

Impact Factor:

ISRA (India) = 6.317
ISI (Dubai, UAE) = 1.582
GIF (Australia) = 0.564
JIF = 1.500

SIS (USA) = 0.912
PIHIQ (Russia) = 3.939
ESJI (KZ) = 8.771
SJIF (Morocco) = 7.184

ICV (Poland) = 6.630
PIF (India) = 1.940
IBI (India) = 4.260
OAJI (USA) = 0.350

SOI: [1.1/TAS](#) DOI: [10.15863/TAS](#)

International Scientific Journal Theoretical & Applied Science

p-ISSN: 2308-4944 (print) e-ISSN: 2409-0085 (online)

Year: 2022 Issue: 12 Volume: 116

Published: 14.12.2022 <http://T-Science.org>

Issue

Article



Amanay Tursunbaevna Akmatova

Osh State University

Candidate of Historical Sciences,

Associate Professor of the Department of Theory of State and Law

Kyrgyz Republic, Osh

CURRENT ASPECTS OF VEHICLE COLLISION INVESTIGATION

Abstract: In the article, the author analyzes the process of collision of vehicles according to typical situations of their occurrence, on the basis of which he subdivides them into types. At the same time, this study focuses on the actions of the investigator in the investigation of each type of them. To consolidate the features of the investigation of a collision of vehicles, the author gives some examples.

Key words: vehicle, vehicle collision, vehicle investigation, collision site, rear collision, head collision, corner collision, side collision.

Language: English

Citation: Akmatova, A. T. (2022). Current aspects of vehicle collision investigation. *ISJ Theoretical & Applied Science*, 12 (116), 474-476.

Soi: <http://s-o-i.org/1.1/TAS-12-116-35> **Doi:**  <https://dx.doi.org/10.15863/TAS.2022.12.116.35>

Scopus ASCC: 3308.

Introduction

A collision of vehicles can occur in the following typical situations: rear collision - a collision with the rear of a stopped car; oncoming collision - when cars, following exactly towards each other, hit the front parts; angular collision - the impact of one car on the corner of another, when the length of the touching surfaces of cars on impact is more than 15 cm; side collision - collision of cars with the sides when the length of the touching surfaces of cars is less than 15 cm; cross collision when cars collide at right angles. Based on the damage analysis, the type of collision is determined, which indicates the relative position of the cars at the time of the collision. Before the collision, each car was moving in its own direction relative to each other [1].

After a collision, cars can move and turn into positions (in which they will be at a complete stop) that have nothing similar to their position in a collision. The position at the time of the incident indicates which car was turning in front of the other or which car really hit the other [2]. In a rear-end collision, there are the following features: after such a collision, cars can stop in a locked state if it happened in motion, or bounce off each other if one of the cars was standing; one car will have damage in the back,

the other in the front; the traces of damage on one car will coincide with the damage of the other.

An oncoming collision rarely occurs, as drivers tend to dodge an oncoming impact, but they still occur and have their own characteristics: in such collisions, cars stop at the collision site or bounce off an equal distance if their weight and speed were the same [3]; with unequal weight and speed, lighter or moving with at a lower speed, it will be thrown back from the collision site; cars do not rotate during such a collision, and the debris occupies a small area of the road. Here the main question to find out is on which side (lane) of the road the collision occurred.

The place of collision in this case is determined by the location of the cars and by the traces of wheel slip before and after impact, taking into account the listed features. Angular collision is the most common accident and has its own characteristics: in such a collision after impact, cars usually rotate, leaving tire tracks; in a collision, the left corners rotate counterclockwise and the cars bounce off each other [4]; in contact with the right corners - clockwise; the spread of damaged items from the vehicle depends on the area of contact, the mass of cars, speed and condition of the road surface. In such a collision, the investigator must find out: on which side of the centerline of the road the collision occurred, since

Impact Factor:

ISRA (India) = 6.317
ISI (Dubai, UAE) = 1.582
GIF (Australia) = 0.564
JIF = 1.500

SIS (USA) = 0.912
PIIHQ (Russia) = 3.939
ESJI (KZ) = 8.771
SJIF (Morocco) = 7.184

ICV (Poland) = 6.630
PIF (India) = 1.940
IBI (India) = 4.260
OAJI (USA) = 0.350

debris, remnants of glass, spilled oil and dirt can spread over a relatively large area, and this is another characteristic feature of an angular collision [5].

