



KÖZLEKEDÉSBIZTONSÁGI
SZERVEZET

TRANSPORTATION SAFETY
BUREAU

FINAL REPORT

2007-0462-5

RAILWAY INCIDENT

Kaba station,

15 December 2007

The sole objective of the technical investigation is to reveal the causes and circumstances of serious railway accidents, accidents and incidents and to initiate the necessary technical measures and make recommendations in order to prevent similar cases in the future. It is not the purpose of this activity to apportion blame or liability.

This present investigation was carried out on the basis of

- Act CLXXXIV of 2005 on the technical investigation of aviation, railway and marine accidents and incidents (hereinafter referred to as Kbv.),
- In absence of other related regulation of the Kbv., the Transportation Safety Bureau of Hungary carried out the investigation in accordance with Act CXL of 2004 on the general rules of administrative authority procedure and service,
- MET Decree 7/2006. (II. 27.) on the regulations of the technical investigation of serious railway accidents, railway accidents and incidents.
- The Kbv. and the MET Decree 7/2006. (II. 27.) jointly serve the compliance with the following EU acts:
Directive 2004/49/EC of the European Parliament and of the Council of 29 April 2004 on safety on the Community's railways and amending Council Directive 95/18/EC on the licensing of railway undertakings and Directive 2001/14/EC on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification (Railway Safety Directive)
- The competence of the Transportation Safety Bureau of Hungary is based on the Kbv. until 31st December 2006 and on Government Decree 278/2006 (XII. 23.) from 1st January 2007 respectively.

Under the aforementioned regulations

- The Transportation Safety Bureau of Hungary shall investigate serious railway accidents.
- The Transportation Safety Bureau of Hungary may investigate railway accidents and incidents which - in its judgement - would have resulted in serious accidents in other circumstances.
- The technical investigation is independent of any administrative, infringement or criminal procedures.
- This present final report shall not be binding, nor shall an appeal be lodged against it.

Incompatibility did not stand against the members of the IC. Persons participating in the technical investigation did not act as experts in other procedures concerning the same case and shall not do so in the future.

The IC shall safe keep the data having come to their knowledge in the course of the technical investigation. Furthermore, the IC shall not be obliged to make the data – regarding which the owner of the data could have refused the disclosure of the data pursuant to the relevant act – available to other authorities.

This present final report

was based on the Draft Report prepared by the IC and accepted by the Director-General of TSB. The Draft Report was sent to the relevant parties - defined by law - for reflections. At the same time, the relevant parties and organisations were also informed and invited to the closing discussion of the Draft Report.

The following organisations were represented at the closing discussion which was held on 5th August 2008:

- National Transport Authority,
- MÁV Zrt.
- CER Zrt.

Abbreviations

MET	Ministry of Economy and Transport
TSB	Transportation Safety Bureau
Kbvt.	Act CLXXXIV of 2005 on the technical investigation of aviation, railway and marine accidents and incidents
MÁV Zrt.	Hungarian State Railways Plc. (Magyar Államvasutak Zártkörűen működő Részvénytársaság)
IC	Investigating Committee

SUMMARY

Type of occurrence	railway incident
Character	Injury to persons (electric shock)
Time of occurrence	15 December 2007, presumably between 14 hours 30 minutes and 15 hours 30 minutes
Location of occurrence	station, track XII
Type of railway system	national
Type of movement	n. a.
Fatalities/injuries	1 seriously injured person
Infrastructure manager	MÁV Zrt.
Extent of damage	--
Registration number of the involved train(s)	--
Operator	--
State of Registry	Hungary

