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**Evaluation of the 0.0 BAC limit for drivers
of road vehicles in Czech Republic, Slova-
kia, Hungary and Croatia**

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Abstract

Drink-driving is one of the most discussed TLE (Traffic Law enforcement) issues. Why? Firstly, in accordance with culture customs - traditionally, the alcohol consumption is accepted as a part of social life; as well as use cars for moving from place to place. Secondly drink-driving is easy to measure and compare with other causes of accident. The goal of this study was provide understanding of the performance and circumstances of the situation in respect to DWI in four zero limit countries. The study describes all relevant aspects of the zero g/l BAC limit and assesses its impact on traffic safety. In order to investigate additional background aspects, a questionnaire was distributed and fulfilled by relevant organizations involved in TLE chain. Data gathered included history, legislation, enforcement practices and crash data. The countries with zero limit and those with no-zero BAC limit can be found side-by-side in Europe in terms of their road safety performance. Among the four countries compared, the Croatia performs outstandingly bad. The limit itself plays only a minor role in preventing alcohol related crashes. Historical and social context together with enforcement level are the strongest determinative factors in respect to the prevalence of alcohol in injury crashes.

EXECUTIVE SUMMARY

Driving while intoxicated is one of the key risk factors and the second most common cause of fatal accidents after speeding. National governments therefore set and enforce a legal limit, which level varies considerably among countries. There are four countries in Europe which apply a general zero BAC (**B**lood **A**lcohol **C**oncentration) limit for all drivers of motorized vehicles. These countries likely reach better performance in terms of alcohol related road injuries compared to those countries which apply a non-zero BAC limit.

The overall aim of this study is to describe the situation in four countries applying zero legal limit of **B**lood **A**lcohol **C**oncentration (BAC) for drivers of motorized vehicles in road traffic. The circumstances of drink-driving policies are studied for Hungary, The Czech Republic, Slovakia and Croatia. Comparison of accident data of several EU countries allows assessing the effectiveness of BAC policies in those countries. One particular question to be answered was whether the zero BAC limit is effective, in comparison with non-zero limits, in combating alcohol related fatalities. The starting point was the comparison of relevant data available for different EU countries, which one hand pointed to outstandingly good performance of zero BAC limit countries (except Croatia), but on the other hand unveiled shortcomings in accident statistics, more particularly certain level of underreporting and a lack of common definition and harmonized reporting practices.

In order to investigate all relevant background aspects, a questionnaire was distributed and fulfilled by relevant organizations and institutes involved in Traffic Law enforcement chain in four countries. Additional information gathered included history, legislation, enforcement practices and crash data.

The countries with zero limit and those with no-zero BAC limit can be found side-by-side in Europe in terms of their road safety performance. Among the four countries compared, the Croatia performs outstandingly bad. This could be partly attributed to a late introduction of the limit, insufficient enforcement and higher number of risky drivers, especially novice ones. The limit itself plays only a minor role in preventing alcohol related crashes. Historical and social context together with enforcement level are the strongest determinative factors in respect to the prevalence of alcohol in injury crashes.

The evaluation suggest that the zero limit itself plays rather minor role in combating drink-driving and that it is above all the general socio-cultural context, in which such a policy is placed, which is determinative in delivering relatively satisfactory results in terms of alcohol related accident outcomes. Socio-economic background, culture, historical development, government and many others factors plays a role here.

Successful implementation of zero BAC policies in four EU countries is the results of favorable historical development, wide acceptance by public and a general climate condemning drink driving. These results are likely not transferable from country to country as each one dispose different predisposition for a successful application of drink driving policies.

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List of abbreviations

AC:	Alcohol Concern
BAC:	Blood alcohol concentration (content)
CCC:	Czech Car Club
ETSC:	European Transport Safety Council
TLE:	Traffic law enforcement
ERSO:	European Road Safety Observatory
OECD:	Organization for Economical Cooperation and Development
EC:	European Commission
DG TREN:	Directorate General for Transport and Energy

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1 INTRODUCTION

The primary purpose of the study is the complex description of zero Blood Alcohol Content (BAC) issues. The secondary aim is to provide understanding on the effectiveness of various BAC limits in EU countries. The study basically looks at the realities and performance of four countries with zero BAC limit (Hungary, The Czech Republic, Slovakia and Croatia) and considers their performance in comparison with other countries, which have set a non-zero BAC limit. Describing all relevant aspects of the 0.0 BAC limit such as historical context, social, economical and cultural background of such limit shall provide some understanding on whether a strict prohibition is useful or not. Important part of the study is based on the traffic accident data, but throughout the text, not only quantitative, but also qualitative issues are considered.

The first section is based on general information about alcohol, about the drink-driving behavior and about the circumstances of BAC limit. This section also focuses on the method of evaluating of the study goals. Next part deals with the circumstances of zero legal limit in four studied countries. Study is based on the traffic data and also on the other issues regarding the legal zero BAC limit in four focused countries. The Police Statistics (in The Czech Republic, Slovakia and in Hungary), the data from the Ministry of Interior in Croatia were the main sources of the relevant data. A few more organizations were involved in data gathering: University Faculty of Transport in Zagreb, Hrvatski Autoklub, Czech Embassy in Zagreb.

It is widely recognized that alcohol is one of the most serious risk factors in road traffic, if not the major one in some countries. Driving under the influence of alcohol increases considerably the risk of being implicated in a road accident and/or get injured on road. Empirical relationship between the injury risk and the BAC is well known and broadly available in scientific literature. A BAC of 0.2g/l doubles the risk of fatal injury in road traffic, while the BAC of 0.5 g/l increases the risk of deaths by a factor of 4.

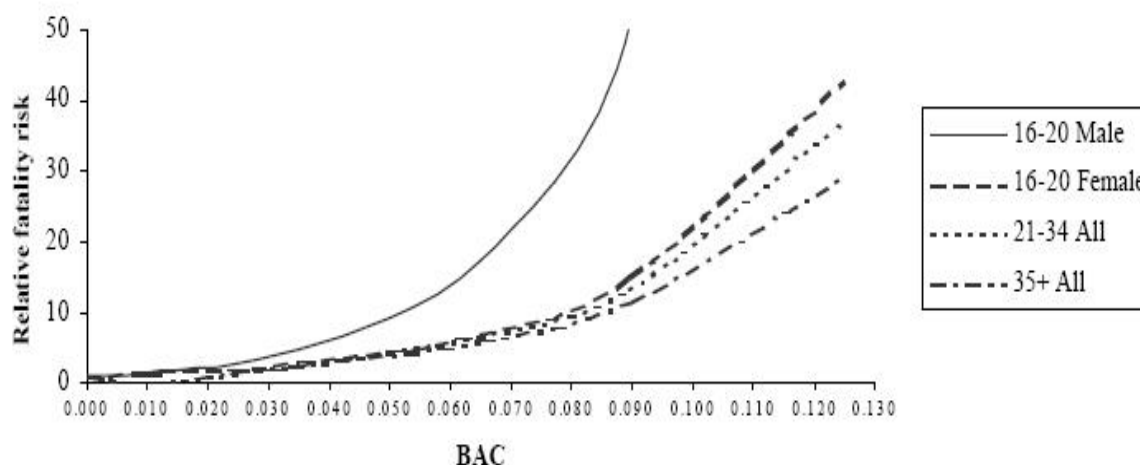


Figure 1. Relationship between the relative fatality risk and the BAC (Elvik et Vaa, 2004)

An increased risk of injury is the motivation for countries to set a legal BAC at some reasonable level, which represent a balance between increased risk and personal restraints, while reflecting the cultural and social background of the national population. By January 1, only 3 countries in EU set their BAC limit at zero. These countries are the Czech Republic, Hungary and Slovakia. Beside, the EU candidate country, Croatia applied the zero BAC limit. Since 1.July 2008, a general zero BAC limit in Croatia was abandoned and applies now only to novice drivers. The overview of the countries and their legal BAC limits is given in Table 1.

Table 1. Legal BAC limit in EU countries and Croatia as of January 1, 2007 (source: EC, DG TREN)

Code	Country	BAC limit	Code	Country	BAC limit
BE	Belgium	0.5	LU	Luxembourg	0.8
BG	Bulgaria	0.5	HU	Hungary	0.0
CZ	Czech Republic	0.0	MT	Malta	0.8
DK	Denmark	0.5	NL	The Netherlands	0.5
DE	Germany	0.5	AT	Austria	0.5
EE	Estonia	0.2	PL	Poland	0.2
EL	Greece	0.5	PT	Portugal	0.5
ES	Spain	0.5	RO	Romania	0.0
FR	France	0.5	SI	Slovenia	0.5
IE	Ireland	0.8	SK	Slovak Republic	0.0
IT	Italy	0.5	FI	Finland	0.5
CY	Cyprus	0.9	SE	Sweden	0.2
LV	Latvia	0.5	UK	United Kingdom	0.8
LT	Lithuania	0.4	HR	Croatia	0.0

There have been a long discussion on the effectiveness of different BAC limits in Europe, but until now, unambiguous conclusions are still missing. This is partly due to the fact, that data related to DWI accidents are often incomplete and unreliable. This is also one of the main conclusions of the SafetyNet project, which deals with the harmonization of road safety relevant data in Europe. The project produced a comparison of EU countries in the area of alcohol related fatalities. The definition of the recommended alcohol related road safety performance indicator is as follows: The percentage of fatalities resulting from accidents involving at least one driver impaired by alcohol. A detailed comparison of countries in respect to this indicator and the legal BAC limit is presented in Figure 2.

Generally speaking, countries with zero BAC limit has in average the lowest percentage of alcohol related fatalities, while the Scandinavian countries with a 0.2 g/l BAC limit have one of the highest percentage of alcohol related fatalities in Europe.

There are however indications of the lack of reliability of these data provided by countries. For example, the likely value of the indicator in Austria was estimated by KfV researchers as high as about 15% instead of some 6% declared by Police. As the main reason, the restricted

access to autopsy related information was mentioned. The same situation may apply to several other countries, especially those with an extremely low percentage of alcohol related fatalities. Unfortunately, the determination of the true values is possible only through the costly in-depth studies comparing police and hospital data based on case-by-case data comparison.

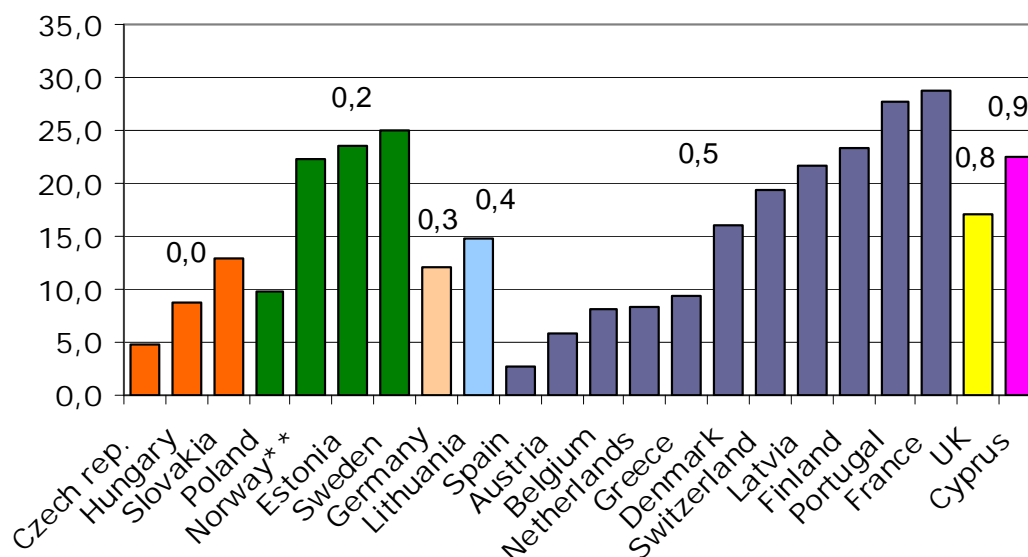


Figure 2. The percentage of fatalities resulting from accidents involving at least one driver impaired by alcohol (Data: Vis et al., Eds, 2007)

Based on this comparison, it is becoming evident, that the empirical comparison of currently available performance data against legal BAC limit does not provide a clear answer on the effectiveness of the BAC zero policy, despite the fact, that zero BAC limit countries likely show a better performance compared to other countries. Additional analysis is clearly needed in order to provide better understanding of the effectiveness of the zero limit.

