IMPACT ANALYSIS OF THE DAMAGE VEHICLE FINDINGS AND OPINION EXPERTS INFURNISHED TRAFFIC ACCIDENTS

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Abstract: *Comparative analysis of vehicle damage is the basic method for clarifying furnished traffic accidents. Objective of this work is the introduction of a variety of situations furnished accidents, to work expert in this and similar situations was facilitated. Precise and detailed analysis of the damage to the vehicle shows a mismatch is damage to the vehicle according to the intensity and direction of the force. This way of comparing the most effective is to identify the set of accident or attempted fraud in the field of insurance from auto-responsibility. The success of disclosure furnished accidents exclusively depends on the knowledge model occurrence of such accidents. In this paper in relation to that presents a few typical examples of traffic accidents furnished model "vehicle-to-vehicle".*

Keywords: *furnished traffic accidents, insurance fraud, damage analysis*

1. INTRODUCTION

The analysis of material evidence and the statement of the participants in a traffic accident is the basis of the analysis of the credibility of the occurrence of a traffic accident. Because of the volume and diversity of traffic accidents that occur, it is not possible to define the unique content and type of analysis that must be carried out in order to determine the credibility of the described manner of occurrence of a traffic accident. The identification of the credibility of a traffic accident is similar to the agreement of elements of the mosaic, with the elements available to the experts of the traffic engineering profession, material evidence of a traffic accident related to: vehicle damage, accidental traces, traffic situation and statements by the participants of the accident. (Cvijan and Smailović, 2012: 160).

However, the most common cases of analysis are related to the establishment of the credibility of an accident described by the participants and (or) witnesses of a traffic accident. At best, it is possible to arrive at some conclusions by a comparative analysis of only damage to the vehicle.

In some cases this will require a detailed and comparative analysis of vehicle damage, while in some traffic accidents a detailed and comparative analysis of all elements of the accident is required.
Fraud in the insurance of motor vehicles does not imply only casualties that have not been objectively incurred, but frauds also imply the presentation of damage that did not occur, could not have happened, or could not have happened in the presented accident. It is not unusual that participants in a road accident show more damage than those that happened objectively or could have happened in the traffic accident.

2. METHODOLOGY OF RESEARCH

2.1. Subject research

The subject of the research in this paper are examples of the expert assessment of traffic accidents from the old Institute at the Faculty of Traffic in Belgrade and Doboj.

2.2. The aim of the research

Examine the findings and opinions of an example of an expert in the design of traffic accidents in order to point out the facts and

procedures of adjusting traffic accidents and the application for insurance compensation.

2.3. Method of data collection

Data collection was carried out on the basis of the accompanying documents and photo documentation for the analysis of traffic accidents.

2.4. Sample research

Three characteristic examples of damaged traffic accidents with material damage were selected.

2.5. Method of research

After selecting an example according to a predefined criterion, the analysis of the selected traffic accident documentation was initiated with a focus on characteristic damages that were not incurred in the accident.

3. RESULTS OF CHARACTERISTIC DAMAGE EXAMINATION

Investigation of characteristic damage on vehicles carried out on three examples of damaged traffic accidents with material damage.

3.1. Example 1 - Damage did not occur in the traffic accident

In this example, an allegedly traffic accident with material damage took place involving two passenger cars, MERCEDES and YUGO, Figure 1.

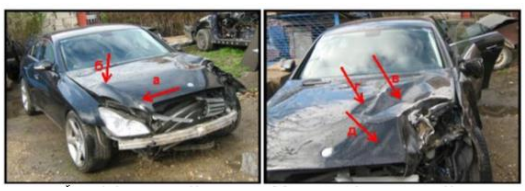

Figure 1. Width appearance of engine bonnet damage [3]

Figure 2. Engine bonnet damage display [3]

A detailed analysis of the submitted photographs from photo documentation found that the bonnet of the engine compartment MERCEDESA in the right front part was deformed by the action of a force in different directions and directions with a center of impact in several different places, figure 1. The damage to the front left part of the bonnet of the engine compartment is in the form of deformations sheet by the action of forces in different directions and directions, with a center of impact in several different places, Figure 2.

