

Case study: A few letters on a corn stalk leaf led to a rapist and murderer^{*}

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Abstract

The article shows a case study of the rape and murder of an 18-year-old girl. The perpetrator sexually assaulted the victim in his car, which he parked in a cornfield, and then set her on fire. One of the most important pieces of evidence in that case was a reflection of damaged relief letters from the sidewall of a car tire, near the tread, pressed against a corn stalk leaf – the size of the imprint was 1×0.5 cm. The article describes the procedure of traceological expertise and concludes that analyzing the imprint in the discussed case was based on the same principles as the procedure of identifying a trace of an imprint made by a stamp on a piece of paper.

Keywords: traceological expertise, damaged relief letters of the car tire, reflection of letters on a corn stalk leaf.

^{*} The case was taken from the archives of the forensic traceology expert Miroslav Busarčević.

1. Short chronology of the event

The event took place on 2 July 1996.¹ It was a warm, bright night, when an 18-year-old girl named Jelena Dordević was waiting for a bus at a bus stop. A driver stopped his car and offered her a ride home, which she accepted.

During the ride, the driver suddenly took a turn off the main road into a path leading through corn fields. He stopped at the edge of the field, running over several corn stalks, and attacked the girl in the car. The perpetrator beat the victim, forced her to strip under the threat of a gun, then raped her. After this act, he followed the dirt road further until reaching a remote location near a village cemetery, at which point he dragged the naked girl out of his car and beat her again, this time also striking her blows on the head with his gun. When the victim fell, he soaked her in petrol and set her on fire. Then he fled the scene, believing her to be dead.

Despite the severe burns and other major injuries to her body, Jelena managed to get to the main road – there, she was found and transported to hospital. The victim was conscious and able to communicate in spite of her condition – she described the details of the event to the police twice, giving them the approximate location of the crime scene between two villages (covering about 12 kilometers) as well as describing the perpetrator – as it turned out, inaccurately.

Five days later, she died due to her severe medical condition. 80% of her skin had burnt and she had visible injuries on her head caused by 22 blows inflicted by a blunt object.

Searching for a possible crime scene, the police discovered the location where the attempted murder occurred. Some material evidence was found (e.g. the victim's hair), but it was not sufficient to find the perpetrator.

¹ “Oglasio se najbrutalniji ubica u Srbiji: Silovao je i zapalio devojk (18), a sada se paraćinski monsturn posle 22 godine robije obratio javnosti! Pogledajte njegovo pismo”, *Kurir*, 6.12.2018, <https://tinyurl.com/b774uy2j>; Jelenu silovao, pretukao pa zapalio živu! Srbija zgrozio zločin Paraćinskog monstruma – on se obratio javnosti”, *Srbija Danas*, 23.06.2022, <https://www.sd.rs/vesti/hronika/jelena-djordjevic-mladja-milovanovic-silov-anje-ubistvo-paracin-2022-06-05/>; M.Ž. Lazić, “Stvarnost gora od horor filma: Devojka u opekotinama nađena na auto-putu 1996”, *Nova.rs*, 7.09.2022, <https://nova.rs/vesti/hronika/stvarnost-gora-od-horor-filma-devojka-u-opekotinama-nadjena-na-auto-putu-1996/>.



Photo 1. The crime scene where the girl was beaten and set on fire



Photo 2. The crime scene where the driver pulled his car over and raped the girl

The following day, the police were examining the dirt path leading from the main road to the cemetery and found the place with tire marks entering the cornfield. They observed several corn stalks which had been

run over – the assumption was that the perpetrator had parked the car there and raped the girl inside. However, they did not find any traces or evidence to confirm that.

Four days after the event, the CSI team inspected the second crime scene again, refusing to accept the lack of evidence. This time, the state of the location was different – it had been raining the previous night and the corn stalks, which were previously on the ground, rose.



Photo 3. Broken stalks of corn which rose after the rain

After repeated examination, the CSI team found a trace on one of the corn leaves, which turned out to be a small imprint of Latin alphabet letters. The size of the imprint was 1×0.5 cm!

2. The mechanism of imprints on corn stalk leaves

The imprint was made when the relief letters on the sidewall of a tire, near the tread, pressed a leaf on one of the corn stalks. This led to the rupture of cell walls within the leaf and caused necrosis on its surface, creating an imprint of letters from the tire's sidewall. The necrosis was a slow process, so the imprint was not immediately visible, appearing days after it had been made.