But the problem of drink driving is not as simple as that and must be looked at from different angles. It is impossible to say that one particular angle is right. There is several factors which play important role in the prevalence of drinking and driving in road traffic. First of them is the role of the age. It is well known that young and no experienced drink-drivers are more likely being involved in motor-vehicle crashes. The question is not only the experience with driving but also the drinking alcohol experience.

Another fact is the individual and specific reactions on the usage of alcohol. Many people are not capable of driving safely after consuming even a small amount of alcohol. This fact depends on many personal predispositions and characteristics, such as gender, body weight, metabolism performance, fatigue, health, stress, work overload and many else. There are of course another human characteristics or disabilities having an impact on safe driving. Sometimes alcohol could play only substitute role - it is easy to state that the alcohol is factor, which lead to the incidence, even if the primary factors were e.g: lack of sleep (sleep defect), tiredness, stress, illnesses. But this could be also turn one way around. Last but not least, the socio-culture factors are also inconsiderable.

1.1 Alcohol in historical context

The custom to drinking alcohol has belonged to the human society for ages. Alcohol has been widely consumed since prehistorical times. People around the world use it not only for fun and relax, but also for hygienic and medical reasons, for the cleric ceremonies and for some other events in everyday life. Alcohol has existed in the prehistorically ages, but cars have not. With the new technology boom it is necessary to solve the problems connected with drinking alcohol and use of these technologies. Alcohol issues could be multiple valued depend on culture, age, attitudes, law, and so on. In some culture the use of alcohol is prohibited, while in others is spiritualized. Somewhere the alcohol is an integral part of culture, while in others it is seen as a main evil.

Alcohol – chemically ethanol, is centrally acting drug, which have a psychoactive effects. This chemically substance effects some human body functions and also behavior. Many experts judge that the alcohol diminishes driving skills at all possible level. Some of them insist that even small amount of alcohol in blood link to impaired driving; reduced attention, shorter concentration span, decreases reaction time and increasing tendencies to risky behavior.

The World Health Organization (WHO) produce regularly reports on the alcohol situation in different countries. Their data on the development of recorded adult per capita pure alcohol consumption (age 15+) suggest that the consumption had been increasing until late 1970's in most European countries and then started to stagnate or decline. This is illustrated in Figure 3, showing the evolution in alcohol consumption in Hungary and in the Netherlands.

It is believed, that the total alcohol consumption is linked with impaired driving, therefore it is of interest to look at the development of alcohol consumption in time. There is evidence about big growth of alcohol consumption between 1960th–1970th and between 1970th–1980th it was time of the socialist regime government. In 1989th was socialism tide over by the democracy – is this change the main cause for change of drinking attitudes?

Most recent trends in the zero BAC limit countries differ considerably. There has been a decrease recorded in Hungary, stagnation in the Czech Republic and Slovakia and an increase in Croatia since past 15 years. These trends are most likely related to the changes in the life style having an impact on the pattern of beverages consumed.

In general, the available data on alcohol consumption are not strongly correlated with the percentage of alcohol related road fatalities and suggest an existence of various background mechanisms directly influencing the alcohol related accident outcomes.

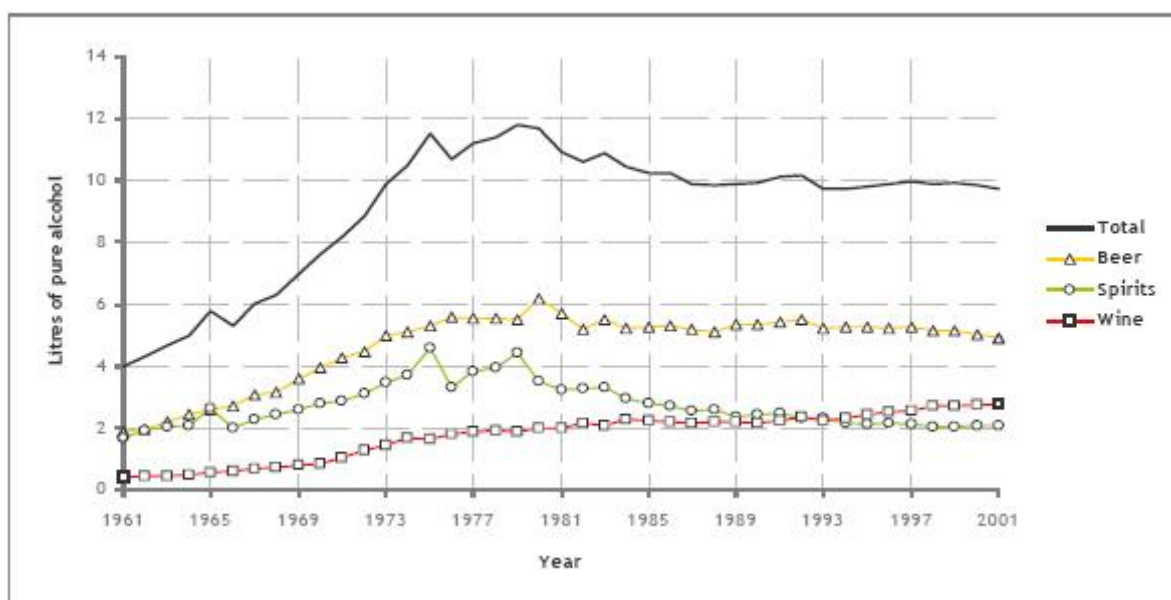
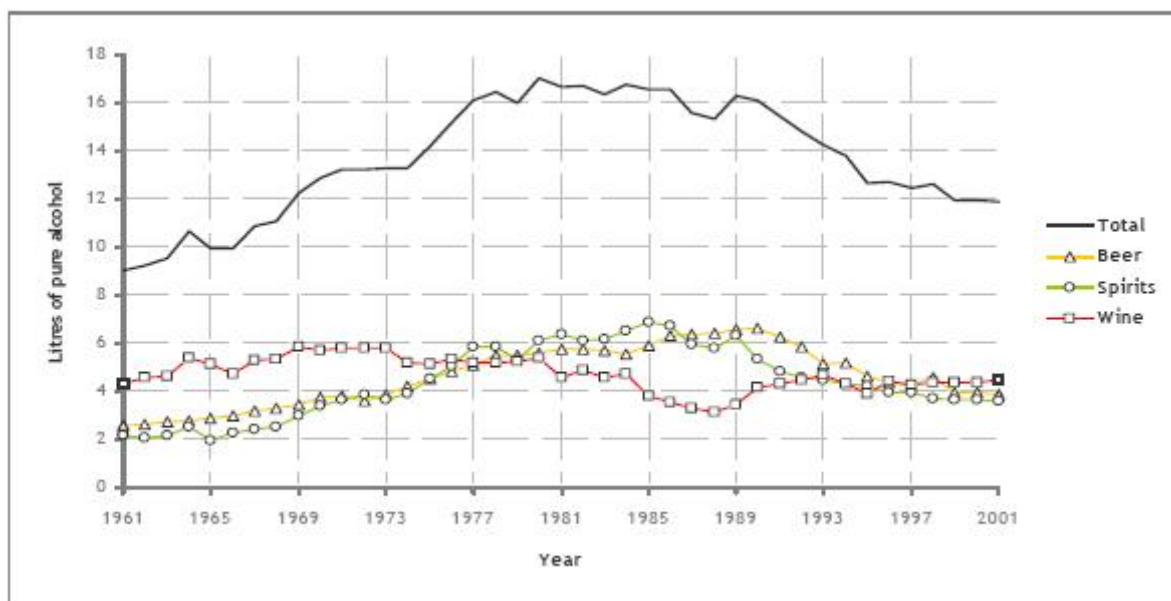


Figure 3. Development of alcohol drinking from middle of the 20th Century in Hungary and Netherland

Sources: FAO (Food and Agriculture Organization of the United Nations), *World Drink Trends 2003* and OECD (2004)

1.2 BAC limit setting

Positions of national authorities towards BAC limit vary considerably. There are countries with strict prohibition of driving under any influence of alcohol, but there are also some others with relatively high permitted Blood Alcohol Concentration (BAC) for drivers. There is wide discussion about right (or ideal) size of the BAC limit. Some experts prefer the lower or zero limit. An often-cited argument of those preferring the zero limit is that it delivers a clear

message to the wide public: "Never drink before driving". In contrast to any other limit, it provides a simple and unique guideline to drivers.

The reasons for preferring and maintaining non-zero limit are different. In France, there is a long-history culture for drinking wine accompanying meals and the current limit is judged as appropriate by both public and policy makers. In the United Kingdom there is high limit 0.08 % and there is a lot of initiatives for lowering the limit. The Alcohol Concern (AC) which is monitored in the drink-driving accidents with a high precision, is an important issue in the UK. Fact sheets published regularly by Alcohol Concern inform about context of drink-driving, consequences of this behavior and about all other connected issue. Generally AC recommends the lowering of BAC limit, introducing of random breath testing, extended public education campaigns (especially targeted to young drivers and cheaper soft drinks especially nearby the roads. To allow selling only soft drink and similar stuff on the petrol station is also recommended measure. The Alcohol Concern is not only organization which is involved in alcohol (and drink drive) issues. There are more subjects involved in this area in Europe – for example European Transport Safety Council (ETSC), International Center for Alcohol Policies (ICAP) or European Road Safety Observatory (ERSO).

A second issue is the question of zero versus 0.2 g/l. In Europe the tendency has been to adopt 0.2 g/l as the alcohol limit. This is based on the relatively low risk below 0.2 g/l, the high chance of false positive results in tests, and concern regarding the withdrawal of enforcement capacity from higher risk categories (i.e., above 0.2 g/l; e.g., . To place these European policies in perspective, one should bear in mind that alcohol limits *for all drivers* differ between countries, ranging from zero in Sweden to 0.8 g/l in the United Kingdom. Many countries employ 0.5 g/l, which is the maximum recommended by the ECMT ministers.

In Europe there is strong public support for tough alcohol measures, as could be concluded from the responses to the SARTRE 3 questionnaire (2004). SARTRE is the acronym "Social Attitudes to Road Traffic Risk in Europe." This questionnaire was regularly administered in the EU countries and deals with driver opinions, preferences and self-reported behavior. The results show that an overwhelming majority of the 24,000 drivers interviewed (88%) would like to have more severe penalties for drunk drivers in their country, and the differences on this subject between the EU member states were small. Of all the drivers, 45% are of the opinion that there should be a BAC limit of 0 g/l. On protective restrictions with respect to alcohol use by novices, even more Europeans are in favor of lower limits; 82% of drivers from all countries in the SARTRE project are 'very' or 'fairly' in favor of a BAC limit of 0 g/l for novice drivers.