Location of the occurrence

Main line no.100 Nyíregyháza – Budapest, track XII. of Kaba station

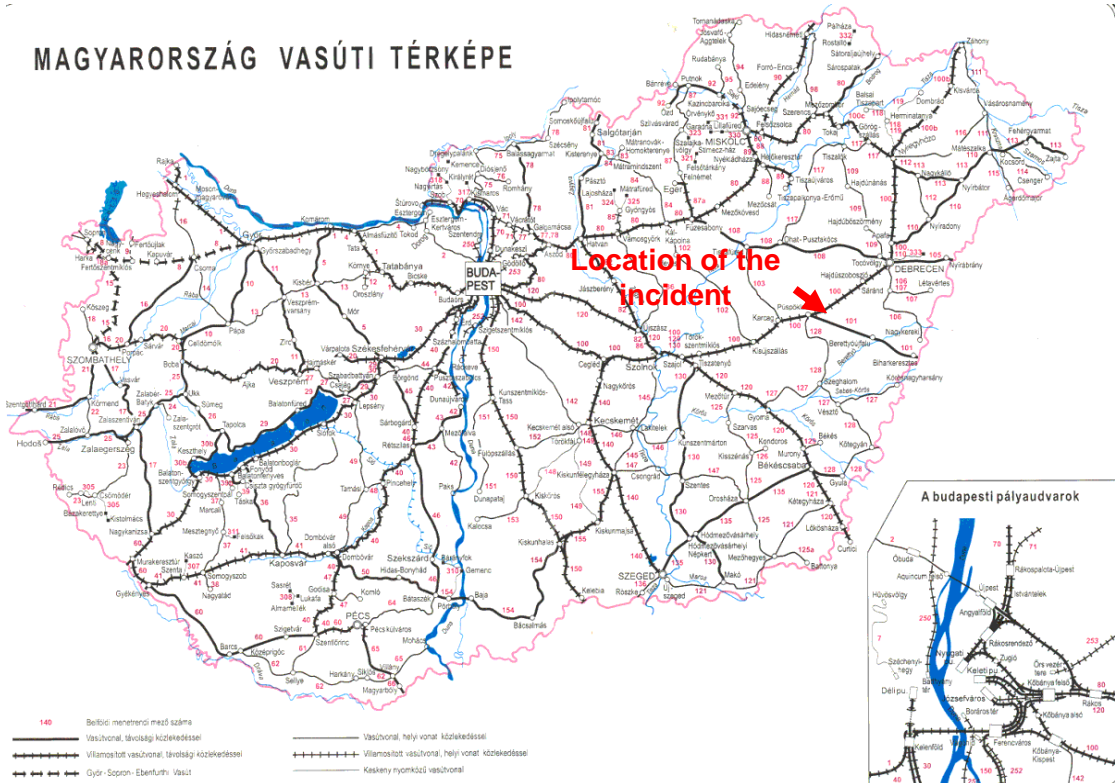


Figure 1: The location of the incident on the railway map of Hungary

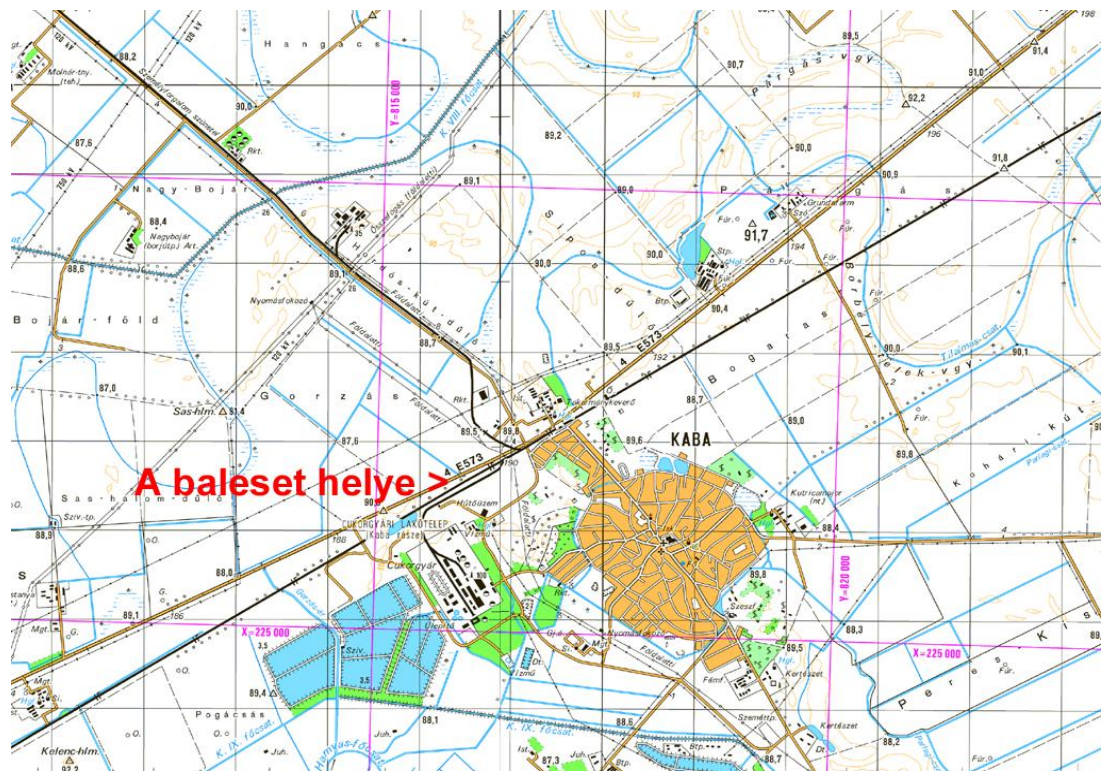


Figure 2: The location of the incident

Reports and notifications

The head of traffic operations control of MÁV Zrt. reported the occurrence to the TSB duty services at 17 hours 55 minutes on 15th December 2007.

The dispatcher of TSB reported the occurrence to TSB's head of department on duty at 17 hours 55 minutes on 15th December 2007, who decided that the immediate field investigation was not necessary.

The appointment of the Investigating Committee

Having evaluated the data and the circumstances, the Director-General of TSB appointed the following Investigating Committee (hereinafter referred to as IC) to investigate the railway incident:

Investigator-in-charge	Zita Bélecski	accident investigator
Member of the IC	András Mihály	accident investigator

Overview of the course of the occurrence

- The IC conducted a site survey on 23rd January 2008.
- The IC requested the necessary documents from the competent Regional Centre of MÁV Zrt. Infrastructure Management.

1. Factual information

1.1. Course of the event

Presumably between 14 hours 30 minutes and 15 hours 30 minutes on 15th December 2007, two children climbed up on top of the Zaes tank wagon (registration no. 31 55 788 7182 - 6) stored on track XII of the private-sidings at Kaba station. One of the children suffered an electric shock.

The child suffered serious, life-threatening injuries and was taken to hospital by an ambulance helicopter. The other uninjured child was taken home by the ambulance.

The IC conducted a field investigation on 23rd January 2008 in course of which it surveyed the site and the surroundings of the incident as well as collecting information on the operation of the station and of how the wagons are stored at the station.

1.2. Injuries to persons

Injuries	Staff	Passengers	Other persons
Fatal	-	-	-
Serious	-	-	1
Minor	-	-	-

1.3. Damage to railway vehicles

No railway vehicles were damaged in the course of the railway incident.