However, the location of the collision can be determined approximately if the investigator remembers that in such a collision, each car moves from the collision site to its side of the road. A side collision, like an angular one, is the most common and requires careful investigation and knowledge of the features, which include the following: in a side collision, damage to cars is usually insignificant and cars are stopped by drivers themselves; in a collision, cars do not rotate; reliable facts indicating the place of the collision are pieces of crumbled dirt (fallen off from the wings), glass fragments and tire slip marks; the nature of scratches and dents in the sides of the body, their direction may indicate the direction of cars; in such a collision, cars do not move to the opposite side of the road and the presence of both cars on one or another lane indicates that which one of them was the accident.

A cross collision is characterized by the following: braking marks will indicate the direction of movement; one car will have dents from the front, the other from the side; tire slip marks after a collision will reflect the force and speed of moving cars.

When considering this collision, the investigator needs to decide which of the collided cars drove first to the intersection. In this case, there are three following options: 1) both go to the intersection at a constant speed (without braking); 2) one goes to the intersection at a constant speed, and the other brakes; 3) both go to the intersection and brake [6].

For the first case, it is necessary to measure the distance from the place (point) of the collision to the lines limiting the intersection; this will allow determining the speed of cars in the future, based on the speed, it will be possible to determine the time it took for each car to travel from the intersection border to the collision site [7].

The time will indicate which car went to the intersection earlier and which one later. In the second case, the determination of the braking speed and its length from the intersection border to the collision site indicates who drove first to the intersection.

In the third case, when both cars were in a braked state before the collision, the length of the braking distance will indicate the speed and who was the first to enter the intersection.

Depending on the location of the road section, traffic intensity, road and weather conditions, several vehicles may participate in an accident. In such cases, one car may engage in a side or other type of collision with other cars, after which it will leave the centerline on the other side of the roadway and collide with an oncoming car. In such accidents, three or more cars may be involved in a collision at the same time. The main task in this case is the analysis of traces of sliding, dents, moving parts from one car to another

and the establishment of cars corresponding to these traces [8].

Here you need to be guided by the following. Slip marks are represented by parts of rubber left on the road as a result of tire wear and the friction of their treadmill on the road surface. These tracks, depending on the tire design, load, tread pattern, will vary both in width and in print, which will allow them to be identified with the tires of cars that were not involved in an accident.

If the tire slip marks of one car intersect the tracks of another (overlap marks), then it is necessary to carefully examine the places where the tracks intersect, which will allow the investigator to determine which slip marks appeared later, since later tracks look more clearly than those left earlier. Knowing which of the intersecting tracks appeared later and from which car, the investigator can establish the sequence of movement of cars in a collision.

Similarly, the investigator can examine the damage on the car. When several vehicles collide, there are also several collision lines – one for each pair of cars. Any later damage will be located near the early ones, while distorting the traces of early damage by deforming and moving the metal in the places of dents. The transfer of paint gives the investigator the opportunity to determine which car was involved in a particular collision. To do this, you should carefully examine the damage and scratches to determine the paint transferred from another car, make sketches of dents and scratches by measuring with a mark of the color of the detected paint transferred from another car and the location of the binding site. All this makes it possible to determine the sequence of car collisions [9].

Let's consider an example of an oncoming collision. The bodies of the preliminary investigation Ulitin N.N. was accused that on April 03, 2005, about 14 hours 15 minutes, driving a technically serviceable KAMAZ-5410 car, state number B 756 VN 16 Sh8, followed at a speed of 50 km/h from the direction of Yoshkar-Ola along the roadway of the Yoshkar-Ola highway. Volzhsk RME. On the road section between the "Volga Industrial Construction Plant" and JSC "Volga Meat Processing Plant" Ulitin N.N. I saw a Ford-Taunus car, state number 008 SV 12 shz, driven by the driver Mnatsakanyan A.K., with passengers Kulmyakov V.A., Chirkov A.S., Karpov D.A. and Martirosyan A.M., moving towards him from the direction of Volzhsk RME, at a distance of 73 m. the car. Ulitin N.N. having found an obstacle in the lane of his movement, in violation of clause 10.1. Part 2 of the Traffic Rules, "if there is a danger to traffic that the driver is able to detect, he must take possible measures to reduce the speed until his vehicle stops," grossly violating the traffic rules, he used a left-turn maneuver into the oncoming traffic lane, acting thoughtlessly, anticipating the possibility of socially dangerous actions, but without sufficient grounds for