There are more interesting issues in the discussion regarding the zero limit countries. One of them could be the fact that the lower limit has been mainly implemented in the post-communistic countries or in countries with more "complicated" history (like Croatia). Generally the tendency for the lower limit can be observed in the countries from so called Eastern Europe. Besides the countries described in this study, zero limit can be found in Romania and Ukraine and very low limit (around 0.02) in Albania, Estonia, Latvia, Poland and Russia.

In contrary, the countries with higher limit are mainly situated in western part of Europe. These countries are Liechtenstein, Ireland, Malta and The United Kingdom, which have the legal limit 0.08%. The third and largest group are the countries with the limit 0.05% for example Belgium, Denmark, Italy, Austria, Bulgaria and other. The Scandinavian countries Sweden and Norway, which have lower limit 0.02%, are special case. The main reason for such special limit depends not only on accidents rates or on the other quantitative measurements but on the wooliness of more social-economic and cultural aspects of concrete countries (societies).

A few European countries have two or more different limits depending on drivers experience and type of the vehicle. The young, not experienced, or professional drivers (public and freight transport drivers) have a lower limit than the rest of the drivers – older and more experienced. For example there is the 0.01 % limit for a drivers who held a license for less than 2 years and for drivers of vehicles over 7.5 tones in Austria. Generally the lower limit is for the younger and not experienced drivers and for professional drivers of public and freight transport.

2 METHOD

The drift was: “based a study on detailed description of accident situation” in four marked countries. The questionnaires for investigating states were prepared (see annex I.). The relevant organizations and institutes were contacted in autumn 2007 - the Police Presidium in Slovakia and The Czech Republic; The Ministry of Interior, Hrvatski Autoclub and The Faculty of Transport in Zagreb in Croatia. The data from Hungary, were gained from former research studies.

There was an inconsistency in the use of units of Blood Alcohol Concentration. In many texts (as well as in answers from investigated counties) different units were used: % or ‰; g/kg , g/l etc. were used. It appears that the g/l definition is the most widely used in Europe together with the percentage (or permille) definition. Given the fact that the specific gravity of blood is close to 1, the numerical value of BAC measured as mass per volume and that of BAC measured as mass per mass do not differ to any consequential degree than the placement of the decimal point. For example, 1 g/l is equivalent to 0.94 g/kg, what corresponds to 0.094% or 0.0094 ‰. The percentage unit was preferred in this study, but the g/l was used as well.

The similar problem occurred with the accidents data (fatalities within 24 hours or 30 days). As base was in this study used rules same as in IRTAD database for minimize such troubles.

We first look at country specific background information relevant to drink driving (Chapter 3 and 4) and then look at alcohol relevant accident statistics (Chapter 5), while trying to establish a relationship between the BAC limit related policies and accident outcomes.

3 ZERO LIMIT COUNTRIES

3.1 Zero limit background information

In Croatia, in The Czech Republic and in Hungary as well in Slovakia there is a special rule about drink-drive: the driver is not allowed to use alcohol or other drugs when driving and is not allowed to drive a car under the influences of alcohol or any other drug. In Croatia, such a law was implemented in April 2004, so this offers a special possibility to compare accidents data before and after introduction of that zero limit law.

The zero limit was introduced in 1929 in Hungary, in 1953 in The Czech Republic and Slovakia and only recently in Croatia. Despite the comprehensive efforts to limit the blood alcohol at a higher level, the limit has never been changed and the use of alcohol prior to driving is forbidden. The motivation leading to its introduction at this time is no very clear. The introducing of such limit could have sprung from certain socio-culture realities and also from the historical context of these countries.

Qualitative evidences play the important role too in drink-driving issues. The reasons linked to the implementing the zero limit could be very different and not only quantitative oriented. They are also based on socio-historical development of the whole culture. Peculiar case is the Croatia the zero BAC limit was introduced here in August 2004. The main reason for adoption of such limit was to develop a habit among drivers not to drive a vehicle if they have consumed an alcohol, all with a view to increase the overall level of traffic safety.

3.2 Public attitudes and opinion

Public opinion is very important and interesting issue as they likely shapes decisions of policy makers. Needless to say that media have a huge potential in these days. There is a big potential for creating a social climate in society and for changing the opinions and attitudes. Through the television, internet, billboards as well as campaigns it is possible to change stances in society. The problem could be in financial resources of such public activities (state, lobby organizations, non- profit organizations...).

Campaigns may play an important role in shaping attitudes towards alcohol related legislation and its enforcement. There is no evidence about alcohol campaign in Hungary. In the Czech Republic the campaign called "Alcohol do not know, how to drive your car" ("Alkohol vaše auto řídí neumí") arranged by the Czech Car Association, has been running recently. In Slovakia, the Ministry of Transport ran a dedicated campaign in autumn 2007. The campaign was aimed on use of alcohol. There were also some billboards with visual and linguistic part installed in the Czech Republic.

One of the main problems regarding the effectiveness of campaigns could be the omnipresent advertisement. Alcohol could also be seen as a special status symbol – similar to cars - which give their user a special abilities (image, youth). Some advertisement could associate drinking

of some particular alcohol beverages with special life style or with the higher societal status. Everyone in advertisement look young, vital, and beautiful - it could support the view: when I will drink an alcohol (or special kind of it) I will be cool and perfect (able to do anything). Communicating such a message could be very dangerous - especially for young people.

Car's advertisement is based on the similar principles. What is sold through an advertisement - not products (car or alcohol) but the special life style, image, social status and sense of "I am a higher class, I am unique, I am the best one, with this car (when I drink this spirits)."

The public opinion is especially important when a new law is being introduced. This was obvious for Croatia policy makers, who with their "*National Road Traffic Safety Program of the Republic of Croatia for 2006-2010*" have been aiming at the acceptance of the new arrangements, especially those regarding the decline of the amount of cases of drink – driving. A special debate had taken part in Croatia before the Act has been adopted. The public opinion on the introducing of such a limit was considerable divided. This fact is no surprising. Every new arrangement is followed by the many different contradictory opinions. The significant example is known from the United Kingdom, where the congestion fee has been implemented a few years ago. There were a lot of opponents and huge discussion against the implementation of the whole scheme. The project leader, London mayor Ken Livingstone was relentless and despite of all opposition the scheme has been realized and is considered to be very successful and many cities worldwide are looking at London example as a significant inspiration. A huge discussion with public took place before the introduction of the arrangement. The discussion took place not only with public but also with all relevant participants and stakeholders – including car clubs, producers, public transport and other involved stakeholders. There was implemented more arrangements before introducing a law (reinforced a public transport, discussions between people and stakeholders, available were a information materials).

Sartre III study looked at the public support for a zero BAC limit and concluded that there is a strong support for a ban of alcohol when driving in countries with zero BAC limit Slovakia (87%), Hungary (73%); while only less than 25% of the Danish and Portuguese drivers favour an alcohol ban when driving. It is interesting to note that especially eastern countries, where the BAC limit is usually very low or even 0.0 g/l, are in favour of no alcohol when driving, as partially confirmed by the tendency of correlation ($r = 0.15$) between the lower limit and the preference for a lower limit. (Figure 4)

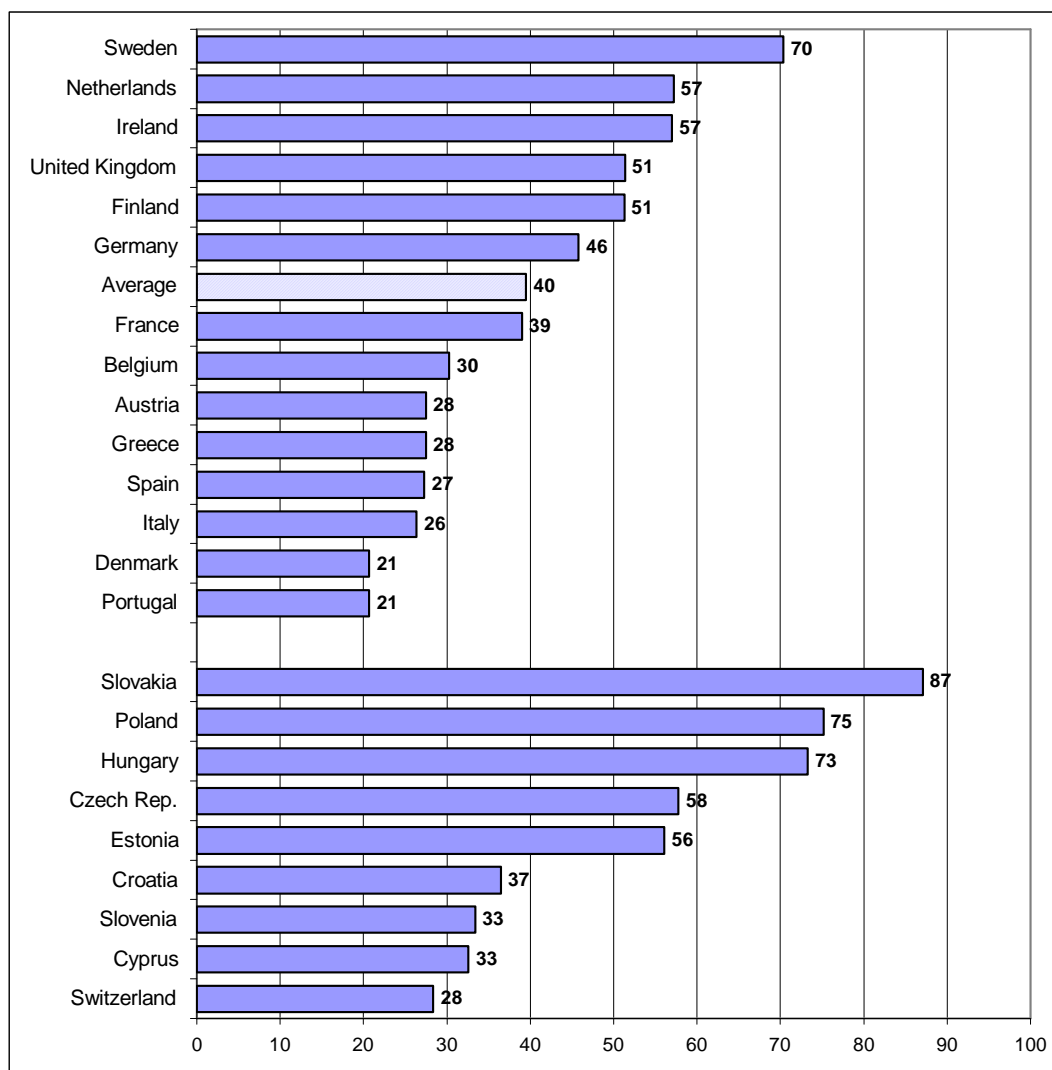


Figure 4. Opinions about what the legal limit should be. Do you think that drivers should be allowed to drink no alcohol at all, in % (source: Sartre III (Cauzard et al., 2005))

3.3 General versus specific group limit

The drink-driving issue is little bit ambiguous in some way. It is not clear whether is possible to unified one kind of universal limit for so many different countries. But In contrary, the heterogeneous limits among many European countries makes sometimes a problem and need of European law unification is clear. There are a few tendencies regarding the value of the BAC limit. Some initiatives agree with the lowering limit to minimum, another wants to increase the limit. E.g., there were some unsuccessful initiatives for increasing the limit in Hungary at the end of 90's.