The front decorative mask MERCEDES is broken and most of the right part of the front decorative mask is missing. The front bumper's front tire is damaged by the left corner being deformed by a force acting in the direction from the front left corridor to the rear right corner of the MERCEDES and is moved upwards, while at the height of the center of the forehead part of the MERCEDES, it is deformed by the action of the force, approximately from the upper to the lower part of MERCEDES, figure 3. Damage to the engine coolant cooler and the MERCEDES air conditioner cooler is located out of its tray and are moved downwards. On the lower part of the coolant coolant radiators and the air conditioner cooling radiators, they are in the form of a deformation of the sheet by displacing it backwards by acting force in the direction from the front to the rear of the MERCEDESA, fig. 4.

Figure 3. Display of the damage of the upper left-hand cooler "connecting bracket" [3]

Figure 4. Discharge of the lower part of the engine cooling and cooler air cooler [3]

The upper left "coupling bracket" is deformed at the height of the left head by pushing it backward, towards the middle of the engine compartment MERCEDESA, by acting force in the direction from the front left corner to the rear right corner of the MERCEDES, Figure 5. Damage to the

MERCEDESA on the front left mud track like scratch marks and traces of reddish traces, Figure 6. and 7.

Figure 5. detailed damage left fender [3]
Figure 6. Only damage to the left front fender [3]

Damage to the front left door of the MERCEDES, are traces of scratch marks and traces of red-colored tracks, and are provided from the front to the rear edge of the front left door of the Mercedes, Figures 7 and 8. At the rear of the lower edge of the front left door MERCEDES damages are in the form of deformation of the sheet formed by the action of force in the direction from left to right side of the MERCEDES.

Figure 7 and Figure 8. Damage to the front left mudguard and front left door [3]

A detailed analysis of the delivered YUGA damage images resulted in damage to the rear right-hand corner of the YUGA in the form of sheet metal deformation by moving it forward and rightwardly by force acting approximately from the rear to the right side of the YUGA. The rear bumper is "deformed" by deformation in the right-hand corner and displaced rearward by force acting approximately, from the rear to the right side of the YUGA, with the impact center at about 0.3 m from the rear right edge of the YUGA (estimated on the basis photo from photo documentation). The rear bumper YUGA is deformed by being detached from the vehicle in the rear right and moved downwards. On the right side of the right YUGA bumper there are traces of scratch marks, Figure 9. In the lower half of the rear right-hand fender YUGA, and approximately at the height of the rear right-hand corner of the YUGA, there are traces of traces of black color, while in the upper half of the rear right mudguard YUGA there are traces of scratch marks. By analyzing the damage of the YUGA, the rear right-hand side glass is broken on its entire surface, Fig. 10.

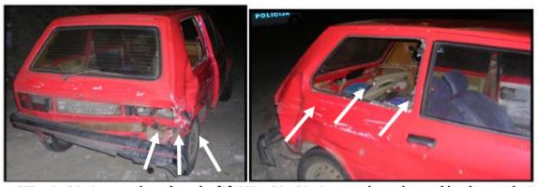

Figure 9. Rear bumper damage [3]

Figure 10. Damage to the right rear fender and side glass [3]

In this example, by analyzing the traces and damage, it can be concluded that the collisions between MERCEDES and YUGA could not be as described in the analyzed documentation. In the event that a traffic accident happened in the manner described in the analyzed documentation, then at the front edge of the front left mast MERCEDES there should be damage caused by the force acting from the front to the rear of the MERCEDES, which in this case was not the case . If the collision of the front left-hand side of the MERCEDESA and the rear right-hand side of the YUGA comes in the way indicated in the analyzed documentation, a collision in the form of a deformation of the sheet metal from the left to the right side of the MERCEDES would result in a collision on the front left mudguard of the MERCEDESA. which was not the case here.

