

Research on the Countermeasures of the Scene Investigation of Railway Damage Cases

Xin Cai

Railway Police College, Zhengzhou, 45000, China

caixin.rpc.edu.cn

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Abstract: In order to determine the nature and causes of railway victims and traffic accidents, this paper first describes the main issues to be solved in the two situations, as well as the main objects and contents of field visits and field investigations. This study analyzes and studies the field investigation of various specific cases, including off-line field investigation, conflict field investigation, fire field investigation and damage field inspection, which endangers the railway safety.

1. Introduction

The injured site of railway facilities and equipment is the same as the site of railway transportation safety accidents caused by railway employees' violation of regulations. From the result of the scenario, the loss phenomenon is the same. The work of gathering evidence from a specific website survey is the same. Therefore, railway damage events and major traffic accident scenes are often difficult to be identified as suspicious[1]. In this paper, the investigation and identification methods of railway damage cases and main traffic accidents are discussed as follows.

2. Main Problems to be Solved in the Field Investigation of Railway Damage Cases and Major Traffic Accidents

In order to determine the nature and causes of railway damage cases and traffic accidents, the following main problems must be solved.

2.1. In Case of Damage or Accident, Please Find the Location of Station, Vehicle and Line

The construction of railway victims and traffic accident scene needs time, station, vehicle and line location. Therefore, after receiving the report or request for rescue information, we should first understand the specific time of the accident, as well as the specific location of the station, vehicle and line. Station, station and line are especially reflected in station, station, tram travel, parking lot, line, up line, down line, etc[2]. Moreover, the running range of trams is often closely related to time. Finding the time and specific location of station, train and line can lay a foundation for determining the nature of injury events and driving accidents.

2.2. Looking for a Starting Point for a Damage or Accident Scenario

The starting point of railway damage events and the scene of traffic accidents are also known as the starting point. This is the cause of dry damage[3]. The starting point of damage situation and driving accident scene, usually with obvious characteristics of change, is also the place with the most serious driving damage. Relevant details and characteristics can be identified through careful inspection. The causes of driving injuries reflect the characteristics related to the causes of injuries or driving accidents. At the same time, the process of damage and traffic accident shows that the actual damage is the starting point of on-site inspection. Therefore, the starting point is the main part of on-site inspection of injury or driving accident.

2.3. What Signs are There Before the Traffic Accident

Generally, the damage will happen suddenly, otherwise, the damage event may be interrupted. In the case of railway traffic accidents, people on the scene may experience specific symptoms before the accident. For example, before the train carriage was involved in the fire, someone smelt the burning smell, and the bat of the cigarette was not found[4]. Before the train collided, either who changed the driving signal at will, or the driver didn't have a good rest before getting on the train. Before the tram derailment, the personnel of the public unit have received the notice of the traffic sender about the broken line, or sent out an alarm when checking the track of the vehicle. Because before the illegal parking accident, the departure signal of the train has been connected, or the baggage has not been unloaded. These signs are very important in identifying the cause of the accident. Therefore, thorough investigation, through the relevant pre accident symptoms, in order to confirm please patiently persuade the propaganda work.

2.4. Evidence of Human Injury

The main difference between railway victimization cases and traffic accident sites lies in that there are the functions of sites and facilities that manually change their functions and traces after changing their functions. For example, the fishtail splines on both sides of the rail are fixed at both ends of the rail. Transparent artifacts remain in the short distance printer[5]. At the same time, check all tool stations used to promote driving hazards. For example, tools such as crowbar for wrenches, jacks, breakdowns, and obstacles. Of course, these tools are related to the construction of railway workers. We must find out whether we can exclude them. For objects that cannot exist in the site environment, it is necessary to identify the risk of their driver source relationship. For example, matters related to gunpowder may cause

2.5. The Cause and Nature of the Accident.

Damage and major traffic accidents are totally different in nature. There are fundamental differences in criminal law and division of labor in law enforcement and jurisdiction. Therefore, in order to implement the law correctly, it is necessary to know what is necessary[6]. By solving the above problems, it is necessary to judge whether the inspected and inspected place is an accident caused by personnel injury, or an accident caused by illegal acts in train operation, or a natural disaster accident. In addition, it is also necessary to investigate the condition of locomotives, vehicles, lines and signal equipment before the events (conditions) such as general condition, technical condition and existence of abnormal conditions. Collect the employment situation of the train crew, station staff, specific location and activities of the line workers and other relevant personnel. At the same time, it is necessary to know the person who arrives at the site, the personnel activities on the site, the phenomenon occurring on the site, the course of the event, the occurrence (event) of the event, etc. What is the response strategy In addition, the cause and nature of the incident or accident, the responsibility and responsible person of the incident shall be further specified according to the site inspection.

3. Inspection Focus of Railway Damage Cases and Major Traffic Accidents

The biggest difference between the inspection on the scene of railway damage cases and major traffic accidents and the inspection on the scene of other crimes is that the criminal investigation technicians must have certain railway knowledge and master the general laws of railway transportation production.

