

Correlation of Exceeding of Speed Limits and Traffic Accidents in Hungary¹

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Road traffic safety is a high priority issue in Hungary and in the European Union. Accident prevention programmes aim to reduce the number of fatalities in road accidents. To examine the effectiveness of the programmes it is inevitable to create a database in connection with accidents and a network of information with the analysis and the representation of the data. The essay aims to review the information processes involved in the road traffic accident prevention system and the analysis of the disorders in the system with the utilization of the principles of military Information Operations.

Keywords: road traffic, accident prevention, Information Operations (INFOOPS), research on accident causes, data, comparability, analysis, change

There has been a constant development in public road traffic since the appearance of the internal combustion engine. This is the main feature of the freedom of movement nowadays. Over the last century there have been severe changes in the three most important elements of traffic, which are human beings, vehicles and the environment. The number of automobiles in Hungary reached 3,313,206 by 2016.³

A crucial point of the process of traffic is effectiveness. This means that human, vehicle and load arrives safely on target. Effectiveness is aided by research in traffic safety and the regulations and updates that are based on such research. Any innovation in traffic safety is only effective to the extent of cooperation by the participants, i.e. safety belts only function when they are fastened properly, or vehicles are used in the pre-planned order of traffic, with regulations observed. The attitude towards traffic determines the participant's attitude toward regulations, consideration of partnership and getting around safely as a community value or even aiding others in their safe travel.

One of the key elements of road traffic is safety. The annual number of traffic-related deaths in the European Union is 25,000, while the same figure for Hungary is 600.⁴ To aid comparison, road fatalities per one million capita values are published in the

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³ Központi Statisztikai Hivatal, Közúti gépjármű-állomány. Source: http://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_ode006b.html (Downloaded: 11.02.2018.)

⁴ Személy sérüléssel járó közúti közlekedési balesetek. (Accidents on public roads with personal injuries.) Source: https://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_ods002.html (Downloaded: 07.11.2015.)

European Union. The rates in Hungary are higher than the average with the number of 61 road fatalities per one million capita. This places Hungary in 19th position in the ranking.⁵

The objective of accident prevention is to increase safety, implementing a series of actions that aid a reduction in the number of road traffic accidents and ease the severity of such accidents.

In order to achieve the target of road traffic safety one must investigate the causes. For this it is inevitable for the researcher to access as much data as possible in connection with the accidents and hectic accidental points. It is also important to process and analyse the information to draw proper conclusions. Such data must be accurate and comparable both temporally and spatially so that the conclusions are correct and progressive.⁶

The absolute transgression of the speed limit, also known as overspeeding, significantly increases the risk of accidents and it also adds to the severity of accidents considering the majority of the trauma or the occurrence of fatality in the accidents. Overspeeding is the greatest problematic point in road traffic safety issues such as speeding, drunk driving and use of passive road traffic safety gear.⁷ In my research I examine if there is a discrepancy between data specially gathered on overspeeding and that taken as part of the accident investigation.

The Information Procedures of Road Traffic Accident Prevention

Precise information, correct conclusions drawn from them and prompt, timely action can save human lives in the segment of road accident prevention and on public roads. To support this aspiration, the police have to collect up-to-date, precise data. Different organisations such as the Hungarian Central Statistical Office and the Road Accident Prevention Committee of the National Police Department should generate a database that should function as a network so that the content could be easily accessed by anyone who evaluates the data, as well as the decision-makers in the matter. This allows for the different organisations that are involved in the issue of road accident prevention to not only become willing and competent but to recognise the situation as well.

As in other issues, it is important to emphasise both cause and effect in road accident prevention, too. It is indeed possible to affect traffic safety through actions and promotions developed on the basis of research in road accident data and causes. The effectiveness of these actions can be controlled by monitoring changes in road accident data and enforced by iterated intervention.

In Hungary the Road Accident Prevention Committee of the National Police Department is responsible for organising and controlling road accident prevention promotions and programmes. The effectiveness of the Road Accident Prevention Committee

⁵ http://etsc.eu/wp-content/uploads/PIN_ANNUAL_REPORT_2017-final.pdf

⁶ Nilsson (2004) 1.