3.2. Example 2 - Damage did not occur in the traffic accident

The analyzed traffic accident in this example occurred with injured persons, in which two passenger cars, brands BMW and HYUNDAI participated. Based on a detailed analysis of the material elements from the file, and in particular photographs from photo documentation and photographs of damage to BMW, it was found that the left side of the front left wheel tire was damaged in the form of a "split". On the rim and a spider of the front

left-hand mark, traces are like "dark-colored" marks, approximately at the height of the left-hand wheel left-hand tire damage, figure 11. BMW's damage is also on the back of the plastic part (below front left mudguard) separated from the front left mudguard and moved to the front of BMW, Figure 12.

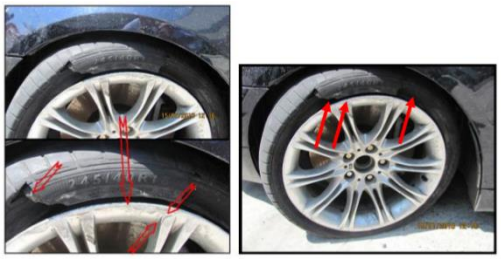

Figure 11. and Figure 12. Damage to the tire - "splitting" [3]

On the right-hand side of the BMW's rear bumper, the traces are like scratches, Figure 13. In the upper part of the damage to the right part of the BMW's rear bumper, there are "cracks", Figure 14.

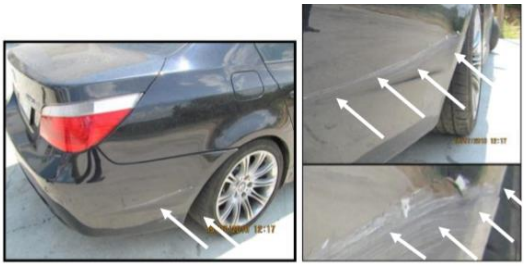

Figure 13. and Figure 14. Scratches on the rear bumper and cracks on the right-hand side of the rear bumper [3]

The right front left-hand holder is "interrupted" and the front left is not in the tray, Figure 15. The front left shoulder is "interrupted", Figure 16.

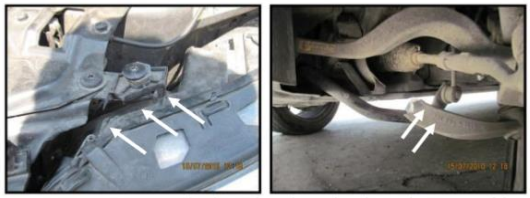

Figure 15. and Figure 16. Display of the right holder of the left head and left lower shoulder [3]

By analyzing the damage photos of HYUNDAI, damage to the front bumper (at the height of the front left-hand corner of HYUNDAI) was determined by the force of the front to the rear of HYUNDAI, Figure 17. The front left mudguard of HYUNDAI was damaged (at the height of the front part of the mudguard) by acting force from the front to the rear of HYUNDAI. Analyzing damage to the front of the front left mudguard of HYUNDAI on damage is the scratch trace, Figure 18.

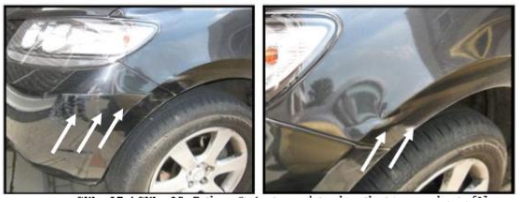

Figure 17 and Figure 18. Display of front bumper damage and scratch marks [3]

On the left side of the left side mirror of the HYUNDAI, traces are like traces of scratches and traces of blue, in the front left door, at the height of the middle of the door (viewed in length) and in the lower half of the door, it is visible damage in the form of "scratch" ', Figure 19. On the lower edge of the "edge" of the front left mudguard, the trail is "bright colors", Figure 20.

