

THE RISK FACTORS IN RAIL TRAFFIC ACCIDENTS. CASE REPORTS.

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Abstract:

An aircraft accident produces, besides the important loss of human beings and the consequences resulted including the material damages, a powerful reaction of public opinion, which is sustained by media. An immediate, efficient and procedural intervention of all the institutions, agencies and persons involved in a case like this, is a sine qua non task of a correct judicial finality. In this paper, the authors will present rail traffic accidents in Bihor County, produced in the period 2010-2011, accidents resulting in the death of the victims involved. As a result of the research on crime scene, in conjunction with the results of the autopsy and complementary examinations it was established the cause of death, estimation of date of death and the corpses have been identified.

Keywords: rail traffic accident, forensic identification.

INTRODUCTION

Travelling by air has seen a significant improvement in the past few years, generated mainly by a human being's need to maximize their usage of time.

A railway accident is an accident that affects a train while it is in motion, due to either external or internal circumstances.

The main factors that contribute to railway accidents can be grouped into the following categories: the human factor, the environmental factor, the infrastructure factor and terrain.

The most frequent ways in which railway accidents are presented or produced can be:

- frontal collision between two trains, generated mostly by human error (nowadays there are some implemented security systems that prevent frontal collisions)
- collisions between two trains, one stationary and the other one rear-ending
- lateral collisions produced at railway junctions
- impossibility of activating the brakes due to different substances or climatic conditions or both
- risks relating to functional materials: railway breaks, brake system failures, component breaks, etc; after 1994, the alarm signal was mostly replaced by the interfonic alarm system, which does not halt the train and warns the conductor

- risk relating to materials: old materials
- risks relating to infrastructure: bridge or viaduct demolition, tunnel obstructions, significant railway damage or rupture
- human factor: not respecting signals, high speeds (which can be controlled by imposing low speed zones), conductor errors
- risks relating to external factors: criminal attacks, obstacles in the way, etc.
- risk of derailing, which can be on purpose but is mostly caused by one of the above factors.

In regards to possible lesion-producing mechanisms during a railway incident, we can mention the following:

-injury by contact with objects located inside train compartments, followed by falling;

-compressing – due to the train being overly crowded;

-travellers falling outside the train carriages onto hard surfaces during train movement, with lesions being of drastic severity.

Preventing railway accidents: besides the usual prevention methods represented by safely organizing traffic, speed limitations, etc., trains benefit from passive security methods. The technical measures implemented in passive security are represented by “the dead man’s pedal”, which is basically the actioning of a command at regular intervals, otherwise the train is automatically halted, conceiving the “articulations” of train carriages and weight repartition (so that the center of gravity is as low as possible), preventing deformity and improving shock absorption in case of collision, etc.

The role of a coroner:

-participates, along with the criminalistics department at examining the accident site and removing the bodies or remains;

-does an autopsy and other types of medical evaluations necessary to establishing the way of death, the causes as well as mentioning the causality rapport between the injuries suffered and the cause of death;

-participates in activities of identifying the victim through medical methods such as DNA matching, sex and age determination, etc.

CASE PRESENTATIONS

First case: Through data obtained from criminal prosecution institutions we can observe that J.I., aged 26, was found deceased on the 23rd of October 2010 near the Oradea West train station at kilometre 116+9”. Data obtained through investigation revealed the deceased left a goodbye letter to his family, motivating his decision to take his own life.

Autopsy conclusions:

- 1) The death of J.I. was violent.
- 2) Death was due to severe haemorrhage by sectioning blood vessels in the neck.
- 3) The lesions were received following a railway accident through cuts from the train wheels.
- 4) The alcohol levels of the victim at the time of death was 0.
- 5) Death dated on the 23rd of October 2010.



Foto 13-14- detaliile locurilor unde se evidențiază prezența fragmentelor de substanță organică (indicate prin jetoanele 0, 1).



Foto 15



Foto 16



Foto 17



Foto 18

Foto 15-18- locul în care a fost găsit capul cadavrului(marcat prin jetonul 2) și detaliile poziției în care a fost găsit.

Chimist
Rohin

Fig. 1. Research on site

Second case: Through data obtained from criminal prosecution institutions we can observe that on the 1st of August 2010, around 4:30 AM, G.J., an inhabitant of Valea lui Mihai, was mortally wounded by a train at kilometre 724+300, between Valea lui Mihai and Curtuiușeni.



Fig.2. Body aspect - tattoos and tongue pierced

Autopsy conclusions:

- 1) The death of G.J. was violent.
- 2) Death was due to crushing of the cranial cavity and it's contents.
- 3) Death dated on the 1'st of August 2010.
- 4) Lesions were obtained through hitting and severing the head by a train wheel during a railway accident.
- 5) The alcohol levels of the victim at the time of death was 1,95g/1000.

CONCLUSIONS

- Travelling by train is the safest method of transport currently available, with the majority of risk factors being related to the human factor;
- Relating to injury-producing mechanisms, these were observed almost always as hitting and sectioning by the train wheel during a railway accident.
- The autopsy is a must in case of a fatality due to a railway accident, as it has the role of determining the cause of death, identifying the victims, identifying the way death occurred, a toxicological examination, health state of the victim, etc.
- In the two presented cases, the activity of the coroner along with the examination of the accident site lead to the identification of the victims, the causes of the accident and the cause and time of death.
- The identification method used was the visual one, through which a family member identified the body (with some obstruction in the case of the decapitated corpse), and recognized particular details about the deceased such as clothing, descriptive things such as tattoos or piercings as well as personal objects found at the scene such as telephones, wallets, etc.

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