⁷ Gégény (2009)

of the National Police Department was honoured by the European Transport Safety Council (ETSC) in 2012 with the PIN Award that goes to countries which achieve the greatest progress in road traffic safety.

For the sake of effective road accident prevention, the activity and work of various organisations must be co-ordinated and synchronised so that they complement, not neutralise each other. Such neutralisation can be observed in case of the controversial programmes of bicycle organisations and the Movement for More Humane Parking.

The mainstreams of road traffic prevention are centrally defined by the so-called White Book of the European Union and the Road Accident Prevention Committee of the National Police Department.

The Creation of a Database

The data needed for the examination of road traffic accidents is made up of two aggregations, one of which is data relating to the basic facts of the state of traffic. This agglomeration contains facts about the quality and length of the road network, the composition of the vehicle fleet, the drivers' sex, age and the categories of their driving licences.⁸ Such data is constantly collected and published by the Hungarian Central Statistical Office. The second agglomeration of data contains facts about road traffic accidents. Data is collected by police officers taking action at the scene of the accidents. The data is supplied to the Hungarian Central Statistical Office which reveals them annually in their publication. The data taken annually is analysed in terms of the cause of road traffic accidents and in comparison with earlier details. The results are published annually in the Yearbook of Road Traffic Accidents.

The data is published every three months in brief reports and also every three months, it is provided to the ITF (International Transport Forum), and annually to Eurostat.⁹ On the basis of the data, traffic experts make comparisons and analyses according to different aspects such as territorial divisions (counties or countries) or periods of time. Follow-up research then examines the effectiveness and productiveness of earlier interventions through temporal comparison. The results of the research will reveal whether it is necessary to extend the programmes or interventions. This is the "regulation cycle" of road traffic accidents.

Problems Associated with the Production of Information

The production of data concerning road traffic accidents is based on the Council Decision of 30 November 1993 on the creation of a Community Database on Road Accidents (93/704/EC). This constrains the range of data since: 1. Member States shall establish

⁸ Nilsson (2004) 2.

⁹ Központi Statisztikai Hivatal – Módszertani dokumentáció. (Hungarian Central Statistical Office – Methodological Documentation). Source: http://www.ksh.hu/apps/meta.objektum?p_lang=HU&p_menu_id=110&p_ot_id=100&p_obj_id=ODS&p_session_id=61212641 (Downloaded: 07.11.2015.)

statistics on road accidents resulting in death or injury that occur within their territories. The decision excludes from the database any accidents of substantial loss which could serve as a cause research material. The next problem that highlights the question of latency is that according to the actual regulation, authorities are only required by law to report the accident if it caused death or personal injury.¹⁰ If the participants in an accident agree and directly settle losses on site, that accident will no longer exist as far as the researchers are concerned.

Latency is crucial in a large number of cases where the participants of the road traffic accident do not consider it an accident despite definition and the personal injuries that might be involved. Typical examples of this are bicycle fall accidents which provide less data because of latency.¹¹

The other problem concerning the provision of data is how long after the accident must the statistical data be recorded. In order to complete periodical/annual statistics, it is not possible to wait until the procedures brought to legally establish responsibility are completed, as legal procedures can last even for years. According to the actual regulations, we consider an accident resulting in death if the injured person passes away in 30 days' time from the accident related injury. The police send the statistics to the Hungarian Central Statistical Office in 10 days after the elapse of the 30-day period.¹² This, however, means that the production of data happens at the beginning of the accident procedure based on the scene examination report and not at the end of the procedure. However legal or professional the action taken is, and even though the police officer correctly establishes the transgression leading to the accident on site, every piece of information will not be available at the scene. In some cases, this could result in the jury and the authority pointing out a different cause of the accident than the one pointed out in the scene investigation report and noted in the record.

Among the several causes of road traffic accidents, there is a key violation of regulations and that is speeding which has to be settled by forensic experts. The problem is that the experts cannot give a statement at the scene of the road traffic accidents. Actually, experts' statements are only completed after the elapse of a 30-day period, so data cannot be changed if necessary in the examination term. Nevertheless, speed has a significant role in road accident deaths, so it is not by chance that most of the researches on the topic examines the effects of changing the speed limit.