Despite the campaign called: "Alcohol does not know, how to drive your car" (Alkohol Vaše auto řídit neumí) arranged by the Car Association of the Czech Republic, the same organization is in favour with the increase of the limit (but no more than 0.05%). There is consensus

about the idea that drink driving is dangerous, but the zero limit does not seem to be entirely favourable. The main reason for increasing the limit is clear and well-advised : BAC to 0.02% is not clinically significant and no medical institutions confirm the need to pay penalties when the blood test result is higher than zero but no more then 0.02%. The reason is elementary – up to the 0.02% alcohol could be naturally involved in human body – and it depends on other human body characteristics - pharmaceuticals use, illness, food, metabolism and others. Such testing only brings extra costs no fruitfully findings. The main idea is to deal with real and heavy cases and not with many irrelevant (secondary) ones.

The campaigns should be carried out not only by the non-state organizations but also by the state. National strategic plans also play important role. In Slovakia, the police presidium aims to implement the small legal limit (between 0.01-0.048). The enforcement for such arrangement is also the need for the unification through the European Union. For example there is a national plan for enforcement traffic safety in Slovakia, which is aim to declining amount of alcohol related accidents. The similar purpose is included in Croatian “*National Road Traffic Safety Program of the Republic of Croatia for 2006-2010*”.

4 ENFORCEMENT OF BAC LIMIT

There is the public opinion, discussion and legal law system on one side and practices on the other site. The implementation of any BAC limit brings along some additional requirements. One of them is a need to enforce the law through the detection of drink drivers. The research show that drink-driving enforcement may reduce fatal accidents by 9% (Elvik and Vaa, 2004, pp. 977 – 983). There are possibilities to do random tests in investigated countries, which are usually used especially in critical day hours and on the special places (around discos, pubs,...). The same situation is with the obligatory testing in case of accident. There are a few methods how to control the BAC. The easiest and preferred way is a simple breath testing. Second way is blood testing preferred in cases when the persecution is expected and when it is impossible to perform a breath test. If no serious offence occur, the breath test is considered as sufficient all four countries. In contrary when breath test is positive, police may impose medical blood test. The blood test is obligatory when an accident occur and the breath test is positive, or when it is impossible to do a breath test (injuries, death,..). That is because a liability needs to be usually established. Sometimes drivers refuse to undergo a test. In such cases, the person is regarded as positive in the Czech Republic. In Croatia, the driver who refuses to undergo breath test is imposed a fine and a ban on driving a motor vehicle during the period of months.

4.1 Random testing

In the **Czech Republic and Slovakia**, random stopping and testing of drivers by the police is allowed by law. The driving licence of high-risk offenders can be withdraw by the police and the police can prevent the driver who caused a road accident to drive on if found drunken. All drivers involved in a road accident with injury or fatality are tested for the presence of alcohol by means of breath testing. If the result of the test is positive, the driver is obliged to pass a blood test to assess the exact level of the alcohol in blood. The alcohol levels of killed road users are usually available from autopsy. It is forbidden for the drunken offender to drive until the result of the blood test is known, but his driving licence cannot be taken away. That should be changed again through the new amendment of the Road Traffic Act 361 allowing the withdrawal of driving licences under serious circumstances. Together with these legislative changes, wide-ranging discussion took place about the possibility to increase the positive alcohol level from 0.00% to 0.02%.

The police regularly perform random screen-breath testing, especially during the weekend nights. Although there is the fine payment list, it does not have any obligatory status and the rates are only recommended, which means that it is up to the policeman to gauge the fine in particular situation. The policeman should ideally consider the following variables: the actual level of blood-alcohol, awareness of the driver, or the level of risk. However, there is an upper limit for the fine defined by the law. If the driver is caught drinking and driving, he is disqualified from driving at the moment and has to leave the car on the spot. Once the driver pays his fine, he cannot be threatened anymore by the police for committing an offence. If the fine is not paid on the spot, the case is forwarded to the police administration, which is sup-

posed to conduct the legal proceeding against the driver. If a one year pass the offence "exceptio temporis" can be alleged. It is believed that underreporting of alcohol related road accidents is significantly higher in less populated areas as the result of the corruptive or friendly atmosphere. Lack of further secondary limits for blood-alcohol level that distinguish the level of offence, together with loose interim guidelines on the fine amount, inevitably lead to an increase in corruptive practices.

Czech Traffic Police is nowadays equipped with about 300 electrical instruments by two manufacturers for measuring the breath-alcohol: Drager and Lion. The manual Lion alcohol-testers (e.g. Alcometr SB-400) or Drager (Alcotest-7410) equipped with printer can be mentioned as typical examples.

Presence of alcohol in the body of drivers is controlled during the police random checks also in **Hungary**. In the first step the police use electronic breathalyser, the Lion Alcometer SD-400 or the traditional breathalyser operating with a chemical agent (SPIRATESZT). Before 1995 the police were not equipped with electric instruments for measuring of the breath-alcohol. The manual Lion alcohol-testers, as well as the SERES ETHYLOMETER 679-TH, and the SIEMENS ALCOMAT type, standardised, electric breath-alcohol measuring devices with fix location were purchased in the second half of 1995. If 0.1-0.5 mg/l content is measured with the Lion device and the offender admitted the consumption of alcohol in a written form no further analysis is needed; an offence report has to be laid against the driver. If the measured content is 0.51 mg/l or more, the driver is taken to the police station equipped with standardised electric breath-alcohol measuring device where a breath sample must be produced.

Two subsequent measurements with 15 minutes difference must be performed with the standardised electric breath-alcohol measuring device, so that the first measurement should be taken within 30 minutes from the time when drinking and driving has been found. If the time between the first breathalysing made on the spot and the measurement carried out with the standardised electric breath-alcohol measuring device is more than 30 minutes, the driver has to be taken for a blood-test. The standardised electronic breath-alcohol measuring device prints the result, which has to be attached to the report.

For the Czech Republic, the number of screening breath test performed by the Police is about 410.000 a year, but the exact number is available only for the year 2002. In Hungary was the number of performed breath tests in 2003 more than twice as high as it was in 1999. Comparison of the proportion of positive tests in all three countries gives interesting results as the proportion of positive tests in Slovenia is about four to five times higher than in the Czech Republic and Hungary when analysing the year of 2002. Comparing Slovenia and Hungary in other analysed years the differences in these numbers are even higher. However, the proportion of positive tests in Hungary stays the same over the years, but in Slovenia the proportion of positive tests decreased significantly between 1999 and 2003. It is necessary to consider the fact that the data on alcohol tests from the include only the alcohol tests performed in random police checks where the police performs alcohol tests on drivers suspected of driving under the influence of alcohol, which means that these drivers have higher chance that their alcohol test is positive in comparison to the total driving population. Police breath testing ac-

tions can also be announced in advance, with dates and locations of actions communicated publicly via different media.

The number of performed alcohol tests is not the only important issue. The efficiency of the testing depends also the time and place of test performing. It is more probable to detect drink driving during night hours on the special places (around discos and pubs). In Hungary, the frequency of checking is higher during evening and night hours. In Slovakia, the alcohol check is an integral part of general traffic control, but additionally – there are some special alcohol controls in time and places, with higher probability of drink-drive. The similar situation is also in Croatia, where “the actions related to the testing of the drivers’ alcohol level are concentrated to places and times where it is most probable to find the drivers driving a vehicle in road traffic under the influence of alcohol, while the testing of the traffic users’ alcohol level is carried out without any action plan, on a daily basis while conducting regular traffic control.” [source Ministry of Interior, Croatia]

The knowledge about the level of enforcement activities is rather limited in investigated countries. In Hungary, the relevant data exist only up to 2005, when the number of performed test was 819.520 (4,3% of tests was positive). In the Czech Republic, there is no complete database with all performed tests. Similar situation is in Slovakia. There are no data about this issue in Croatia. Because of these gaps in data it was irrelevant to do a cost benefit analysis, so only a test price enumeration in zero limit countries was done.

The SUNflower+6 report compared the number of screening tests performed each year in three Central European countries. The number was highest in Hungary with 1,101,010 tests, followed by the Czech Republic (data for 2002) with 410,500 tests and Slovenia with (250,000 tests). However, it should be considered that reporting on performed screening tests differ from one country to another and that the level of drinking and driving underreporting in each country is unknown.

Table 2. Alcohol screening tests in Central European countries (2003)

	Czech Republic	Hungary	Slovenia
Screening tests per year	410,500 (2002)	1,101,010	247,191
Per passenger car	1:9 (2002)	1:2.5	1:3.6
Positive in accident	9,076	2,450	3,940
Per passenger car	1:389	1:1,134	1:226
Over limit	21.132	34,210	34,603
Per passenger car	1:167	1:81	1:26

When comparing the numbers of all screening tests with the number of passenger cars in each of the three countries, the results show that in Hungary one screening test is carried out per 2.5 passenger cars yearly. Slovenia follows with 1 screening test per 3.6 passenger cars and the Czech Republic with 1 screening test per 9 passenger cars. When comparing accident positive screening tests, Slovenia has the highest number of positive tests per a passenger car,

followed by the Czech Republic and Hungary. Slovenia has almost five times and the Czech Republic has almost three times higher occurrences of positive tests in accidents per a passenger car than Hungary. Comparing the numbers of breath tests where drivers were over the limit shows the highest number for Slovenia, followed by Hungary and the Czech Republic. An impression resulting from all these data is that the highest number of drunken drivers is to be found on Slovenian roads, where, in other words, the problem of drinking and driving is the most serious among the three Central European countries (Eksler et al., 2005).

The overall costs of random testing include the administrative work, police work and consumables. Only some parts of those charges are available. In Hungary, the price of one random breath test is estimated to be 8 Euro (breath test at the police station is estimated to be 30-40 Euro and the blood test costs 140 Euro). In the Czech Republic, the price of random screening breath test is one Euro and the blood test costs around 20 Euro (Man-hours excluded). The similar situation is in Slovakia.

4.2 Sanctions and other issues related to the positive test cases

The positive testing is followed with specific arrangements. The police can ban driver from driving in Croatia, in the Czech republic and in Hungary. The confiscation of the keys or use other means to obstruct a driving is also in police competence. Additionally there is a possibility to remove the driving license for six or more months. Detailed information about fines and BAC are enclosed in Table 3.

Table 3. Sanction for drink driving

Country/ BAC	Less than 0.05%	Between 0.08%-0.05%	Over 0.08%	Use equipment
Hungary		Fine: 400 Euro; Penalty points: 3	Fine: depends on court decision; Penalty points: 7	Lion Alcometer; SERES Ethylmeter 679 TH; Siemens Alcomat; Spirates indicator tube
Czech Republic	Remove driving license 1 year; Penalty points: 3	Fine: 700 Euro; remove driving license 1-2 years; penalty points: 6	Fine: 900-1800 Euro; remove driving license 2 years; penalty points: 7	Dräger
Slovakia				Alcometer Dräger; Alcosenzor CM IV
Croatia				

A failure of law is followed by a sanction. The character of punishment depends generally on how much BAC level was found and is different in all investigating countries. Exceeding 0.08% BAC is considered to be a traffic offence in Hungary, in the Czech Republic and in Slovakia. Croatia has sharper level – the offence is over the 0.15 g/l.

In case of exceeding the level of 0.08% in Hungary, seven penalty points are the result and the fee penalty size depends on court decision; in the Czech Republic there is the possibility to receive seven penalty points, one year prison, remove drive license for two years or fine between 900-2000 Euro. In case the BAC is between 0.05% to 0.08% follow sanction in Hungary: fine 400 Euro and three penalty points; in Czech Republic: fine 700 Euro, remove drive license 1-2 years or six penalty points. In Czech republic is also three penalty points for 0.03% BAC or remove drive license for one year.

