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Administration and Interpretation of Evidence in Road Accident Cases

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Abstract: In this paper, we carefully analyse the process of examining suspected vehicles and the necessary steps to follow in order to determine whether or not they were involved in the road accident with an unknown perpetrator. This meticulous examination, which involves both visual inspection and technical analysis, is essential in establishing the connections between vehicles and the accident.

The examination of suspected vehicles is an important step in the investigation of road accidents with unknown perpetrators. This process involves a series of meticulously coordinated activities to determine whether or not a vehicle has been involved in an accident.

Investigation specialists begin by identifying suspected vehicles. This can be done based on witness statements, surveillance camera footage, or other evidence collected from the accident scene.

Once identified, suspicious vehicles are subjected to a detailed examination. This includes inspecting the exterior to identify impact marks, scratches, paint marks, or other signs of collision (Fierbinteanu, 2013, p. 72).

Forensic specialists carefully examine vehicles to discover and collect evidence, such as glass fragments or fibres, which can be compared to those found at the scene of the accident.

A thorough examination of tyre tracks is carried out to determine if they match those at the scene of the accident. This analysis can provide strong clues regarding the vehicle's involvement.

The investigation team also checks the vehicle's technical condition. Technical defects or damage may be relevant to understanding how the vehicle was involved in the accident.

The vehicle's electronic systems, such as car computer recordings or GPS data, are examined to reconstruct the vehicle's route before the accident.

Examination of the vehicle's interior is also important. This may reveal biological evidence or other elements that could indicate the presence of a victim or the driver at the time of the accident.

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The team analyses the vehicle's history, including service and repair records, to determine whether the vehicle has undergone recent repairs that could be linked to the accident.

Technical expertise is required to assess the vehicle's safety systems, such as airbags, and to determine whether they were activated at the time of an impact.

Interrogating the owner or driver of the suspect vehicle becomes a key step in the investigation. During these interrogations, investigators seek to obtain information about the vehicle's location and the driver's activities at the time of the accident, as well as any details that could confirm or deny involvement in the accident.

Collaboration with insurance agencies is also relevant. They may provide information about recent claims that could indicate repairs carried out after an unreported accident.

If discrepancies or inconsistencies are identified in the driver's statements or in the data collected, they are subject to further investigation. This may include verifying alibis or confronting them with contradictory evidence (Fierbinteanu, 2013, p. 73).

Expertise in the field of auto mechanics is often sought to assess vehicle damage and determine whether it corresponds to the type and severity of the accident under investigation.

Comparative analysis of evidence collected from suspect vehicles and the accident scene is essential. This involves comparing fibres, paint, glass, and other materials to establish direct links between the vehicle and the accident (Păduraru, 2017, p. 99).

All data and information obtained from the examination are compiled into a detailed report. This report includes the findings of the investigation and any recommendations regarding the vehicle's involvement or non-involvement in the accident.

Investigating such incidents requires a meticulous approach to examining suspect vehicles and determining the necessary steps to establish whether or not they were involved in the road accident with an unknown perpetrator. This thorough examination, which involves both visual inspection and technical analysis, is crucial in establishing links between the vehicles and the accident. Using this fundamental information, we will expand the scope of the investigation by exploring technical and forensic expertise.

In the following paragraphs, we will provide a detailed overview of the various types of technical and judicial expertise that are essential in the investigation of road accidents. We will emphasise the importance of these areas of expertise in establishing links between suspect vehicles and the accident itself.

One of the key aspects we will address is the expertise of biological traces and its objectives. This includes the meticulous examination of any biological traces found at the accident scene, such as blood, tissues, or other biological evidence that may provide clues about the individuals involved or the dynamics of the road traffic incident.

Through this detailed approach, we will highlight the vital role of expertise in bringing the truth to light in road accident cases, thus contributing to the process of elucidating the case and establishing responsibilities. These areas of expertise, both technical and judicial, form an integral part of the investigation, allowing for a deep understanding and a precise analysis of the circumstances of each case.

In the context of serious road accidents, biological trace expertise plays a crucial role in elucidating the circumstances of the accident. This expertise involves the collection, analysis, and interpretation of biological evidence found at the accident scene.