Therefore, one of the most important pieces of data figuring in accident causes, i.e. speed, is not given in the statistic records in its factual value. This failure roots in the

¹⁰ 1/1975. (II. 5.) KPM–BM együttes rendelet a közúti közlekedés szabályairól 58.§. (Joint ordinance of the Ministry of Traffic and Post and Ministry of Home Affairs on the regulations of road traffic, paragraph 58.)

¹¹ Központi Statisztikai Hivatal – Módszertani dokumentáció. (Hungarian Central Statistical Office – Methodological Documentation). Source: http://www.ksh.hu/apps/meta.objektum?p_lang=HU&p_menu_id=110&p_ot_id=100&p_obj_id=ODS&p_session_id=61212641 (Downloaded: 07.11.2015.)

¹² Központi Statisztikai Hivatal – Módszertani dokumentáció. (Hungarian Central Statistical Office – Methodological Documentation). Source: http://www.ksh.hu/apps/meta.objektum?p_lang=HU&p_menu_id=110&p_ot_id=100&p_obj_id=ODS&p_session_id=61212641 (Downloaded: 07.11.2015.)

methodology of data supply. It could be corrected if the experts' statement was accessible to the data supplier authority at the time of supplying the data.

It is usually the experts' statement that highlights overspeeding (be it absolute or relative) as the cause of road traffic accidents while scene examinations note primarily the transgression of rules. In case a vehicle – to give priority – fails to yield in a road crossing to one that travels on the road with the right of way but overspeeding and they crash, it is the transgression of primary rules that will be reported, not overspeeding. The statement where “the one with the right of way could be responsible for the road accident if it happened in conjunction with speeding” must be examined.¹³ From the victim's point of view, speeding will not be mentioned in the statistics even if it played no role in causing the accident (i.e. it would have happened anyway even if the speed limit was not broken), still, it can impact the outcome and severity of the accident. The same situation can arise on the causer's side, where the accident happened because of breaking the rules on overtaking, although in many cases overspeeding can appear as the primary cause and can influence the severity of the accident.

Speed control in traffic policing is one of the most debated tasks in the eyes of society. This is because only 30% of the road traffic accidents corresponded to overspeeding. Many of these cases involve relative overspeeding, which means that the driver did not pass the highest speed limit on that particular road but failed to drive in accordance with the given weather, visibility, traffic and road conditions. Absolute overspeeding is only mentioned in connection with circa 1% of accidents in the statistics' indicators and this makes special police traffic control measures unacceptable to the public. Nowadays it is not necessary to raise the speed limits in general, only a road quality related rise of speed limits would be acceptable.¹⁴ Professionals and the authorities must not be satisfied with experts' interpretations of data on the correlation of road travel speed but they have to put great effort in informing the public in order to make travellers understand the above correlations and make them accept the speed limits and the activity of speed control in order to improve traffic safety.

The Objective of the Research

My research aims to prove the justification of speed control, highlighting overspeeding as a possible cause of road accidents. To achieve my objective, I will analyse data on road accidents, especially those with a fatal outcome. The statistic recording of data happens over a 30-day period post accident, however, the examination of the specific causes of the accident does not end in the same period. This is particularly relevant to the speed of the vehicles involved in the accident, since this is not available at the scene of the accidents in most cases. Therefore, I will apply empirical research in the

¹³ A Magyar Köztársaság Legfelsőbb Bíróságának 6/1998 BJE határozata. (6/1998 Resolution of the Hungarian Supreme Court.)

¹⁴ Holló (2008)

framework of the basic research in order to compare the road accident travelling speed data collected by experts investigating in Hungary in the years 2014 and 2015. In my research I also use the data published by the Hungarian Central Statistical Office from the years 2014 and 2015.