4.3 Procedures in the case of accident

When accident happened the test for alcohol presence is obligatory in all four investigated countries. When it is possible the test is performed at the scene of accident or in hospital – in case of injuries.

In case of a road accident, the police in the **Czech republic** always perform evidential alcohol breath test of all road accident participants. This test is compulsory by law and in case of objections; a second, more precise blood-test is performed in the nearest medical centre with a minimum delay. If the delay between the accident and the test is too long, the doctor computes the actual value of blood-alcohol at the moment of accident with the use of basic characteristics of the driver.

The police procedure in **Hungary** must involve blood taking and a urine sample taken at the same time, if possible, in cases when the driver refuses to be tested with the breathalyser, contests the measured results and asks for blood-alcohol test, is unfit for blowing the breathalyser, has some drug (e.g. medicine, drug with narcotic effect) in the organism likely to impair his sound judgement or disposing capacity, can be suspected of causing a road accident with injury healing longer than 8 days or with the involvement of more severe consequences, and on the basis of the results shown by the breathalyser and the external perceivable signs of drinking and driving. Blood taking and a urine sample must be also taken in case the driver is suspected to refuse to provide help on accident spot, if he is suspected of the crime of hit and run, or of doing any other illegal act combined with leaving the scene of the accident, and on the basis of the results shown by the breathalyser and the external perceivable signs of drinking and driving within 30 minutes from the beginning of the police enforcement act (due to any reasons) in case the test cannot be carried out with a standardised electronic breath-alcohol measuring device.

In **Croatia** the police officer investigating a traffic accident in which material damage has been caused shall subject the persons directly involved in the accident to a test performed by means of appropriate equipment calibrated according to relevant regulations on measures and metrological conditions and used to ascertain a concentration of alcohol or narcotic drugs in

the body. If the test shows that a driver directly involved in the accident has a concentration of alcohol or narcotic drugs in the body, but he or she denies it, the police officer shall take him or her to a health institution for medical examination and collection of blood and urine samples for analysis.

If there are persons injured in a traffic accident, the investigating police officer shall subject the persons directly involved in the accident to a test performed as described in the previous paragraph. If the test shows that drivers directly involved in the accident have a concentration of alcohol or narcotic drugs in the body, the police officer shall order a medical examination and taking of blood and urine samples for analysis.

If there are fatalities in a traffic accident, the investigating police officer shall order that blood and urine samples be taken from the drivers directly involved in the accident to ascertain if they have a concentration of alcohol or narcotic drugs in the body, and from other persons involved in the accident after a concentration of alcohol or narcotic drugs in the body has been ascertained by means of appropriate equipment or a medical examination.

The persons involved in traffic accidents must not, from the moment of the occurrence of a traffic accident until the testing has been carried out on them, take alcoholic drinks, narcotic drugs or medicinal drugs indicated as forbidden for use before or during a drive.

There are two possibilities how to punish the alcohol offence - "on the streets" by fees and penalty points or by more administrative way, in the court. The method of punishment depends mainly on the amount of alcohol. Additionally arrangements are advanced programs for drink-driving offenders. Drink driven drivers in Hungary must pass a special training, which is finished by an exam. In another European countries the use of an Alcolocks program (special equipment installed in car which disallows the drink-driver to start car) is discussed. The discussion about alcolocks is not presented in any zero limit countries.

4.4 Measuring tolerance

The clinically significant evidence of BAC is when the BAC level is more then 0.02% BAC, under this level could be a natural state of organism or the result of medical drugs use. This is also the standpoint of the National Institute of Forensic Medicine, alcohol consumption cannot be proved if the blood alcohol content does not exceed 0.02%. In principle, the allowed blood alcohol level is 0.00%, but in practice it is 0.02%. No responsibility for drinking and driving can be called to if the driver refuses to admit the fact of alcohol consumption and blood alcohol content does not exceed the value of 0.02%. This fact could a reason that in Hungary the BAC under 0.02% can not be proved and in the Czech Republic there is practically no fine, when the blood test results under the 0.02%. Similarly in Slovakia, to be stated as a positive test, the BAC should be over 0.015% and in Croatia it must be above 0.01%.

4.5 Special provision for young drivers

As mentioned earlier, special provisions have been applied for young drivers in some countries. However, in investigated countries, only in Croatia such law is adopted. This topic deals not only with the experience with driving, but also with the experience with drinking and additionally combination of these two factors. In Croatia, there are special provisions for this group of road users. Special measures refer to maximum vehicle power restrictions, maximum speed restrictions and restrictions regarding the time they are allowed to operated vehicles on the road. [source: Ministry of Interior, Croatia]

5 ACCIDENTS OUTCOMES

The use of car has soon become a symbol of democracy in many Central European countries. Numbers of have been increasing considerably over the past two decades, alongside with the number of issued driving licenses. This all potentially leads to a higher presence of drunk drivers in road traffic.

Is there a significant evidence regarding the usefulness and efficiency of the lower limit of BAC on accident reduction? There is some evidence from the accident data, because it is possible to compare them on the time span (in case of one country) as well among more countries. The target group of accidents is the alcohol related ones in four evaluated countries and the rate of accidents with injuries (using also data from Luxembourg and United Kingdom - source: IRTAD).

There is some evidence about significant role of alcohol in accidents occurrence. One of seven people killed on roads die in drink-drive accidents in United Kingdom and one of twenty injuries is result of drink-drive accidents (source: UK statistics, Alcohol concern texts).

The rates of alcohol related accidents per 1,000 inhabitants are shown in Figure 5. A little paradox is that country with the highest fatal accident rate has the smallest rate of alcohol related accidents (the case of the Czech Republic). In contrary, in Hungary there is smaller rate of fatal accidents but the rate of alcohol related accidents is higher than in the Czech Republic. These two facts can well be connected with data on the consumption of alcohol showing, for Hungary, the highest value among investigated countries.

Very interesting situation can be seen in Croatia - although the total number of fatal accidents is declining, the amount of alcohol related accidents is increasing after the implementation of zero BAC limit law.

The role of age and relevant experiences on the drink-driving accidents is very often mentioned in literature. The fact that the younger drivers have the higher accidents probability, when driving under an influence of alcohol is often mentioned together with the importance of the experience. It is not only experience with driving but also with drinking of alcohol. Unfortunately the only data available are from Croatia, where the rate of young drivers involved in fatal accidents is significant.

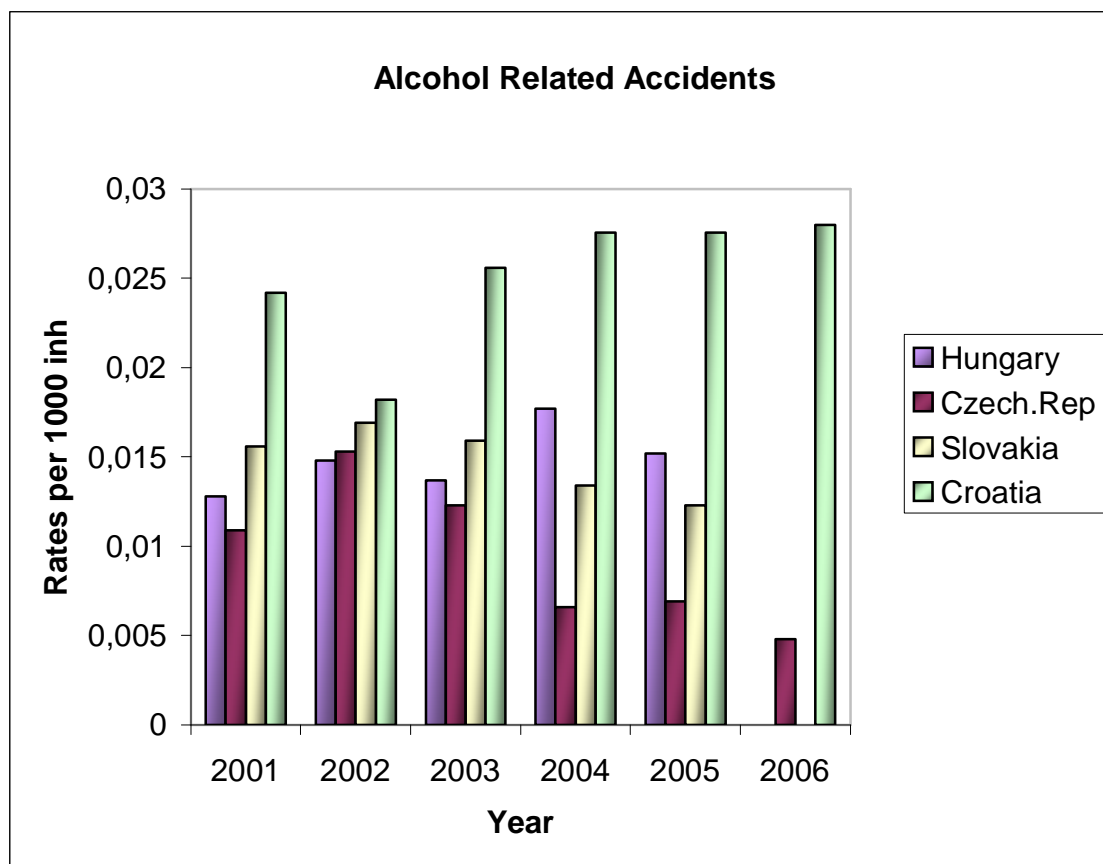


Figure 5. The amount is between 0.5-3 alcohol related accidents per one hundred thousand inhabitants

An interesting example is provided in Figure 6, which compares injury rates from accident with the presence of alcohol among zero limit countries and two countries with 0.08% (Luxembourg and United Kingdom). In Figure 6 we can see the difference between the zero limit country, and countries with the highest limit – Luxembourg and United Kingdom. The findings from this Figure 6 suggest that not only the legal provision play the role in alcohol accident outcomes.