3.1. Determination of Accident Origin

The cause of the accident is the initial starting point of the accident, which has the characteristics of causality and sudden change of the accident, with originality[7]. Accidents have only one origin. Determining the cause of the accident is of great significance to analyze and identify the root cause of the accident. The main characteristics of major driving accidents can be summarized as follows. The main cause of the driving accident is the sudden change in the accident. Where there is no sudden change is not the cause of the accident. For example, when two trains collide in front or

back, the surface form, the internal structure of the material and the state of the collision point on the corresponding line are damaged. These changes are obviously different from the normal state. The power of origin is the most concentrated, and sudden changes are the most significant. At the same time, the origin fixed the location of two train accidents. According to the train departure sequence and line signal conditions, the collision accident, accident causes and responsibilities can be determined. The cause of the major accident is at the beginning of the rapid change of the accident. Although there are sudden changes, no initial point is not the cause of the accident. For example, a short circuit is caused by the exposed internal transmission line of the tram. In the event of an accident, short-circuit fuses of multiple lines will occur, fusing joules at the curved end. However, there is only one cause of the accident. The arc is caused by the origin short circuit. The arc ignites the heat insulation layer to form a hidden flame, and gradually forms an open flame, causing the flame. Smoke area usually has obvious smoke mark, other points do not have this initial characteristic. The determination of fire point here depends on the initial characteristics of smoke trace, etc. In order to judge the causes of other major traffic accidents, the initial characteristics must be taken as an important criterion. There is a direct causal relationship between the cause of the driving accident and the result of the accident. Other aspects that are not the direct cause of the accident result are not the cause of the accident. For example, after the tram derailment accident, the tram is running[8]. Due to inertia, the tram continues to move forward, and the vehicles carried behind continue to go offline. That result is not the direct cause of the accident, not the cause of the accident. The first point of derailment is the cause of accidents like trucks climbing up the wheels. Only by finding out the cause of the accident according to the characteristics of the initial track of derailment can we correctly analyze the cause of the accident and determine the direct responsibility related to the accident.

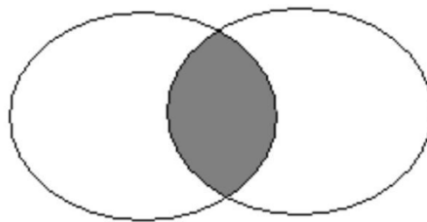


Fig.1 Schematic diagram of the relationship between crime scene and suspected crime scene

3.2. Key Points of Off-Line Field Inspection

The entry inspection of derailment accident is carried out on the basis of finding the cause and decision of derailment. Determine the starting point for the study of derailment. The location of the starting point of derailment of the rock climbing truck along the surface of the truck is determined, the damage and combination of the line, the pressure on the truck surface, the shape and length of the scratch are investigated, and the situation of the object is very few. Infer the cause of the derailment. Please confirm the route of the train after derailment. Confirm the length and damage of the train after derailment, the original fixed state of the original adjacent sleeper, and the setting damage of the line. For abnormal rail head, it is necessary to check the wear condition of rail head. When the derailment accident occurs when checking the bogie switch, it is necessary to conduct an in-depth comprehensive investigation on the wear of the truck and the driving along the truck[9]. Check the locomotive. In order to check whether the guide wheel and moving wheel of the locomotive are normal, please check the trace of the wheel and the trace of the troubleshooting device. The inspection of derailed vehicles is mainly to check whether the chassis, buffer, bogey, wheelbase, axle, axle and other technical indicators are normal. Confirm the damage of derailed vehicle. Please collect suspicious items and trace materials. Difference between railway damage event and main driving accident scene the whole situation of railway damage event and main driving accident scene is the result of car overturning, derailment, collision, fire, explosion or other, which makes driving safety threatened. In order to ensure the smooth operation of Railways and trams, the railway operation Department will dispatch rescue teams to repair the railway facilities

and equipment, railway machinery, vehicles, work, electricity, automobiles, supplies and medical treatment with obstacles. The staff / collection of the armed police and other professional departments is 0. At this point, the environment of the lanes included in the scene is very wide. These interweaving will make the scene of dynamic staff and the scene of participation more disorderly. The original damage and the scene of the accident are suspected, and the nature and cause of the incident (event) are difficult to distinguish, making the inspection of the phenomenon more difficult. In addition, it is not easy to maintain the website, and the time to check the website is very urgent. This puts forward high requirements for the crime search technicians who conduct on-the-spot inspection. In the long-term work practice of railway crime investigation technicians, there is a complete method to investigate railway victims and the scene of major traffic accidents, to understand and distinguish their nature and causes.

3.3. Access to Justice

The entry and exit inspection and inspection of railway victims shall be conducted by the Crime Investigation Department of the railway public security organ[10]. The access inspection and inspection of major railway accidents shall be carried out by the Ministry of public security of the Ministry of public security. However, due to the nature and cause of the damage and accident, it is difficult to make initial judgment, so the on-site inspection and inspection usually include the above two parts. Especially recently, the Public Security Department of the Ministry of Railways proposed that the police should cooperate with each other, adopt an overall combat policy, and put traffic in danger. If a complete inspection and inspection record is required, the commonness of inspection and inspection is self-evident. Already.

3.4. Differences Between Crime Themes

The main body of the scene of railway damage is criminals, not necessarily railway employees. In the main railway accident scene, the railway employees such as driver, guard, guard, link, rhinman are quite different.

3.5. Main Performance Differences

The formation of the scene of railway sabotage mainly depends on the criminal's subjective intention. Sometimes, of course, that's due to a slight theme. The formation of the main railway accident scene is caused by the fault of the aggressor.

4. Conclusion

In the railway damage event, due to the sudden occurrence of the event, people at that time will not appear suddenly, and they will not feel abnormal before the event. At the scene of a large railway accident, there are also machine failures. Although the party concerned felt that the accident might have happened in advance, due to his luck, he did not take effective measures. As a result, an accident occurred. In addition, the failure of the machine is a process. At the beginning of this process, some people may feel abnormal, they do not deal with it in time, leading to accidents.

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