In my research I survey investigations of the road accidents ending in fatal injuries in the period of 2014 and 2015 and I collect data relating to overspeeding in these accidents to create a database. In this process the data is volatile (fresh) and the investigative files are not archived, so they can be researched and are mature enough to have a completed expert's statement attached. With the help of processing methods and quality analysis and statistic techniques, I highlight the significance and rate of overspeeding established by experts in fatal road traffic accidents. My research is comprehensive since it covers all fatal road accidents in the given period of time.

The Role of the State, Legislation and Applying the Laws

Vehicle drivers consider regulations on speed limits and overspeeding the least respectable and acceptable. There are speed limits defined for given vehicles and given types of roads which are specified by the authorities in order to make road traffic operate at the highest level of safety. Experts can settle other speed limits considering these roads in the framework of legal regulations in the process of traffic organisation with an emphasis on the safety of travellers, fast and uninterrupted travel, strictly putting safety in the first place. Despite of this, vehicle drivers usually choose the driving speed themselves, trusting their own perception and ability and their vehicle. They usually set a higher speed limit than the legalised one which prioritises fast travel over safe travel.

However, if this kind of interpretation of speed limit becomes widespread, the average travelling speed of vehicles will increase not in legal terms but in practice. Any increase, or decrease, for that matter, in speed limit will, however, result in a notable change, mainly in the rate of fatal road accidents. According to the internationally accepted Nilsson Power model of the number of deaths in road accidents varies with the change in average speed raised to the fourth power. (The number of fatal accidents after the change = the number of accidents before the change multiplied by the change in average speed raised to the fourth power.)¹⁵

$$Y_1 = \left(\frac{v_1}{v_0}\right)^4 Y_0$$

Figure 1: The Nilsson Equation

Source: Drawn by the author

¹⁵ Nilsson (2004)

The modifications of the speed limits in Hungary also affected the statistics of those who died in road accidents. One of the examples is the decrease of speed limit to 50 km/h from 60 km/h in inhabited areas in 1993. This action was represented by Ferenc Irk and Sándor Mózes as follows: “The 1st of March 1993 is the beginning of a new era in Hungary in terms of road safety. If the action can be realised and enforced as planned, circa 150–300 lives can be saved per annum.”¹⁶ The change was even greater than expected.

Table 1: Road Accident Fatalities from 1990 to 1997

Year	1990	1991	1992	1993	1994	1995	1996	1997
Fatalities	2,432	2,120	2,101	1,678	1,562	1,589	1,370	1,391

Source: Hungarian Central Statistical Office

Of course, there have been many factors influencing traffic safety but it is a fact that, after decreasing the speed limit in inhabited areas in 1993, the number of deaths dropped by 423 cases in the first incomplete year. The first complete year was 1994 and the rate dropped by 539 cases compared to 1992. This decrease lasted until the year 2000 when deadly accidents numbered 1200.¹⁷

Unfortunately, there was another action which took effect in the opposite direction. Despite the strong position of traffic experts on the matter, the absolute speed limit outside inhabited areas was raised by 10 km/h. The rise means a change from 80 km/h to 90 km/h as the highest speed limit in uninhabited areas, a change from 100 km/h to 110 km/h on highways and from 120 km/h to 130 km/h on motorways. The effect was quite evident: “it was traceable that the expected and real monthly trend in the rate of fatal road accidents, the number of the deaths and severity indicators split in May 2001 when there was a rise in the decreasing trend up to that point. These results show without doubt that raising the speed limit outside inhabited areas has a markedly adverse effect on road safety.”¹⁸

Table 2: Number of Fatalities in Road Accidents from 1999 to 2005

Year	1998	1999	2000	2001	2002	2003	2004	2005
Fatalities	1,371	1,306	1,200	1,239	1,429	1,326	1,296	1,278

Source: Hungarian Central Statistical Office

¹⁶ Irk–Mózes (1993)

¹⁷ Holló (2008) 175.

¹⁸ Holló–Zsigmond (2005)

According to the statistics there is a break in the developing tendency up to 2001. In the year 2002 there were 229 more deaths than in 2000, and not until 2008 could it drop below the pre-2000 rate. By 2016 the number of deaths dropped by 50% compared to 2000.