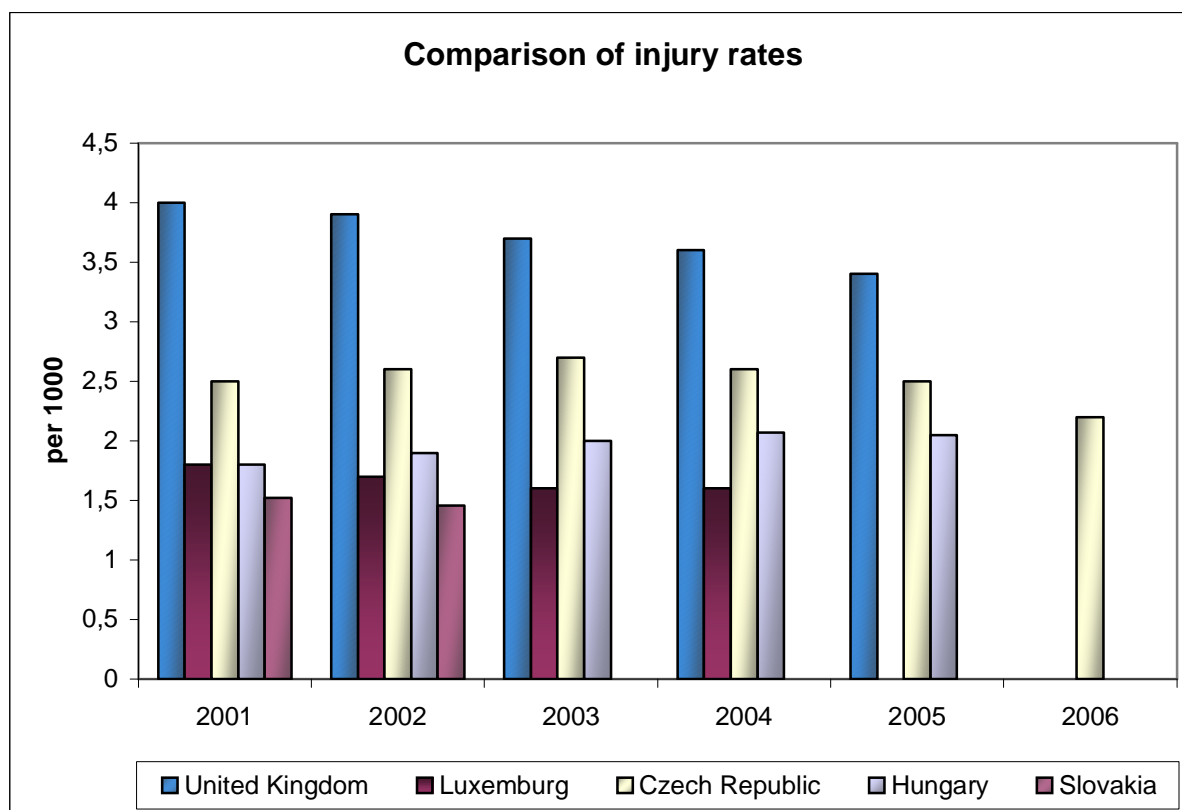


Figure 6. Comparison between zero limit countries and countries with higher limit

The United Kingdom has the highest injury - BAC limit is 0.08% - the great news for supporter of low limit. The message delivered from the UK example seems to be straightforward: the higher limit is associated with higher alcohol injury accident rates. But the case of Luxemburg leads to a contradictory conclusion. In the long term, the lowest amount of injuries is in Luxembourg – as well the country with the 0.08% BAC limit. How it is possible? One explanation might be driving distance. If drivers drive significantly less in Luxembourg than in other countries as for example in UK. Another explanation could be the level of enforcement and the chance of being controlled (much higher in Luxembourg than in UK. The quantitative data and theory is not enough. This problematic is not only about quantitative data but also socio-culture specifics of every country and also about historical development (evolution) plays an important role. Of course it is easier to sample and analyze the quantitative data than to make a complete analysis. For the qualitative estimation the special methodology will be necessarily (maybe different for each country) and also to find out the way, how to compare the different results from evaluated countries.

The BAC of drivers responsible for an accident can give some idea about the amount of DWI and of the respect of the BAC legislation in force. The comparison of two countries with similar social background but different BAC limits, the Czech Republic and Slovenia unveils that the mean alcohol level recorded by the culprit of accident is likely identical (1,14 g/l), but the distributions are fairly different, with a rather symmetrical normal distribution curve for Slo-

venia and non-central asymmetrical distribution with a 50% percentile situated in its left part, for the Czech Republic.

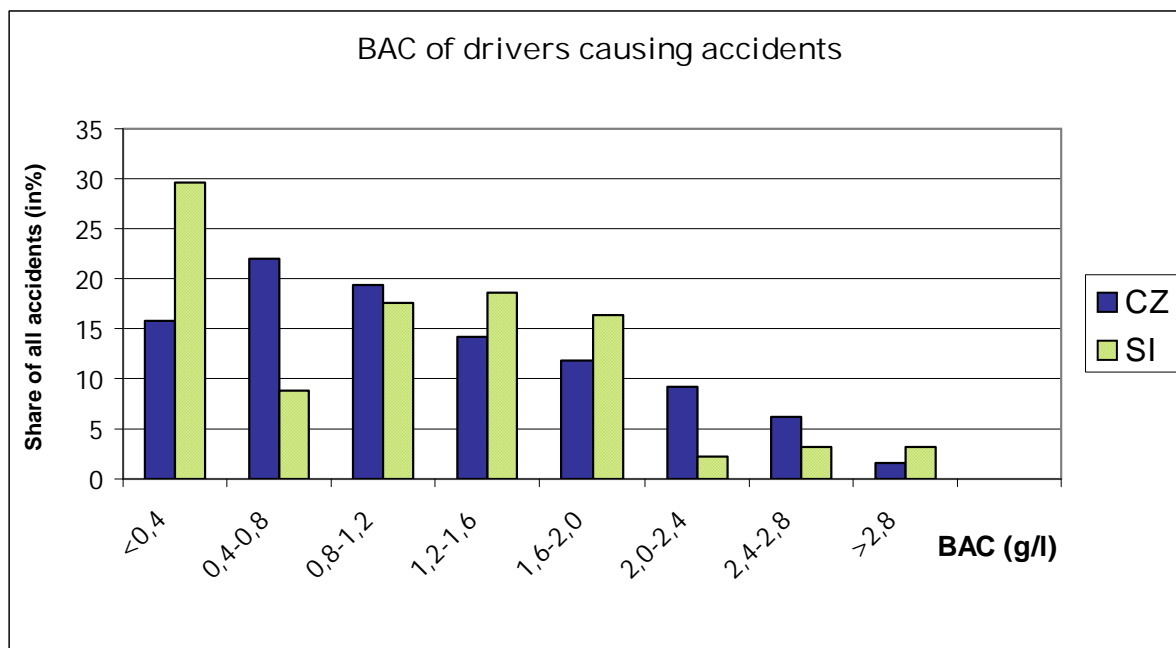


Figure 7. Distribution of BAC content recorded by accident culprit in Czech Republic and Slovenia (source: Police presidium of the Czech Republic, Traffic Police Directorate of Slovenia)

These distribution shape difference suggest that Slovenian drivers with a low BAC get much more often involved in a crash compared to their Czech counterparts (Figure 7). Moreover, a large proportion of them drove with a BAC over g/l. Straightforward conclusions could be that a non-zero limit pushes to drive with a very low BAC low and increases proportion of drivers with an extremely high BAC.

6 CONCLUSIONS

The important questions are: Is useful and effective to have such a strict limit – zero of BAC? How does it influence the development of accidents data? How is it acceptable by the drivers?

The issue of drink driving is a very complex one. It does not depend only on some formal and administrative democratic principles but primarily on human mind (experiences, attitude and habits which was created inside totalitarian regime). It is very difficult to generalize these hypothesis, because they on individual personal characteristics.

There is a clear advantage of the zero legal limit. It delivers a clear message: "Never drive after drinking", whereas the message of any limit interpreted in different ways. This, in theory, results in more responsible behaviour in respect to drink driving.

Accident statistics in member states do not allow nowadays a reliable and precise comparison of performance of countries in terms of alcohol related accidents/fatalities. In depth studies often point towards underreporting. Without reliable data in this area, it is difficult to draw any sound conclusions on the effectiveness of various BAC limit policies.

Relatively good results of zero BAC countries in terms of alcohol related accidents/fatalities can be mostly attributed to:

- ◆ Social climate condemning irresponsible DWI
- ◆ High report level of alcohol accidents often including detailed information on BAC level
- ◆ Severe sanction (high fines, withdraw of driving licence)
- ◆ Generally very high acceptability of zero limit - only 12,7% are in favour of a higher BAC limit

There is an indication on the increasing level of enforcement of BAC limit in the Czech Republic and Slovakia, which together with decreasing consumption of alcohol beverages with high alcohol content could possibly lead to a further decrease in alcohol related accidents/fatalities.

Change of zero BAC limit to a non-zero one in analyzed countries may aggravate situation in these countries, where the population has always been told to do not drink alcohol prior to driving. A common maximum BAC limit applied across the EU could on the other hand deliver a clear message not giving space for discussion and self-interpretation of relevant policies. A comprehensive cost-benefit study based on high quality accident data would be prerequisite for determining the optimum BAC level in the EU.

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Croatia – Ministry of Interior – Public Relation Department

8 ANNEXES

Annex I: Factsheet questionnaire

Annex II: Standard BAC limits

Annex I. Fact sheet questionnaire

1.	What is the number of driving license holders in your country?
Hungary	3 800 000
Czech R	6 643 183 (k 12.12. 2006, MD)
Slovakia	2 816 160
Croatia	2 122 352

2.	Is there some information about population of actual drivers (i.e. of those who really drive motor vehicle, not only license holders) – number, structure by sex and age? (estimation)
Hungary	3 300 000 60% men 40% women
Czech R	n/a
Slovakia	n/a
Croatia	1 315 354 (man) 806 998 (woman)

3.	What is the average yearly exposure of a driver (km driven by a driver)?
Hungary	15 000 km/year (private section)
Czech R	8000 (2006, estimation of CDV)
Slovakia	Not included in police evidence
Croatia	n/a

4.	What is the development of number of fatal accidents?		
Hungary			
Czech R			
Slovakia	Year	Fatal accidents	IRTAD
	2001	625	614
	2002	626	610
	2003	653	
	2004	608	
	2005	600	
	2006	608	
Croatia	Year	Fatal accidents	
	2001	577	
	2002	571	
	2003	633	
	2004	540	

	2005	530
	2006	551

5.	What is the development of alcohol related fatal accidents?
Hungary	
Czech R	
Slovakia	
Croatia	

6.	What is percentage of young drivers (up to the age 24) in fatal accidents?
Hungary	
Czech R	
Slovakia	
Croatia	

7.	What is percentage of young drivers (up to the age 24) in alcohol related fatal accident?
Hungary	
Czech R	
Slovakia	
Croatia	

8.	What is the development of delicts that might indicate drink driving (i.e. escape from place of accident by originator of the accident)?																								
Hungary	<table border="1"> <thead> <tr> <th>Year</th> <th>Hit and run accidents (without personal injury)</th> <th>Fail to give assistance after traffic accidents (with personal injury)</th> </tr> </thead> <tbody> <tr> <td>2000</td> <td>830</td> <td>687</td> </tr> <tr> <td>2001</td> <td>709</td> <td>709</td> </tr> <tr> <td>2002</td> <td>810</td> <td>723</td> </tr> <tr> <td>2003</td> <td>800</td> <td>748</td> </tr> <tr> <td>2004</td> <td>838</td> <td>880</td> </tr> <tr> <td>2005</td> <td>775</td> <td>880</td> </tr> <tr> <td>2006</td> <td>635</td> <td>937</td> </tr> </tbody> </table>	Year	Hit and run accidents (without personal injury)	Fail to give assistance after traffic accidents (with personal injury)	2000	830	687	2001	709	709	2002	810	723	2003	800	748	2004	838	880	2005	775	880	2006	635	937
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Czech R	<p>Rate of escape from place of accident</p> <p>2001 – 9,3 % accidents – 2,1% fatal accidents – 3,3 % injured</p> <p>2006 – 9,3% accidents – 2,8% fatal accidents – 3,3 % injured</p>																								
Slovakia	Hit and run accidents decline in the latest year																								
Croatia	<table border="1"> <thead> <tr> <th>Year</th> <th>Hit and run accidents (without personal injury)</th> <th>Fail to give assistance after traffic accidents (with personal injury)</th> </tr> </thead> <tbody> <tr> <td>2000</td> <td>n/a</td> <td>86</td> </tr> <tr> <td>2001</td> <td>n/a</td> <td>80</td> </tr> </tbody> </table>	Year	Hit and run accidents (without personal injury)	Fail to give assistance after traffic accidents (with personal injury)	2000	n/a	86	2001	n/a	80															
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	2002	n/a	86
	2003	n/a	65
	2004	n/a	77
	2005	n/a	73
	2006	n/a	67