Figure 4: The wagon involved in the incident

1.4. Damage to infrastructure

The infrastructure was not damaged in the course of the incident.

1.5. Personnel information

Railway staff was not involved in the course of the incident.

1.6. Train information

Trains were not involved in the course of the incident.

1.7. Meteorological information

The weather conditions did not have an effect on the occurrence of the incident, therefore their detailed description is not required.

1.8. Description of rail track and signal box

The rail track and the operation of the signal box did not have an effect on the occurrence of the incident, therefore their detailed description is not required.

1.9. Communications

Communications devices did not have an effect on the occurrence of the incident, therefore their detailed description is not required.

1.10. Station information

Track XII. Of Kaba station is used to store freight wagons permanently. This track is not physically closed from unauthorised personnel.



Figure 3: The site of the incident

1.11. Tests and research

There was no need to conduct tests and research..

1.12. Additional information

A similar incident happened on 23rd March 2008 at Sajószentpéter station.

The summary of the occurrence:

At 13 hours 05 minutes on 23rd March 2008, wagon no. 33 87 787 9624-7 arrived with train no. 53422 and was forwarded at 22 hours 40 minutes with train no. 54810. In the meantime, the wagon was standing on arrival siding VI. This siding is not visible from the traffic office and is not closed off from unauthorised personnel. At 17 hours 20 minutes on 23rd March 2008, a sixteen-year-old child climbed up on wagon no. 33 87 787 9624-7 and suffered an electric shock (by being too close to the overhead contact line).

A similar incident happened on 14th April 2008 at Diósgyőr-Vasgyár station. The summary of the occurrence:

At 16 hours 21 minutes on 14th April 2008, two people climbed up on top of a wagon stored permanently on track IV of Diósgyőr-Vasgyár station. Both persons suffered electric shock. One of them was taken to hospital with minor, the other with serious injuries.