Table 3: Number of Fatalities in Road Accidents from 2000 to 2016

Year	2000	2010	2011	2012	2013	2014	2015	2016
Number of Fatalities	1,200	740	638	605	591	626	644	607

Source: Hungarian Central Statistical Office

This is why it is important to take the European Union's proclamations seriously. As a result of a road safety related congress held in Malta in 2017 with traffic ministers participating, a declaration was published whose crucial point was that not only speeding, drunk driving or driving under the influence of drugs, but a mental state unsuitable for driving and tiredness can be a principal cause of road accidents in the European Union. They highlighted that in such high risk areas where people work, play or cycle, the absolute speed limit should be set at 30 km/h.¹⁹

Data on Road Accidents

In order to analyse the data of the Hungarian Central Statistical Office, it is important to familiarise oneself with the process of gathering data.²⁰ These are the points where serious problems appear in my opinion. In the publication of the Hungarian Central Statistical Office, the Police are mentioned as the source of data in the chapter on methodology. The Police has authorisation under Paragraph 85 (2) of Act No. XXXIV of 1994 on the Police Department whereby the police can supply the given accident data to the Hungarian Central Statistical Office without personal identification data. Methodological documentation has an important quality that influences the data on overspeeding to a great extent and that is the time interval of supplying data: "Data is handed over after the elapse of 30 days from the accident, over a 10-day period."²¹

Police officers must record data related to an accident following the regulations given by instruction No. 60/2010 (OT 34.) ORFK of the Head of the National Police Headquarters on the regulations on police procedure in cases of road accidents and crimes in connection with traffic. One piece of data to be recorded is the highest speed limit on

¹⁹ Valletta Declaration on Road Safety, 29 March 2017, Valletta.

²⁰ Központi Statisztikai Hivatal – Módszertani dokumentáció. (Hungarian Central Statistical Office – Methodological Documentation). Source: http://www.ksh.hu/apps/meta.objektum?p_lang=HU&p_menu_id=110&p_ot_id=100&p_obj_id=ODS&p_session_id=61212641 (Downloaded: 13.11.2017.)

²¹ Központi Statisztikai Hivatal – Módszertani dokumentáció. (Hungarian Central Statistical Office – Methodological Documentation). Source: http://www.ksh.hu/apps/meta.objektum?p_lang=HU&p_menu_id=110&p_ot_id=100&p_obj_id=ODS&p_session_id=61212641 (Downloaded: 13.11.2017.)

the given road sector for the given vehicle. During the scene investigation this is measured and noted among the *“Data and characteristics in connection with the accident scene”* section of the police record. When it comes to the eyewitnesses and people concerned, the travelling direction and speed of the vehicles and their relevance has to be cleared and analysed later on in the investigation.

The expert, the consultant and the legal expert might take part, although not as a member, in the work of the committee, but they do not give an expert’s statement in connection with the speed since they cannot do this in lack of specific data and calculations. In practice, however, statements are usually not completed by experts in 30 days even if they were involved in the accident at the time of the scene investigation.

As highlighted above, the statistical data of the accidents is not published on the basis of the investigation or the experts’ statement but they are published on the basis of the scene investigation sent to the Hungarian Central Statistical Office. There are only a few exceptions where the speed of the vehicle at the actual moment of the accident or collision is included (i.e. the speedometer is stuck), but in most cases the speed at the moment of the accident or preceding it, or the actual transgression is not included and cannot be as such.

One must not ignore other performance pointers that measure how the vehicle drivers follow traffic regulations and to what extent they use passive security devices such as seatbelts.²²

Hypothesis

At professional discussions, trainings and courses I often meet police officers who take part in the investigation of road accidents and officers, medical experts and engineering experts who deal with how speed influences accidents. What they all agree in is that speed plays a crucial role in the occurrence and severity of accidents, but the data provided by the Hungarian Central Statistical Office does not provide a realistic view of the importance of speed in the matter. When I requested realistic data instead of opinions or experience on the topic, my partners were unable to provide any. Therefore, I decided to examine if there is any correlation between road accident origins published annually in the database of the Hungarian Central Statistical Office and the data measured at the investigations made at traffic accident scenes. Since there is no possibility to perform an investigation based on a representative standard, I decided to examine the whole range of accessible data. Considering that a database must be accumulated for this purpose and all accidents involving injury are in the magnitude of tens of thousands even if considered annually, I restricted my segment to the examination of fatal road accidents and deaths as one of the most important pointers of road traffic safety. For the sake of comparability in the European Union, the road traffic safety situation is characterised by accident related deaths per one-million inhabitants, where Hungary is

