well as proceedings initiated by employers in connection with the accident or incident.

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1. SUMMARY

On 11 July 2021, at 14:24 in the area of Ferencváros station, the freight train № 66822 coming from Kőbánya upstream on the E5 track, crossed the main signal “Fh” at danger, with the oral authorisation of the chief traffic manager. The train was stopped – via manual signalling – after opening up the switch 82/b in the track route already set for passenger train № 3545 (from track IV via track E6 towards Kőbánya-Kispest).

The IC found that the chief traffic manager actually wanted to call train № 49995, which was in front of the E entrance signal, by giving the oral authorisation, but he made a mistake about the train number and called train 68822 instead. In the conversation, the train number (68822, erroneously) was agreed but not the location of the train.

The occurrence can be directly attributed to the chief traffic manager’s error and failure to identify the location, but it was also contributed to by the fact that the chief traffic manager, working under a heavy workload at Ferencváros station, was not supported by an IT solution or a good logging procedure to track trains.

The consequences were exacerbated by the fact that, despite the low speed he was travelling at, the locomotive driver did not realise that he was driving onto an incorrectly positioned switch and burst it open.

The TSB issues safety recommendations on how to facilitate the traceability of trains and how to prepare for the increased traffic expected due to ongoing developments.

5. CONCLUSIONS

5.1 Summary

5.1.1 Direct causes

Acts, mistakes, events or conditions or a combination thereof the elimination or avoiding of which could probably have prevented the accident or incident:

a) The chief traffic manager made a mistake in identifying the train in front of the E signal, so he called the locomotive driver of the train with the supposed number, who actually was the locomotive driver of a train staying in a different position;
b) the instruction identified the train number but not the position of the train;
c) the driver accepted the authorisation which lacked the identification of the location;
d) the chief traffic manager did not send a subsidiary signal to the home signal.

5.1.2 Indirect causes

Acts, mistakes, events or conditions which influenced the occurrence by increasing its probability, accelerating the effects or the severity of the consequences, but the elimination of which would not have prevented the occurrence:

a) apparent occupation in the safety installation was probably caused by the rainy weather;
b) the authorisation for the train № 66822 was requested 33 minutes before departure, compared to the 10 minutes minimum;
c) there was no automated solution to assist the chief traffic manager with correctly identifying the train;
d) the driver did not detect the incorrect positioning and then the opening up of the switch № 82/b;
e) the malfunctioned computers in the control interface of the safety installation had not been repaired or replaced, which increased the tasks of the chief traffic manager by significantly increasing the chances of error.

5.1.3 Systemic factors

Causal or contributing factors of organisational, management, social or regulatory nature which are likely to have an effect on similar or related occurrences, particularly including regulatory framework conditions, the design and use of the safety management systems, the skills of the personnel, the procedures and maintenance:

a) the logbooks used do not help to monitor the traffic situation, but are a source of distraction;
b) the communication rules (Instruction T.25) entered into force one day after publication, so no prior training of staff was possible; training was not provided until several months after entry into force, and the expected training regulations were not established until the draft report was prepared.

5.2 Actions taken

In connection with the event, all the chief traffic managers and employees who held a chief traffic manager licence participated in on-site practical traffic training performe by the Station Management.

The IC considers that the training sessions, although useful, do not address the problem and therefore their effectiveness is questionable.

5.3 Additional notes

Factors that are not related to the occurrence of the incident but are risk factors:

a) there is a persistent problem with the continuous signalling between Kőbánya felső and Ferencváros stations.

5.4 Proven procedures, good practices

In order to reduce the consequences of the occurrence and avoid a more serious outcome, the train was stopped after the emergency was detected, with the assistance of a driver, and the rescue of the endangered passenger train (which did not become necessary) was prepared.

5.5 Lessons learnt

The occurrence was based on human error, which is to some extent an inevitable feature of human work. However, the likelihood of error is further increased by in-service disruptions and the heavy workload of the staff.

This can be offset by well-organised collection of the necessary information (logbooks), supporting infrastructure (train number tracking) and the development of a compliant practice that helps to detect errors (location identification according to instructions).

The workload resulting from the high traffic volume at the station is expected to increase in the coming years, so a risk analysis should be carried out and the tasks and activities of the traffic management staff should be reconsidered as necessary.

6. SAFETY RECOMMENDATION

6.1 BA2021-0682-5-01

During the investigation, the IC found that the chief traffic manager of Ferencváros station does not have at his disposal the supporting tools (appropriate logbooks, automatic train number tracking) to continuously and accurately monitor the trains moving on the track network under his control, and therefore the possibility of error is high. TSB therefore issues the following safety recommendation:

Number: **BA2021-0682-5-01**

Addressee: **Railway Authority Division, Ministry for Innovation and Technology**

Responsible for introduction: **MÁV Zrt.**

The TSB recommends reviewing the train identification procedures at Ferencváros station to see to what extent they allow continuous monitoring of trains in service; and, if necessary, introducing a logging system and/or train number tracking technology that allows traffic management staff to continuously monitor the exact location of trains moving on the network controlled by them.

By acceptance and expected implementation of the safety recommendation, the risk of traffic management staff making mistakes about the position of trains can be reduced.

6.2 BA2021-0682-5-02

During the investigation, the IC found that the job of the chief traffic manager of Ferencváros station entails a high risk of error due to the tasks to be performed, which require different mental models, and the ongoing transformation and development of the railway network connected to the station will even significantly increase the traffic to be managed.

Number: **BA2021-0682-5-02**

Addressee: **Railway Authority Division, Ministry for Innovation and Technology**

Responsible for introduction: **MÁV Zrt.**

The TSB recommends carrying out a workload analysis of the traffic management staff of Ferencváros station, also from the point of view of how suitable the existing technology and equipment are to keep the workload below the critical level for the safe control of traffic (which is expected to increase in the future), or what changes and improvements could be made to make them suitable.

By acceptance and expected implementation of the safety recommendation, future traffic growth will not increase the risk of accidents at the station due to traffic management errors.

6.3 BA2021-0682-5-03

In the course of the investigation, the IC found that MÁV Zrt.'s Instruction No. T.25 – which also contains regulations directly related to the management of traffic – entered into force on the day following its issuance, thus the time necessary for the training and preparation of the personnel was not provided.

Number: **BA2021-0682-5-03**

Addressee: **Railway Authority Division, Ministry for Innovation and Technology**

Responsible for introduction: **MÁV Zrt.**

The TSB recommends reviewing the procedures for issuing instructions of MÁV Zrt., with a view on how it provides the necessary preparation before entry into force, taking into account that the instructions may affect several railway companies.

By acceptance and expected implementation of the safety recommendation, it can be ensured that all employees concerned will be aware aware of the instructions when they come into force and that safety-critical tasks are carried out in the same way.

6.4 BA2021-0682-5-04

During the investigation, the IC found that the necessary changes to the training system of MÁV Zrt. and RCH Zrt. as required by Instruction No. T.25 had not been made even more than one year after its entry into force, until the draft final report was issued.

Number: **BA2021-0682-5-04**

Addressee: **Railway Authority Division, Ministry for Innovation and Technology**

Responsible for introduction: **railway companies using the national network**

The TSB recommends that the safety management systems of railway undertakings using the national network should review the competence management in order to ensure that their training instructions contain the training requirements set out in Chapter 2.3 of Instruction T.25.

By acceptance and expected implementation of the safety recommendation, it can be ensured that the companies' instructions describing the training system are in line with the current knowledge base, thus laying the foundation for providing staff with up-to-date knowledge.