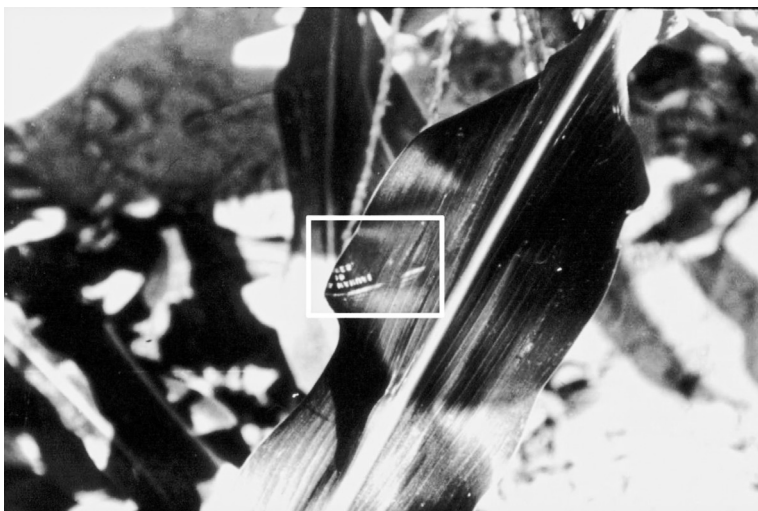


Photo 4. The text from a car tire reflected on a corn stand



Photo 5. A closer look at the reflected letters

3. Information in the media helped find a suspect

When the news about the incident appeared in the media, a man called the police and explained that his girlfriend had been attacked the same way the year before. While she had been waiting at the same bus stop, a man in a car had stopped next to her and offered to drive her home. She had refused, after which he had gotten out of the car and tried to force her in. However, she had started screaming and calling for help, scaring away the driver who had then jumped into his car and left.

The man gave the police information about the perpetrator. He stated that the incident had not been reported, but he had found the man and physically assaulted him. Police officers took the suspect, Mlada Milovanović (a Faculty of Law graduate), into custody and confiscated his car to conduct a forensic examination. On her deathbed, the victim recognized the suspect in a photo and identified him as the perpetrator of this cruel crime. However, he did not confess.



Photo 6. The car in which the rape was performed.
The rear right wheel left an identification mark

4. Comparative expert analysis of the text on the corn stalk leaf significantly contributed to solving the case

Miroslav Busarčević, a forensic expert and one of the authors of this paper, was summoned from the National Forensic Centre of the Ministry of Internal Affairs of the Republic of Serbia. He conducted a detailed forensic examination of the suspect's car and determined that the letter imprint on the corn stalk leaf was made by the left rear wheel of the confiscated car.

During his analysis, Busarčević made several precise imprints of both relief texts from the sidewalls of the tire, using black paint on a white sheet of paper. Some of the letters in both relief texts were damaged and that was reflected in all the imprints on the paper.

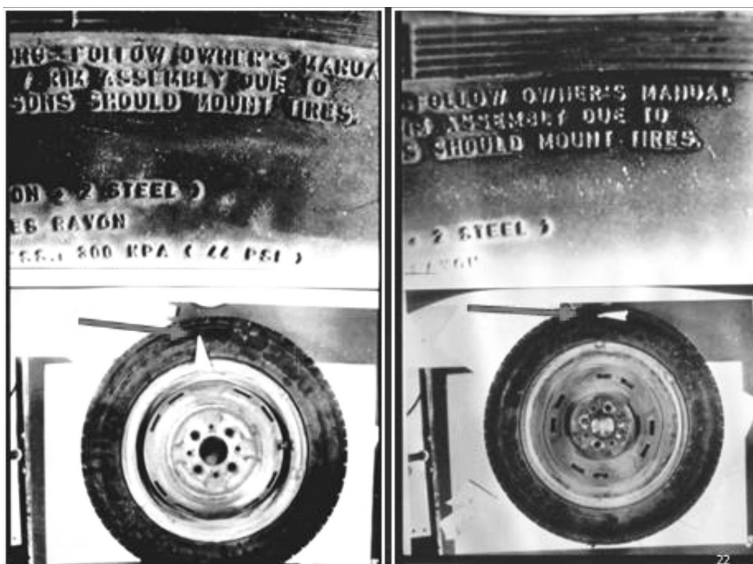


Photo 7. In the expert examination process, the print of the letters from the car tire was transferred to a paper sheet

The damage of the relief letters on both sidewalls of the car tire (seen in the imprints on the paper) is of the same identification importance as the damage of relief letters on a rubber stamp.