Biological traces, such as blood, saliva, or other bodily fluids, are carefully collected from the accident scene. This activity must be carried out with caution to avoid contaminating the evidence.

DNA profiling from biological evidence analysis is an important part of the investigation. It can identify the victims or drivers involved in the accident, thus providing valuable information about the individuals present at the scene of the event (Ciobanu, 2022, p. 183).

Biological trace expertise can also provide clues about the nature of the injuries sustained by the victims. Analysis of these samples can indicate, for instance, whether the victims were inside or outside the vehicle at the time of impact.

In hit-and-run accident cases, biological expertise can be used to ‘link’ a suspect to the accident scene. This can be crucial in establishing criminal responsibility.

The investigative team employs advanced technologies to analyse biological evidence. These technologies allow for detailed DNA analysis and can detect even the smallest amounts of biological material.

Comparing biological evidence found at the accident scene with samples from potential suspects or victims is an essential part of the process. This comparison can confirm or disprove a person’s connection to the accident.

Biological trace expertise is also used to investigate possible offences associated with the accident, such as driving under the influence of alcohol or drugs. Biological evidence can provide conclusive evidence about the physical and mental state of the drivers at the time of the accident.

The objectives of this expertise include establishing the sequence of events before, during, and after the accident. This can be particularly important in cases where the circumstances of the accident are unclear or disputed (Ciobanu, 2022, p. 183).

Biological expertise can also assist in identifying victims in cases of serious accidents where the victims cannot be recognised by other means.

Biological trace analysis can also reveal information about the interactions between victims and drivers or between different drivers involved in the accident. This can be relevant in cases where there is suspicion of conflict or altercation before the accident.

Biological expertise reports are detailed documents that include the methodology, analysis results, and interpretations. These reports are essential for the judicial process and for establishing the facts in legal cases.

Biological expertise can also play a role in assessing the trauma suffered by victims. By analysing biological evidence, experts can determine the type and severity of injuries, which can be important in establishing the impact’s effects on the victims.

Furthermore, biological trace expertise can contribute to the improvement of road safety protocols. By analysing injury patterns and impact types, authorities can develop more effective strategies to prevent accidents and protect vehicle occupants.

The interaction between biological expertise and other forms of forensic analysis is also crucial. For instance, correlating biological data with information about vehicle condition and accident dynamics can provide a comprehensive overview of the event (Fierbinteanu, 2013, p. 75).

In conclusion, biological trace expertise is an essential aspect in the investigation of serious road accidents, providing critical information that contributes to understanding the events, identifying the involvement of individuals, and the judicial process. Through this expertise, a thorough understanding of the accident circumstances can be achieved, and responsibilities can be established in an objective and evidence-based manner.

In road accident investigations, chemical expertise plays a crucial role in the discovery and interpretation of evidence. This expertise is often indispensable in providing clarity in complex cases where physical evidence may be subtle or even altered by external factors. One of the primary objectives of chemical expertise in the context of road accidents is the identification of substances present at the scene. This can include anything from traces of fuels, oils, and other vehicle fluids to substances related to passengers or pedestrians, such as alcohol or other toxins.

These analyses can provide highly significant clues about the circumstances of the accident. For instance, the presence of alcohol in samples taken from a driver may suggest a possible cause of the accident. Additionally, chemical analysis of traces on the road can indicate the direction of travel of the vehicles and the point of impact, essential information for reconstructing events. Chemical expertise also contributes to identifying the sources of fire or explosion that might be associated with the accident. Detecting accelerants or other chemical substances can help determine whether a fire was an accidental or intentional result of the collision.

Furthermore, chemical analysis is crucial in cases where evidence is suspected of being tampered with or falsified. Such situations may arise, for instance, when a vehicle is moved or modified after the accident to conceal certain evidence. Expertise can reveal such manipulations by detecting inconsistencies between the state of the evidence and the statements of witnesses or suspects. This is essential for maintaining the integrity of the investigation process and ensuring a correct interpretation of the evidence.