Impact Factor:

ISRA (India)	= 6.317	SIS (USA)	= 0.912	ICV (Poland)	= 6.630
ISI (Dubai, UAE)	= 1.582	ПИИИ (Russia)	= 3.939	PIF (India)	= 1.940
GIF (Australia)	= 0.564	ESJI (KZ)	= 8.771	IBI (India)	= 4.260
JIF	= 1.500	SJIF (Morocco)	= 7.184	OAJI (USA)	= 0.350

that, he confidently counted on preventing these consequences, crossed the solid line of marking 1.1 of the Rules of the Road, which separate traffic flows of opposite directions and designates the boundaries of traffic lanes in dangerous places on roads to which entry is prohibited, grossly violating clause 9.7 of the traffic Regulations "If the carriageway is divided into lanes by marking lines, the movement of vehicles must be carried out strictly along the designated lanes", violating clause 1.3 of the traffic Regulations "Road users they must comply with the requirements of the rules, signs and markings", on the oncoming traffic lane to which the Ford car under the control of A.K. Mnatsakanyan returned at the same moment., as a result, a collision of vehicles occurred, which caused a traffic accident, during which the driver of the Ford car Mnatsakanyan A.K., the passengers of his car Chirkov A.S. and Kulmyakov V.A. died from injuries that caused serious harm to health, Martirosyan A.M. received injuries that caused serious harm to health, Karpov D.A, received injuries that caused harm to health of moderate severity.

Thus, according to the indictment, N.N. Ulitin, by his careless actions, driving a car, violating traffic rules, committed a traffic accident that caused serious harm to human health by negligence, as well as the death of two or more persons.

Thus, the court found that N.N. Ulitin, not having the technical ability to prevent a collision by emergency braking, trying to prevent a traffic accident, being in a state of extreme necessity arising from the actions of A.K. Mnatsakanyan, forcibly, violating paragraph 10.1 of the traffic regulations, began to change the direction of movement of his car with oncoming traffic for him a traffic lane, hoping that a Ford car will pass through its lane and there will be no collision. Further, the court states that Ulitin N.N. having forcibly violated the requirements of paragraph 10.1 of the traffic regulations, he could not prevent the occurrence of socially dangerous consequences in the form of the death of three people and causing serious and moderate harm to human health exceeded the limits of extreme necessity [10].

References:

1. Fedorov, A.A. (1996). Methodology for conducting certain types of investigative experiments in the investigation of road traffic accidents. Inform. *Bulletin of the SO Ministry of Internal Affairs of the Russian Federation*, No. 1 (86), pp.64-74.
2. Marshanskaya, A.K. (1980). *On the issue of establishing the fact of the movement of the vehicle at the time of the collision*. Guidelines. (pp.35-37). Tashkent.
3. Litinsky, S.A. (1980). *Analog modeling as a method of expert analysis in the study of the mechanism of accidents. Current state and ways of development of forensic and nuclear engineering expertise*. (pp.237-238). Baku: VNIISE.
4. Reshnyak, M.A. (1999). Road accident (about some shortcomings in the organization of the investigation). *magazine "Professional"*, No. 4, p.44-45.
5. Yakushev, V.I. (1981). Determination of the direction of movement and relative speeds of colliding vehicles. Criminalistics and forensic examination. *Republican intern. scientific method, collection*, Issue. No. 23, Kyiv, pp. 89-97.
6. Potashkin, D.P. (2007). *Forensic techniques: Textbook*. (p.113). Moscow: Zertsalo.
7. Yakushev, V.I. (1981). Determination of the direction of movement and relative speeds of colliding vehicles. Criminalistics and forensic examination. *Republican intern. scientific method, collection*, Issue. No. 23, Kyiv, pp. 89-97.
8. Achmiz, R.Yu. (1999). *Investigation of road traffic crimes (theoretical and tactical and methodological aspects): Abstract of the thesis*. dis. cand. legal Sciences. Volgograd.
9. Kuperman, A.I., & Mironov, Yu.V. (2005). *Road Safety: A Reference Guide*. (p.272). Moscow: Higher School.
10. (2006). *Review of the judicial practice of the cassation and supervisory instances of the Supreme Court of the Republic of Mari El for the 4th quarter of 2006*.