According to information requested via telephone, track IV of Diósgyőr-Vasgyár station is fenced off on the side of the factory, however, it is open - not closed from unauthorised personnel - on the other side. There was no railway staff present at the station at the time of the occurrence.

2. Analysis

It was established in the course of the investigation that the wagons permanently stored on track XII of Kaba station are out of use. The wagons on this track are only moved (by electric engines) once or twice a year.

According to information received from Regional Centre of MÁV Zrt. Infrastructure Management, the wagon involved in the incident had been stored permanently on track XII of Kaba station for five years.

Wagons stored permanently at the station are not closed off from unauthorised personnel.

3. Conclusions

According to the above, it can be stated that on tracks where wagons are stored permanently, there is no need to keep the overhead contact lines under voltage as it is an additional source of danger. The danger is increased by the fact that the stored wagons are not closed off, and therefore unauthorised personnel - children among them - can climb up on them unhindered.

4. Safety recommendations

BA2007-462-5-01: In order to reduce the number of accidents in which the involved persons suffer electric shock as a result of climbing up on permanently stored wagons, the IC recommends MÁV Zrt. that these wagons should be stored on tracks without overhead contact lines or the contact lines should be off voltage. The wagons should also be kept at physically fenced off areas.

BA2007-462-5-02: In order to reduce the number of accidents in which the involved persons suffer electric shock as a result of climbing up on permanently stored wagons, the IC recommends the National Committee for Accident Prevention that they should include the source of dangers of railway transport (e.g. possibilities of suffering electric shock, jumping on and off moving railway vehicles, dangers of crossing railway lines, etc.) in their curriculum within the framework of their educational activities.

4.1 Measures taken with regards to the issued safety recommendations

Safety recommendation no. BA2007-462-5-01: No measures have been taken.

Safety recommendation no. BA2007-462-5-02: No measures have been taken.

4.2 Observations and reflections on the issued safety recommendations

MÁV Zrt. sent the following reflections:

Safety recommendation no. BA2007-462-5-01:

- MÁV Zrt. will take the necessary measures in order to draw the attention of unauthorised personnel on the premises of MÁV Zrt. to the danger of high voltage. "Danger! High voltage!" warning sign shall be placed on signposts, light signals and catenary supports in the vicinity of the overhead contact lines.

The IC did not find any insufficiency with regards to placing "Danger! High voltage!" warning signs, however, it established that this is not a deterring force in many cases.

- Storing wagons permanently at physically closed off areas or on tracks without overhead contact line is not possible for infrastructural reasons.

The IC, however, suggests that possibilities of storing wagons permanently at physically closed off areas should be considered.

- In general, more than one track is powered by the same electric network at stations. Therefore it is not always possible to power down the overhead contact lines as the construction of the network does not allow this, i.e. if one contact line is powered down, then other tracks are also off power.

The viewpoint of the IC with regards to powering down the overhead contact line over tracks used for storing wagons is that they shall be powered down where feasible, and local regulations shall be made accordingly. At stations where tracks are used to store wagons

permanently (e.g. Kaba station), the electric network shall be modified to allow separation of contact lines over individual tracks.

According to information obtained by the IC, the construction of the above solution would cost one to seven million HUF depending on local conditions.

- Powering down overhead contact lines is not feasible for property protection considerations.

The IC could not accept this rationale, as keeping the overhead contact lines under voltage may lead to life-threatening injuries as well as criminal acts under certain circumstances. Therefore, if and when contact lines are kept under voltage for the above reason, this shall be terminated in due course.

At the closing discussion, the representative of MÁV Zrt. made a promise to examine the possibilities of storing wagons on tracks without overhead contact lines or those at closed off areas. Nevertheless, the representative of MÁV Zrt. thought that the modification of the electric network to allow separation of contact lines over individual tracks would not be an adequate solution.

MÁV Zrt. agreed with safety recommendation no. BA2007-0462-5-02.

The **National Committee for Accident Prevention** did not make any reflections regarding the Draft Report.

Budapest, 7th August 2008

Zita Béleczi
Investigator-in-charge

András Mihály
Member of IC