²² Holló (2011) 32.

ranked 19th out of the 28 Member States with 63 persons compared to the EU average of 51.²³

I rely on this to perform a deep analysis of the investigation materials of the fatal road accidents that occurred in Hungary in the years 2014 and 2015. This is optimal because the investigation has been concluded in these accidents. There are also experts' statements available where needed. In these cases, the data is fresh and the research can be completed since the data is not going to be archived by 2018, which is the anticipated end of my research. Since in 2014 there were 626 deaths in 537 road accidents and in the year 2015 there were 644 deaths in 585 road accidents, which amounts to 1,158 fatal road accidents, which I consider a measure of data that allows one to draw conclusions on the merits.

I survey what kind of data is recorded at the scene investigations, what details and traffic violation data have been recorded by the police and handed over to the Hungarian Central Statistical Office, whether there has been any speeding involved and if that speeding was a constituent cause of the accident.

My hypothesis is that in case of fatal road accidents there is a significant division between the absolute speeding rates published by the Hungarian Central Statistical Office and the speeding rates measured in the police investigations of these accidents.

It is important to mention that speeding is not exclusively an accident cause as in most cases another violation of a regulation is "required", for example another vehicle to cross the road or turn in front of the speeding vehicle or a pedestrian stepping in front of it. In accidents where the vehicles lose stability or leave the road, the fact of speeding can only be established in the investigation since in these accidents the cause is pointed as a violation of Paragraph 25 (1) of the Highway Code (*One must drive the vehicle at all times in accordance with the prevailing weather conditions, visibility and road conditions*). In spite of the fact that reliable and detailed data can be collected with the aid of conflict research (such as the direct observation of traffic, the examination of the behaviour of participants in traffic and the registration of their conflicts),²⁴ it is important to reveal the real causes behind the fatal road accidents with particular regard to arguments against speed controls.

Data from 2014

In the year 2014 there were 626 deaths in 537 fatal road accidents. Based on the accidents' mechanisms, the authority did not find an expert's statement necessary in 151 cases. This does not mean that there was no expert involved in the case but his declaration was restricted to technical defects.

²³ Közlekedési baleseti statisztikai évkönyv, 2015, Bp. (Hungarian Central Statistical Office – Road Accident Statistics Annual: Xerox Magyarország Kft. 2016.)

²⁴ Csúcs-Bank (1986) 67–74.

According to the statistics, road accidents originated as follows: Drivers' fault – a total of 496 cases, inappropriate speed – 227 cases, of this exceeding the speed limit: 11 cases.

Speeding as the primary accident cause was mentioned in 20 cases in the original police resolution, indictment or adjudication.

There were 422 cases where the expert mentioned speed in the accident report and in these cases overspeeding was mentioned 184 times. This means that if the scene examiner indicated relative overspeeding at the accident scene as the primary cause (147 cases), it is quite possible that absolute overspeeding was established during the accident investigations (98 cases)!

According to the investigations, in 86 additional cases there was no violation in speed limits established, however, later on the expert did establish absolute overspeeding. In case of violations by unyielding pedestrians absolute overspeeding was pointed out in 15 cases. A high collision speed is a characteristic of these accidents, being over 50 km/h in 12 cases with the highest speed being 90–94 km/h. In three cases a departing vehicle crashed with a vehicle travelling at a speed higher than permitted, and is featured as the aggrieved in the record. In three similar cases, the inappropriate following distance was indicated as the cause of the accident, but in two cases the originator was overspeeding and in one case the aggrieved was speeding. Failing to yield in crossings: speeding was established in 11 cases, with 9 out of these committed by travellers moving on priority roads.