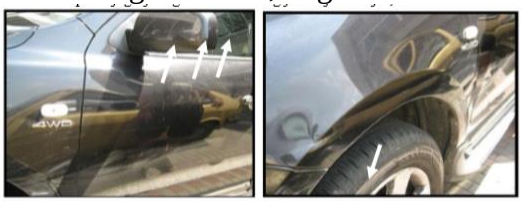

Figure 19. and Figure 20. Display of left-hand side mirror damage and "bright" color trace [3]

On the rim and the vapor, there are traces of "dark color", figure 21. The left side of the tire with traces of "dark color" is damaged in the form of a "split" tire, Figure 22.

Figure 21 and Figure 22. Tire damage display [3]

The detailed and comparative analysis of the material elements from the file was not determined at the position of which point (or where) the track was found with traces of "dark color" on the rim and the paw. An

analysis of the HYUNDAI damage images shows that the left threshold is damaged. On the left "threshold" is missing the left side. At the edges of the threshold part, which is located on HYUNDAI, the damage is like "tearing" or "cutting" of the material.

In this example, it was determined, and based on a detailed and comparative analysis of all damage to BMW and HYUNDAI and the site of the site, the damage did not correspond to the described manner of occurrence of a traffic accident. Based on the damage to BMW, they do not correspond to the damages on HYUNDAI, which means that such damage could not have occurred in the traffic accident described in this way.

3.3. Example 3 - Damage did not occur in the traffic accident

The analyzed traffic accident with material damage in this example occurred at the crossroads, involving two passenger cars, brands TOUAREG and FORD.
A detailed and comparative analysis of TOUAREG damage images found that the TOUAREG front bumper was deformed by the action of the force in the direction from the front to the rear of the TOUAREG, with the center of impact at the height of the front left corner. On the TOUAREG front bumper, about 0.4 m to the right of the left side of the TOUAREG, the damage is similar to the "tear" of the front bumper TOUAREG, Figures 23 and 24.

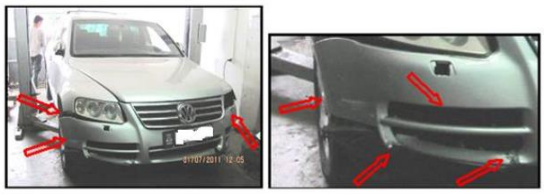

Figure 23. and Figure 24. Damage to the front bumper and "tear" of the front bumper [3]

The decorative plastic on the lower part of the front bumper TOUAREG was damaged in the form of a "crack". At about 0.4 m (estimated from TOUAREG damage photos) to the right of the left side of the TOUAREG, the damage is "crack", the position "a" in Figure 25. At about 0.2 m (estimated from TOUAREG damage images to the right of the left side of the TOUAREG, the damage is "crack", the "b" position in Figure 26. The front left TOUAREG fog is damaged by the glass front left fog lamp " broken " and not in the tray, Figure 25.

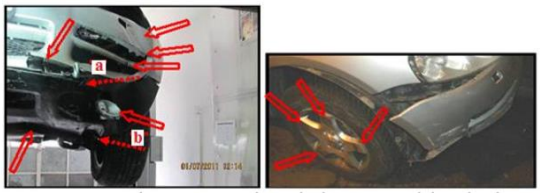

Figure 25. and Figure 26. Characteristic damage of decorative plastic and Damage to the front left wheel wheel [3]

A detailed analysis of photographs from photo documentation on the front right-wheeler wheel, on the front left-wheel rim and on the rear left-hand wheel of the TOUAREG traces are like traces of scratches, Figures 27 and 28. A detailed analysis of photographs from photo documentation lacks the front left of TOUAREG.

Figure 27. and Figure 28. Rear wheel left wheel rim and rear left wheel rim

On the lower part of the TOUAREG, the tracks are like "yellow" marks, figure 28. The traces on the right side of the "track" of the front bumper TOUAREG are like scratch marks.