9.	What is estimated cost of fatal accident in your country?
Hungary	11.390.000.000
Czech R	9.663.000.000 (340.900.000 EURO)
Slovakia	The price of human life is relative and depend on more factors. In general is estimated the human life on 7 millions SK (around 200 thousand EURO)
Croatia	No date

10.	What is yearly consumption of alcohol per capita in your country?												
Hungary	<table border="1"> <thead> <tr> <th>Year</th> <th>Alcohol consumption (liter)</th> </tr> </thead> <tbody> <tr> <td>1960</td> <td>6,1 l</td> </tr> <tr> <td>1970</td> <td>9,1 l</td> </tr> <tr> <td>1980</td> <td>11,7 l</td> </tr> <tr> <td>1990</td> <td>11,1 l</td> </tr> <tr> <td>2003</td> <td>11,6 l</td> </tr> </tbody> </table>	Year	Alcohol consumption (liter)	1960	6,1 l	1970	9,1 l	1980	11,7 l	1990	11,1 l	2003	11,6 l
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	1990	11,1 l											
	2003	11,6 l											
Czech R	2005 10.2 (grain alcohol)												
Slovakia	7,8 l (grain alcohol)												
Croatia	No date												

11.	Are there some studies evaluating effectiveness of 0.0 limit of BAC in your country?
Hungary	N/a
Czech R	N/a
Slovakia	Police do not estimate effectiveness of zero limit
Croatia	N/a

History, law, enforcement, rehabilitation, other circumstances

1.	When 0.0 g/l limit of BAC was introduced?
Hungary	1948 (mentioned in Hungarian Penalty Code)
Czech R	1960 n. 141/1960 Collection Of Law
Slovakia	- NR SR n. 315/1996 driver can not use al-

	cohol and also any other drugs in time of driving, and also it is not allow to drive under influence of alcohol or other drugs
Croatia	This limit was introduced into the Croatian legal system by the Road Traffic Safety Act, which entered into force on 20 August 2004.

2.	What were the reasons and circumstances of adoption of such limit?
Hungary	N/a
Czech R	N/a
Slovakia	N/a
Croatia	The aim of introducing such a limit was to develop a habit among drivers not to drive a vehicle if they have consumed alcohol, all with a view to increasing the overall traffic safety level.

3.	Is the BAC limit 0.0 g/l supported by public?
Hungary	Population of Hungary accept 0.0 g/l
Czech R	No information
Slovakia	N/a
Croatia	During the public debate before the said Act was adopted, as well as during its implementation, the public opinion about the justifiability of introducing such a limit was considerably divided, and there have always been some initiatives by certain interest groups in the public, as well as in the politics, to raise the blood alcohol concentration permitted while driving a vehicle on the road. This limit was promoted within regular advertising campaigns, financed by the Ministry of the Interior, with a view to promoting safe driving.

4.	Are there some supporting campaigns, courses etc.?
Hungary	N/a
Czech R	Spaces for research
Slovakia	Ministry of Transport SR did campaign about use of alcohol (June 2007)
Croatia	There is no special strategic plan only for the BAC limit enforcement, but there is a National Road Traffic Safety Programme of the Republic of Croatia for 2006-2010, adopted by the Government of

	the Republic of Croatia on 23 February 2006. Within the framework of this Programme a need has been established to implement preventive and repressive measures in a systematic way aiming at decreasing the number of drivers driving under the influence of alcohol.
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5.	Or, contrariwise, are there some initiatives for increasing the limit?
Hungary	At the end of 90 th – some initiative for increasing (to 0.5 g/l)
Czech R	Czech Carclub want to increase the limit at 0.2g/l, no more then 0.5g/l (0.2 g/l no clinically significant)
Slovakia	Police Presidium and Health Ministry attempts to make legal small limit (between 0.1 mg/l – 0.48 mg/l)
Croatia	N/a

6.	Are there some national researchers dealing with public support to 0.0 g/l limit?
Hungary	N/a
Czech R	N/a
Slovakia	No official research , only directory information from the public opinion
Croatia	N/a

7.	Is there some national strategic plan concerning BAC limit enforcement in your country?
Hungary	N/a
Czech R	N/a
Slovakia	National plan for enforcement traffic safety – aim to decline amount of alcohol related accidents
Croatia	There is no special strategic plan only for the BAC limit enforcement, but there is a National Road Traffic Safety Programme of the Republic of Croatia for 2006-2010, adopted by the Government of the Republic of Croatia on 23 February 2006. Within the framework of this Programme a need has been established to implement preventive and repressive measures in a systematic way aiming at decreasing the number of drivers driving under the influence of alcohol.

8.	What is the legal background of enforcement of 0.0 limit of BAC? How is this measure formulated in law (literally)?
Hungary	N/a
Czech R	Law no. 411/2005 – It is not allow to drive transport means impaired (by drink alcohol or use other type of drugs). There is obligatory breath testing and subsequently blood testing in case of positive breath testing. At the bidding of police is obligatory blood testing in case of negative breath testing too.
Slovakia	There is law number 315/1996 about a roads traffic prohibited use of alcohol or other drugs, when driving or drive after used alcohol or drugs or in time when this

	substances could take effect
Croatia	<p>Literally, Article 199</p> <p>(1) A driver or a driving instructor shall not operate a vehicle on the road, nor start operating it, if having in the body a concentration of alcohol or narcotic drugs.</p> <p>(2) The presence of alcohol in the body shall be ascertained by taking of blood or urine samples, measuring the concentration of alcohol in a litre of exhaled air, medical examination and other methods and instruments.</p> <p>(3) A driver shall be deemed to have narcotic drugs in his or her body if so ascertained by appropriate means or devices, medical examination or a blood or blood and urine test.</p> <p>(4) A driver shall be deemed to have started operating the vehicle the moment he or she has made the vehicle move.</p> <p>(5) A fine in the amount of HRK 500 to 1,500 shall be imposed on a driver who in his or her body has alcohol in a concentration of up to 0.50 g/kg or milligrams in one litre of exhaled air. In addition to a fine, one penalty point may be awarded to him or her.</p> <p>(6) A fine in the amount of at least HRK 2,000 shall be imposed on a driver who in his or her body has alcohol in a concentration of above 0.5 to 1.50 g/kg or milligrams in one litre of exhaled air, a ban on driving a motor vehicle shall be ruled against him or her in the duration of at least three months, plus three penalty points awarded.</p> <p>(7) A fine in the amount of at least HRK 3,000 shall be imposed on a driver who in his or her body has alcohol in a concentration exceeding 1.50 g/kg or milligrams in one litre of exhaled air, or in his or her body has narcotic drugs, or if he or she refuses to be subjected to a test or a medical examination, i.e., to have a blood or blood and urine samples taken (Articles 182 and 285). In addition to a fine, a ban on driving a motor vehicle shall be ruled against him or her in the duration of at least six months, plus five penalty points awarded.</p> <p>(8) A fine in the amount of HRK 500 to HRK 1,500 shall be imposed on the driver of a bicycle or an animal-drawn vehicle in road traffic found to have a concentration of alcohol or narcotic drugs in his or her body.</p> <p>(9) The driver of a motor vehicle or tram or a driving instructor who has over the past 24 months since the day of committing an offence been penalised for offences under this Article two or more times, may in lieu of a fine be sentenced by the misdemeanour court to imprisonment for a period of up to 60 days, plus a ban on driving a motor vehicle in the duration of one to two years and five penalty points awarded.</p>

9.	Is breaking the BAC limit taken as offence or criminal delict, or from which level is the drink driving considered as criminal offence?
Hungary	Over 0.8‰ or 0.51 mg/l – traffic crime
Czech R	Over 0.8‰ – criminal act
Slovakia	Criminal delict is a driving over the limit 0.8‰
Croatia	Offence over the limit (0.15 g/l)

10.	Is there possibility of random testing?
Hungary	Yes
Czech R	Yes (Metropolitan police do breath tasting in case doubt of drink-drive)
Slovakia	Yes
Croatia	Yes

11.	Is there obligatory testing in case of accident?
Hungary	Yes
Czech R	Yes, it is.
Slovakia	Yes
Croatia	Yes

12.	When the breath testing is sufficient and when blood test is required?
Hungary	N/a
Czech R	Sufficient : no traffic delict; breath testing negative In case positive breath testing is required blood test and in case of accident too
Slovakia	Breath testing is sufficient : when the driver optionally submitted No sufficient : driver reject the breath test; when can not submit the breath test (injured, death,...)
Croatia	Literally, the text of the Act introducing the 0.0 g/l limit is as follows: Article 199 (1) A driver or a driving instructor shall not operate a vehicle on the road, nor start operating it, if having in the body a concentration of alcohol or narcotic drugs. (2) The presence of alcohol in the body shall be ascertained by taking of blood or urine samples, measuring the concentration of alcohol in a litre of exhaled air, medical examination and other methods and instruments. (3) A driver shall be deemed to have narcotic drugs in his or her body if so ascertained by appropriate means or devices, medical examination or a blood or blood and urine test. (4) A driver shall be deemed to have started operating the vehicle the moment he or she has made the vehicle move. (5) A fine in the amount of HRK 500 to 1,500 shall be imposed on a driver who in his or her body has alcohol in a concentration of up to 0.50 g/kg or milligrams in one litre of exhaled air. In addition to a fine, one penalty point may be awarded to him or her. (6) A fine in the amount of at least HRK 2,000 shall be imposed on a driver who in his or her body has alcohol in a concentration of above 0.5 to 1.50 g/kg or milligrams in one litre of exhaled air, a ban on driving a motor vehicle shall be ruled against him or her in the duration of at least three months, plus three penalty points awarded. (7) A fine in the amount of at least HRK 3,000 shall be imposed on a driver who

	<p>in his or her body has alcohol in a concentration exceeding 1.50 g/kg or milligrams in one litre of exhaled air, or in his or her body has narcotic drugs, or if he or she refuses to be subjected to a test or a medical examination, i.e., to have a blood or blood and urine samples taken (Articles 182 and 285). In addition to a fine, a ban on driving a motor vehicle shall be ruled against him or her in the duration of at least six months, plus five penalty points awarded.</p> <p>(8) A fine in the amount of HRK 500 to HRK 1,500 shall be imposed on the driver of a bicycle or an animal-drawn vehicle in road traffic found to have a concentration of alcohol or narcotic drugs in his or her body.</p> <p>(9) The driver of a motor vehicle or tram or a driving instructor who has over the past 24 months since the day of committing an offence been penalised for offences under this Article two or more times, may in lieu of a fine be sentenced by the misdemeanour court to imprisonment for a period of up to 60 days, plus a ban on driving a motor vehicle in the duration of one to two years and five penalty points awarded.</p> <p>The breach of this limit shall in any case be deemed an offence and not a criminal offence.</p> <p>A police officer exercising control over drivers and other road traffic users is authorised to carry out the testing by appropriate means or devices over drivers, as well as other traffic users whose conduct obstructs or endangers traffic, in order to ascertain the presence in their body of alcohol, narcotic drugs or medicinal drugs indicated as forbidden for use before or during a drive. He/she is also authorised to subsequently take those persons for the same purpose to blood and urine samples taking or a medical examination.</p> <p>If a police officer conducts an on-site investigation, there is an obligation to subject the persons directly involved in the traffic accident to the test measuring the alcohol and narcotic drugs concentration in the body.</p> <p>The blood test is required when the person who has been ascertained a concentration of alcohol in the body denies that or when a concentration of alcohol is found in one of the persons involved in the traffic accident with injured persons, as well as in cases of fatal traffic accidents .</p>
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13.	Is there some possibility for driver to refuse undergo testing (in case of random testing or evidential testing)? How such driver is treated?
Hungary	N/a
Czech R	Such as drink-drive case
Slovakia	N/a
Croatia	A driver who refuses to undergo the testing of alcohol or narcotic drugs concentration in the body shall be imposed a fine in the amount of at least HRK 3,000, and a ban on driving a motor vehicle shall be ruled against him/her in the duration of at least six months plus five penalty points awarded, which is the same as if he/she had a concentration of alcohol exceeding 1,50 g/kg or narcotic drugs in his/her body.