Another important aspect of chemical expertise is the analysis of organic and inorganic materials found at the accident scene. This may include the analysis of fabrics, paints, and other materials that can be transferred between vehicles and victims during the collision. Comparing these materials can be used to establish contact between a vehicle and a victim or between two vehicles involved in the accident.

Chemical expertise can also play a role in assessing the technical condition of the vehicles involved. Analysis of fluids and other substances can provide clues about the vehicle's operating condition before the accident, such as possible brake system malfunctions or other mechanical problems.

In hit-and-run accidents, chemical expertise can be essential in identifying the vehicle involved. By analysing traces left at the accident scene, such as paint or material fragments, specialists can help identify the model and even the specific vehicle involved.

The expertise of objects and components of a motor vehicle involved in a road accident is a crucial process in the investigation of serious road accidents, especially when the perpetrator is unknown. This expertise involves meticulous analysis of all parts and objects recovered from the accident scene to identify any clues that can "link" a vehicle or a suspect to the event.

The first step in this process is the collection and cataloguing of each piece from the accident scene. This may include vehicle bodywork fragments, paint marks, pieces of glass or plastic, lighting or braking

system components, and any other objects that may be relevant. Each object is photographed, labelled, and recorded in a special register to ensure rigorous tracking.

After the evidence has been collected from the scene of the road incident, a meticulous examination of it follows. Experts will look for distinctive marks, such as serial numbers, specific brands, or other unique characteristics that can help identify the vehicle involved. For instance, a piece of bodywork with a specific serial number can indicate the make and model of the vehicle (Manolache, 2020, p. 125).

Paint trace analysis is another crucial aspect of this expertise. By comparing the chemical composition and colour of the paint on the recovered fragments with existing databases, experts can identify the exact type of paint and, implicitly, the vehicles that use that paint.

In addition to physical analysis, the expertise may also include technical examinations of components, such as the braking or steering system. This is important to determine whether a technical defect contributed to the accident.

A crucial component is the analysis of the impact and deformation pattern of the recovered fragments. This can provide clues about the direction of impact, the vehicle's speed, and even the angle of collision. This information can be essential in reconstructing the road accident scenario.

The expertise may also include the analysis of biological traces that may be found on the recovered objects. For instance, blood or other biological fluids can be tested for DNA, which can aid in identifying victims or suspects.

Another important aspect is collaboration with vehicle manufacturers. They can often provide highly significant information regarding the technical specifications of components, thus facilitating the rapid identification of the vehicle involved (Medeanu, 2009, p. 69).

In cases where multiple vehicles are involved, object expertise becomes even more complex. Experts must differentiate and associate each object with the corresponding vehicle, which poses a challenge in pile-up situations.

The expertise also includes the analysis of any recovered electronic systems, such as engine control units or dashboard recordings. These can provide important data about the vehicle's condition and the driver's actions in the moments leading up to the accident.

To ensure a complete and accurate analysis, object and component expertise is carried out in collaboration with other investigative teams, including accident reconstruction specialists and forensic experts.

The results of this expertise are essential in constructing a clear picture of events and can be decisive in determining responsibilities and holding those involved accountable.

A psychological expertise is often necessary, especially in cases where the driver's mental state is a potential factor in causing the road accident. Psychologists can assess stress, fatigue, the influence of psychoactive substances, or other psychological conditions that could affect driving ability. This analysis can provide valuable clues about the driver's motivation and behaviour before the accident.

Ergonomic expertise is another important component, focusing on the interaction between the driver and the vehicle. This includes analysing the driver's position, the accessibility and functionality of the vehicle's controls, and any factors that could influence the driver's ability to operate the vehicle safely. For instance, an ergonomic analysis can determine whether fatigue, poor posture, or difficulties in using the vehicle's equipment played a role in the accident (Manolache, 2020, p. 127).

Another important expertise is the analysis of environmental and infrastructural factors. This involves examining the road conditions, including the design, surface condition, signage, and lighting. This expertise can reveal deficiencies in road infrastructure, such as unclear signs, inadequate lighting, or road surface damage, which can contribute to accidents.

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