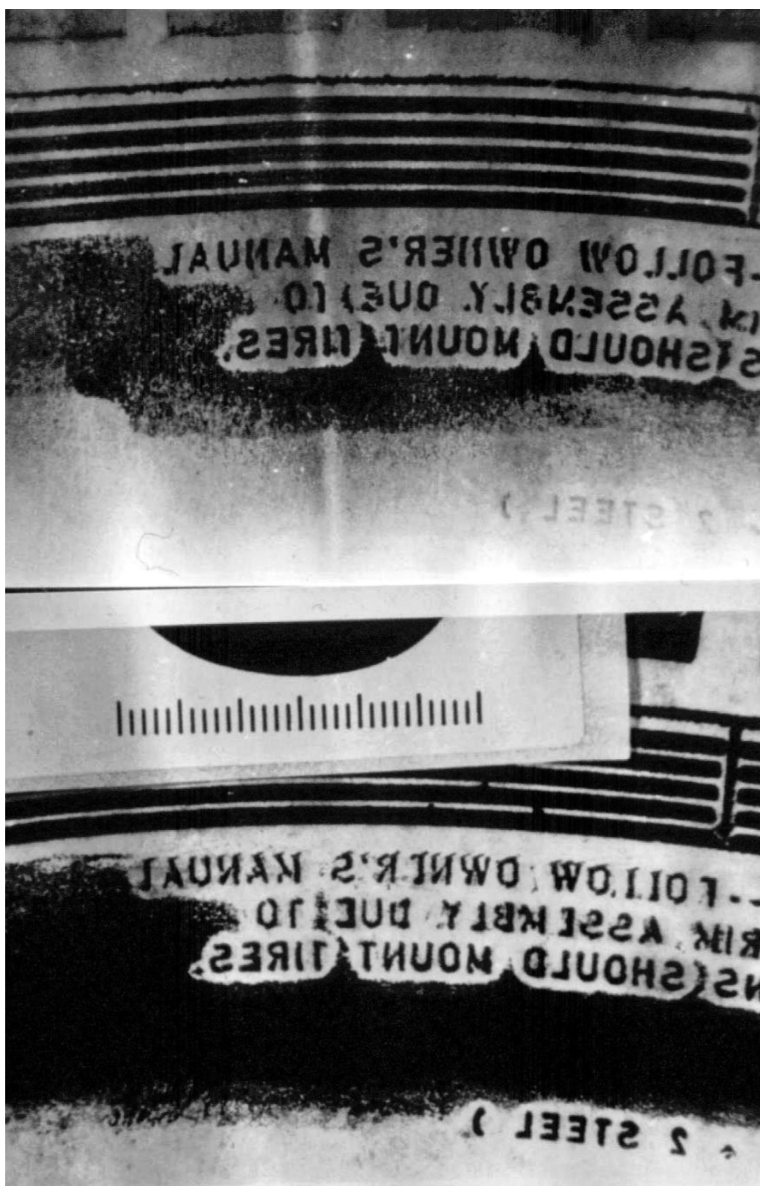


Photo 8. A closer view of the reflected letters



Photo 9. Comparison of the letters from the car tire reflected on the paper sheet and on the corn leaf



Photo 10. Individual characteristics of the rubber letters were reflected on the paper sheet and the corn leaf

Using comparative analysis, Busarčević determined that – judging by the damage – the Latin alphabet letters from the upper two rows of the relief text on the outer sidewall of the car tire are a complete match to those found on the corn stalk leaf.

Even though it was placed on a corn stalk leaf, this trace, with the size of only 1×0.5 cm, is analogous to imprints of relief letters of a rubber stamp on a piece of paper. For that reason, the procedure of identifying the car tire which made the imprint is based on the same principles as one regarding a trace of an imprint made by a stamp on a piece of paper.²

5. The court of law accepted the expert's analysis

The accused Mladja Milovanović was sentenced to death. During the second-instance proceeding, the penalty was reduced to 40 years of prison – a sentence which he is still serving.

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² S. Bell, *Forensic Science: An Introduction to Scientific and Investigative Techniques*, Boca Raton, FL 2019; *Handbook of Forensic Science*, eds. J. Fraser, R. Williams, London 2013; H.C. Lee, T. Palmbach, M.T. Miller, *Henry Lee's Crime Scene Handbook*, Amsterdam 2001.