In two cases a vehicle moving in reverse crashed into a vehicle overspeeding but enjoying the right of way. In seven cases the driver of the vehicles was declared to have been inattentive, but absolute overspeeding was established later. Vehicles turning left crashed into other vehicles overtaking them or other vehicles coming from the opposite direction travelling at a higher speed than the authorised limit in 11 cases. On two occasions vehicles turning around crashed with a lorry arriving at high speed. 10 vehicles travelled at a higher speed than authorised. In one case there was overspeeding during evasion and in another case the driver entered a railway crossing at a higher speed than permitted despite of the red light. In 5 cases a pedestrian was hit by a speeding driver in a pedestrian crossing, while a speeding driver crashed with an unlit cyclist and a signalman was hit on one occasion each. In two cases the originator was the speeding driver entering a crossing, ignoring the red light.

Data from 2015

In the year 2015 there were 644 deaths in 585 fatal road accidents. Based on the accidents' mechanism, the authority did not require an expert's statement to be made in 154 cases. This does not mean that there was no expert involved in the case but his statement was restricted to technical faults.

According to the statistics, road accidents originated as follows: Drivers' fault – a total of 518 cases, inappropriate speed – 245 cases, of this exceeding the speed limit: 23 cases.²⁵

Speeding as the primary accident cause was mentioned in 24 cases in the original police resolution, indictment or adjudication.

There were 431 cases where the expert mentioned speed in the accident report and in these cases overspeeding was mentioned 190 times. This means that if the scene examiner indicated relative overspeeding at the accident scene as the primary cause (186 cases), it is quite possible that absolute overspeeding was established during the accident investigations (90 cases)!

According to the investigations, in 100 additional cases there was no violation in speed limits established, however, later on the expert did establish absolute overspeeding. In case of violations by unyielding pedestrians absolute overspeeding was pointed out in 9 cases. A high collision speed is a characteristic of these accidents, being over 50 km/h in all cases with the highest speed being 80–81 km/h. In four cases a departing vehicle crashed with a vehicle travelling at a speed higher than permitted, and is featured as the aggrieved in the record. In two cases the inappropriate following distance was indicated as the cause of the accident, however, overspeeding was established for those at fault. Failing to yield in crossings: speeding was established in 25 cases, with 21 out of these committed by travellers moving on priority roads.

In two cases the driver's inattentiveness was established as the accident cause on the scene, with absolute overspeeding established later. Vehicles turning left crashed into other vehicles overtaking them or other vehicles coming from the opposite direction travelling at a higher speed than the authorised limit in 15 cases. On three occasions vehicles turning around crashed with a lorry arriving at high speed. While overtaking, 10 vehicles travelled at a higher speed than authorised. In one case there was overspeeding during evasion and in another case the driver entered a railway crossing at a higher speed than permitted despite of the red light. In four cases the driver did not have a licence and was overspeeding. In 5 cases a pedestrian was hit in a pedestrian crossing by a speeding driver, while a speeding driver crashed with an unlit cyclist on one occasion. In four cases the originator was an overspeeding driver entering the crossing, ignoring the red traffic light.

Conclusions

As a result of examining the fatal road accidents in Hungary it became evident that the number of absolute overspeeding cases significantly increases. In both of the examined years more than 32 percent of the accidents was correlated with overspeeding. Overspeeding plays a significant role in the severity of the accident, especially in cases of unprotected travellers, pedestrians and cyclists. It was established that when relative

²⁵ 2015: number of accidents according to causes and severeness.

overspeeding was pointed out as the cause of the accident, absolute overspeeding often hides in the background. In 2014 the above is relevant to 98 out of 146 accidents, which is 67% of all. In 2015, 90 cases are connected to overspeeding out of 186, which is 48% of all. Considering that these numbers do not appear in the database of the Hungarian Central Statistical Office it would be important to create a database which would record accident data for at least the fatal accidents after the conclusion of the investigation process. The data can be found at the Police Department and the creation of a database is a mere question of decision. With the help of this database we could gain a more precise image of the road traffic accidents after the completion of the investigative procedure than the data established at the scene.

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