Detailed analysis of photographs from photo documentation found damage to FORD's front left mudguard in the form of deformation of sheet metal caused by the action of force in different directions, with a center of impact in several different places, Figure 29. The front edge of the front left mudguard FORD is at about 0.7 m above the surface (estimated from photographs from photo documentation) deformed by force acting roughly, in the direction from the upper front of the front left mud to the lower middle part of the FORD, the position "a" in figure 30. The

front edge of the front left mudguard FORD -a is approximately 0.6 m above the surface (estimated from photographic photo documentation) deformed by force acting approximately, in the direction from the front of the front left mud to the rear of the front right mudguard, the position " b " in figure 30. Na the front left part of the bonnet of the FORD motor vehicle, and at the height of the front left corners of the trail are like scratch marks. The front edge of the FORD bonnet cover at about 0.5 m to the right of the left side of the FORD is damaged by the front of the bonnet of the bonnet of the bonnet being pushed to the FORD engine compartment. The FORD bonnet cover is not located in the tray, figure 30. FORD's front left-hand mirror is broken and the front left of FORD is not in the tray. The front bumper and the front decorative mask of FORD, figure 30, are missing.

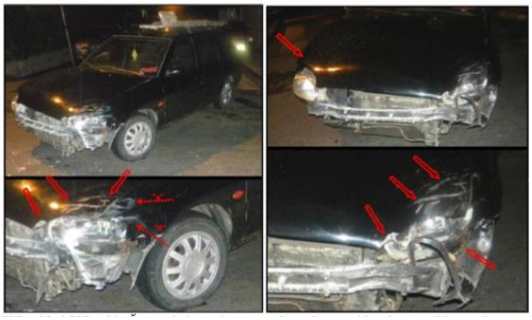

Figure 29. and Figure 30. Widely looks at the damage to the front left mudguard and shows a closer look at the damage to the front left mudguard [3]

In this example, based on detailed and comparative analysis of damage to TOUAREG and FORD, it was found that damage to the front right corner of the TOUAREG and front left-hand corner of FORD did not correspond to the collision of the front right corner of the TOUAREG and the front left-hand corner of the FORD- as described in the analyzed documentation. Also, based on a detailed and comparative analysis of material evidence from the analyzed documentation, it has been found that the traces of this traffic accident (listed in the inspection documentation) do not correspond to the traces that should result from the collision of the front right corner of the TOUAREG and front left corner of FORD. Namely, neither on FORD nor on TOUAREG have any traces (damages) that would lead to traces on the car in front of FORD (visible on photos from photo documentation).

4. CONCLUSION CONSIDERATIONS

When analyzing three traffic accidents, all material traces, damages, and elements describing an accident are important. If there is a dilemma whether an item (photo, damage, trace, etc.) should be an integral part of the documentation, it should always be possible for all available items to be contained. Workers of insurance companies and courts should have this in mind and try to collect as much as possible elements of material evidence, material evidence and statements describing a particular accident at the stage of the collected data on the accident. It is important to make good quality photographs of damage to vehicles reported for damages in a timely manner. Photographs made at the right moment can in some cases show more realistic elements that are important to exclude the possibility of the described incidence of an accident. When visiting a damaged vehicle, damage assessors in insurance companies should measure the typical damage to the vehicle. The possible way to exclude the possibility of an accident is to exclude the characteristic parts of the vehicle, their detailed and comparative analysis with the elements visible on the photographs.

From the above examples, it can be concluded that in one particular case all three conclusions concerning vehicle damage can be encountered. In the examples, it is possible to exclude the possibility that certain damage has occurred in the accident in question. The first example shows detailed damage to the MERCEDES vehicle, while on the basis of a small number of elements (two photographs) on the YUGO, it can be determined that the damage was not caused by the accident. To prove the accident, additional comparative analyses of material

evidence and statements by the alleged participants of the accident are necessary. In the second example, the damage to the BMW and HYUNDAI vehicles has been demonstrated, based on the analysis of the BMW vehicle damage data and the damage caused by HYUNDAI vehicles, can lead to positions that exclude the possibility of damage in the reported accident. In the third example of the traffic accident of TOUAREG and FORD, it was shown that all damage could not have occurred in the analyzed accident. The expert in the traffic and technical profession in some accidents can not exclude the possibility that some damage has occurred in the presented traffic accident. Such cases are extremely important for insurance companies, their recognition and making the right decisions, where insurance companies can retain significant tangible assets.

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