14.	Include traffic law some special provisions for young drivers?
Hungary	No
Czech R	No
Slovakia	N/a
Croatia	There are special provisions relating to young drivers in the Road Traffic Safety Act. The limitations they are subjected to mostly relate to the maximum vehicle power restrictions, maximum speed restrictions, and restrictions regarding the time they are allowed to operate vehicles on the road.

15.	Is police authorized to prevent driver from continuing his journey, when this could be dangerous? How? Withdraw driving licence on the spot, or confiscation of car or at least keys on the spot, or other procedure?
Hungary	Yes . By confiscation keys or other ways.
Czech R	Yes, it is. Police can remove driving license or forbid continuing hid journey.
Slovakia	N/a
Croatia	A police officer shall temporarily seize a driving licence from and exclude from traffic a driver or a driving instructor who operates or tries to operate a vehicle in spite of having in the body a concentration of alcohol or narcotic drugs or showing signs of intoxication, who operates or tries to operate a vehicle although it is obvious that the driver is in such a psychophysical condition (fatigue, stress, illness, presence of medicinal drugs in the body indicated as forbidden for use before or during a drive) that he or she is unfit to safely operate the vehicle, who does not possess the aids stated in his or her driving licence which he or she must use while operating a vehicle, who does not comply with the police officer's request to take a test or medical examination, and in some other cases.

16.	Does some other organisation than police participate in dealing with enforcement of BAC limit?
Hungary	Border guard
Czech R	Metropolitan Police (not exist databases amount of done control)
Slovakia	N/a
Croatia	Only police officers

17.	What is the system of sanctions for alcohol offences? How many penalty points, what are amounts of fines, is prison penalty possible, direct withdrawal of driving licence (for how long)? What are BAC levels related to various types of sanctions?
Hungary	Over 0.8 ‰ or 0.51 mg/l penalty: depends on the decision of court/penalty points: 7 between 0.8 ‰ or 0.51 mg/l penalty : 100.000 HUF (400 Euro) / penalty points : 3
Czech R	- Over 0.8 ‰ fine 25-50 000 (895-1800Euro); remove drive license 2 years; one year prison; penalty points: 7 - Between 0.8 ‰ and 0.5 ‰ fine: 20 000 (715 Euro); remove drive license 1-2 years; penalty points : 6 - under 0.3 ‰; remove drive license 1; penalty points: 3

Slovakia	N/a
Croatia	This question has been answered by directly quoting the Act in the answer to the question about the legal background of enforcing the 0.00 g/kg limit of BAC. A driving licence shall be temporarily seized until reasons have ceased for its seizure, but not for a period longer than 30 days.

18.	Are alcohol related delicts processed in administrative way, or always go to the court?
Hungary	Both depends on amount of ‰ (mg/l)
Czech R	N/a
Slovakia	N/a
Croatia	Alcohol related delicts are not processed in administrative way, but pursuant to the rules on misdemeanour proceedings. Pursuant to the Misdemeanour Act such proceedings shall not always go to court, but may be finalised in the first instance, once the Misdemeanour Order, which the police is authorised to issue, becomes legally valid

19.	What are other consequences for driver that commits the alcohol offence? Is he obliged to undergo medical or psychological test? Is he obliged to pass some kind of schooling or rehabilitation course? What are conditions for restoration of license for driver that lost his license because of drunk driving?
Hungary	to pass a special training containing different lectures and exam
Czech R	N/a
Slovakia	N/a
Croatia	In the proceedings related to the delicts committed as a result of alcohol addiction, the court can impose an obligation of medical treatment of addiction. There is no obligation <i>ex lege</i> of schooling or rehabilitation course. Once the time period during which a ban on driving a motor vehicle has been imposed is over, the driving licence shall be restored to the driver, without any additional conditions.

20.	Are there some plans about utilization of alcohol locks in cars?
Hungary	N/a
Czech R	No
Slovakia	No plans about use alcolocks
Croatia	There is no such plans

Enforcement – practical issues

1.	What is the number of alcohol tests performed per year?				
Hungary	819.520 (2005)				
Czech R	<table border="1"> <tr> <td>2003</td> <td>20 462</td> </tr> <tr> <td>2004</td> <td>20 506</td> </tr> </table>	2003	20 462	2004	20 506
2003	20 462				
2004	20 506				

Slovakia	N/a
Croatia	N/a

2.	What is cost of one test (including equipment, manhours)?
Hungary	Breath test on the spot : 8 Euro Breath test at the police station: 30-40 Euro Blood test: 140 Euro
Czech R	Breath test 1 Euro (only price of material)
Slovakia	Only material cost – maintenance of equipment and mouth-piece
Croatia	N/a

3.	What is percentage of positive tests within all tests performed?
Hungary	4,3 % (35.724 positive tests in 2005)
Czech R	There is no summary number of all performed tests but there is a amount of positive test 2001 : 16 836 2002 : 19 359 2003 : 21 132 2004 : 19 835 2005 : 15 077 2006: 9 840
Slovakia	N/a
Croatia	N/a

4.	What kind of equipment is used?
Hungary	Lion Alcometer SERES Ethylmeter 679 TH Siemens Alcomat Spirates indicator tube
Czech R	N/a
Slovakia	Alcometer Dräger Alcosenzor CM IV
Croatia	N/a

5.	How testing is organised? How places and times for testing are selected? Is it carried out continuously, everywhere, or is it concentrated only to places and times where the alcohol offences are more probable to happen, or in frame of some special police operations?
Hungary	Frequency of check is higher during evening and night hours
Czech R	City policeman and National Policemen can do a tests
Slovakia	Alcohol check is part of general traffic control, additionally – special control in some time and places (when/where is higher probability of drink drive);

	- special control is in competence of local traffic inspectorate
Croatia	The actions related to the testing of the drivers' alcohol level are concentrated to places and times where it is most probable to find the drivers driving a vehicle in road traffic under the influence of alcohol, while the testing of the traffic users' alcohol level is carried out without any action plan, on a daily basis while conducting regular traffic control.

6.	What is the procedure? Is there some level of tolerance?
Hungary	Under 0.2‰ can not be proved
Czech R	In practice under 0.2‰ is no clinically significant and no possible to penalised
Slovakia	As a positive test is estimate 0.15 mg/l and more (breath test)
Croatia	The tolerance towards the measured alcohol concentration is shown within the limits of allowed mistake and it is 0.1 g/kg.

7.	What is the procedure in case of positive test?
Hungary	Enclosure !!!
Czech R	N/a
Slovakia	Withdrawal of driving license, forbid continue driving
Croatia	When a police officer ascertains that a certain driver is under the influence of alcohol, he/she shall exclude the driver from traffic, temporarily seize his/her driving licence, and issue a Misdemeanour Order to the person on the spot of offence or he/she shall file a request for instigating misdemeanour proceedings before the competent court.

8.	What is the procedure in case of accident?
Hungary	Obligatory alcohol test (at the scene of accident; or the blood test at the hospital)
Czech R	Obligatory breath test, when impossible blood test in Hospital
Slovakia	Obligatory test
Croatia	The police officer investigating a traffic accident in which material damage has been caused shall subject the persons directly involved in the accident to a test performed by means of appropriate

equipment calibrated according to relevant regulations on measures and metrological conditions and used to ascertain a concentration of alcohol or narcotic drugs in the body. If the test shows that a driver directly involved in the accident has a concentration of alcohol or narcotic drugs in the body, but he or she denies it, the police officer shall take him or her to a health institution for medical examination and collection of blood and urine samples for analysis.

If there are persons injured in a traffic accident, the investigating police officer shall subject the persons directly involved in the accident to a test performed as described in the previous paragraph. If the test shows that drivers directly involved in the accident have a concentration of alcohol or narcotic drugs in the body, the police officer shall order a medical examination and taking of blood and urine samples for analysis.

If there are fatalities in a traffic accident, the investigating police officer shall order that blood and urine samples be taken from the drivers directly involved in the accident to ascertain if they have a concentration of alcohol or narcotic drugs in the body, and from other persons involved in the accident after a concentration of alcohol or narcotic drugs in the body has been ascertained by means of appropriate equipment or a medical examination.

The persons involved in traffic accidents must not, from the moment of the occurrence of a traffic accident until the testing has been carried out on them, take alcoholic drinks, narcotic drugs or medicinal drugs indicated as forbidden for use before or during a drive

9.	How the data concerning tests and offences are registered? Who is responsible, on what levels?
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Hungary	Data are registered on territorial level at the frame of police. Every year until 10 th of January all the territorial police forces send these data to the Traffic Enforcement Department of National Police Headquarters to analyse them.
Czech R	City Police and National Police take a test
Slovakia	Data is registered by the Police Officers
Croatia	There are no special records on the persons tested, nor on the results achieved in these tests. The Ministry of Justice is responsible for keeping the misdemeanour offences records. The courts communicate to the Ministry of Justice the data on persons on whom final judgements have been passed, including delicts in traffic, related to alcohol.

Annex II

Standard BAC Limits

TABLE 1: STANDARD BAC LIMITS			
Country	Standard BAC (in mg/ml)	Country	Standard BAC (in mg/ml)
Albania	0.1	Japan	0.3
Algeria	0.1	Kenya	0.8
Argentina	0.5	Kyrgyzstan	0.5
Armenia	0	Lithuania	0.4
Australia	0.5	Luxembourg	0.8
Austria	0.5	Malaysia	0.8
Azerbaijan	0	Malta	0.8
Belarus	0.5	Mexico	0.8
Belgium	0.5	Moldova	0.3
Bolivia	0.7	Mongolia	0.2
Bosnia and Herzegovina	0.5	Nepal	0
Botswana	0.8	The Netherlands	0.5
Brazil	0.6	New Zealand	0.8
Bulgaria	0.5	Nicaragua	0.8
Cambodia	0.5	Norway	0.2
Canada	0.8	Paraguay	0.8
China	0.3	Peru	0.5
Croatia (Republic of)	0	Philippines	0.5
Czech Republic	0	Poland	0.2
Denmark	0.5	Portugal	0.5
Ecuador	0.7	Romania	0
El Salvador	0.5	Russia	0.2-0.5
Estonia	0.2	Singapore	0.8
Ethiopia	0	Slovak Republic	0
Finland	0.5	Slovenia	0.5
France	0.5	South Africa	0.5
Georgia	0.3	Spain	0.5
Germany	0.5	Sweden	0.2

Greece	0.5	Switzerland	0.5
Guatemala	0.8	Thailand	0.5
Honduras	0.7	Turkey	0.5
Hungary	0	Turkmenistan	0.3
Iceland	0.5	Uganda	0.8
India	0.3	United Kingdom	0.8
Ireland	0.8	United States	0.8
Israel	0.5	Venezuela	0.5
Italy	0.5	Zimbabwe	0.8