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ROAD SAFETY AND ALCOHOL CONSUMPTION BY DRIVERS

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Abstract – The subject of this article is the issue of road safety and road accidents caused by drunk drivers. Road safety is an important issue in Poland and in all EU Member States. That is why the European Commission adopts appropriate legal regulations, action plans and long-term strategies to increase road safety. For this purpose, the European Road Safety Council was established in 1993. An analysis of statistical data on road accidents in general and those involving drunk drivers indicates that this is still a serious problem of modern society.

Key words – safe transport, road safety, road death, blood alcohol level, drink driving

JEL Classification – K32

INTRODUCTION

Since the inception of states and societies, security dilemmas have played an important role in the lives of citizens. The closer to modern times, the more modern inventions are a sense of threat to the health and life of citizens [1]. Transport is also one of them.

Security is a state that gives a sense of certainty and guarantees of its behavior and opportunities for improvement. This is one of the basic human needs [2].

Transport security is a sensitive issue that affects all transport users and transport providers. It is a basic right to be able to travel without fear of being a victim of some form of attack. Yet, it is also important that security is not so intrusive as to make travel an unpleasant experience [3-4].

Safe transport reduces the risks to health and life resulting from transport activities.

The importance of research and technology development to improve transport safety has been recognised by the Council of the European Union when adopting Directive 94/914/EC defining the basic lines of action in this field [5]. One of the priority directions was the development of research on increasing the safety of means of transport. In several Member States of the European Union, appropriate state administration bodies, advisory bodies and scientific centers have been established to comprehensively deal with safety issues in various modes of transport: road, rail, air and water. The starting point for creating a new European policy was the European Commission's document on transport, which drew attention mainly to the importance of this sector for the economy and the need for liberalization Business. The new European transport policy, adopted in 2001, the White Paper on European transport policy for 2010: Time to decide, clarifies the Commission's expectation of a 50 % reduction in transport deaths within a decade [6]. The European Transport Safety Council (ETSC) plays an important role in a bid to improve transport safety.

In 2004 was signed in Dublin European Road Safety Charter [7]. The Charter aims to encourage and support civil society to promote road safety in Europe, acknowledge their work in doing so, help its members learn about and share knowledge on road safety issues, and promote dialogue at all levels of governance in the EU.

The Charter is based on four principles: caring about road safety, taking action, supporting road safety policies, and sharing knowledge and experience.

The article presents research on road safety related to alcohol use conducted in 2022 by The European Transport Safety Council.

The aim of the article is to draw attention to the problem of driving a car after drinking alcohol and the resulting consequences for road safety. Under the influence of drunk driving, there are many accidents

with horn injuries, as a result of which many people die. Therefore, the common EU transport policy, as well as the solutions introduced at the level of individual countries, should counteract this phenomenon and introduce provisions to ensure that citizens feel safe on the roads.

The aim of the article is to try to answer two research questions:

1. Can citizens feel safe when traveling?
2. What are the risks to the health and life of other road users caused by drunk drivers?

1. THE ROLE AND IMPORTANCE OF THE EUROPEAN TRANSPORT SAFETY COUNCIL

The European Transport Safety Council was established in 1993 as a non-governmental organization. The Council advises the European Commission, the European Parliament and national governments on the safety of all transport sectors; road, rail, air, water and pipeline. However, due to the predominance of road transport losses over others, road accidents occupy a prominent place in the work of the ETSC [8]. On the basis of many years of work on the issue of transport safety, the following are the most important factors [8]:

- the place of transport safety in transport policy,
- appropriate coordination of activities in the field of the entire transport system,
- man, his skills, abilities, perception and endurance of the body;
- preventive measures that should lead to a reduction in human exposure,
- reducing the probability of collision and reducing its consequences,
- an appropriate technical approach determining the impact of the technical condition of vehicles (objects) on the safety of transport tasks.

This systemic approach increases the safety of people, goods and the environment; reduces financial outlays on maintaining the state security system and minimizes ecological threats caused by the impact of transport. The integration of measures for a uniform safety system in transport determines its smooth functioning.

The ETSC plans and evaluates the effects of actions to improve road safety in Europe in ten-year intervals. The first concerned the decade 2001-2010, the second 2011-2020, and the latest 2021-2030 [9].

The ETSC recommendations on increasing road safety are prepared in a very extensive way and do not concern one or two areas of action. In its work, the European Transport Safety Council focuses on issues such as [9]:

1. permissible speed on roads,
2. driving under the influence of alcohol,
3. the safety of vulnerable road users,
4. implementation and enforcement of road safety regulations in European countries,
5. safety of professional drivers,
6. technical solutions for vehicle safety,
7. the safety of cyclists.

All these and other issues dealt with by ETSC experts are published in the form of these detailed reports. Not only the most well-known one, about the number of accidents on the roads in Europe, but also about the safety of pedestrians and cyclists, accidents involving trucks or ways to improve road safety in cities.

2. ALCOHOL-RELATED ACCIDENTS ON EUROPE'S ROADS

Thanks to the annual PIN (Road Safety Performance Index Report), It is possible not only to assess how the level of safety on European roads has changed over the years, but also to check whether the objectives set out in the EU road safety policy are being met.

The report also leads to a simple question: are Europe's roads safe?

Unfortunately, the answer cannot be unambiguous. There is no doubt that the level of security is gradually increasing, but it is still far from satisfactory.

According to a report published by the ETSC [10], 19 823 people died on Europe's roads in 2021. This represents a 5% increase from the previous year (18,861 fatalities), which can be explained by the loosening of covid restrictions. Especially since compared to 2019 (22 763 victims), a 13% decrease is noticed.

As can be seen from Table 1, the number of road accidents in total and those involving drunk drivers has been decreasing in all EU countries over 10 years.

Based on ETSC statistics, analysis for Polish showed a nearly 47% decrease in the number of people killed in road accidents between 2011 and 2021. This means that year after year in the last ten years on Polish roads deaths by 4.7% less. Apart from Poland, the greatest improvements can be seen in Bulgaria and Romania, the Netherlands and Cyprus. The countries with the highest number of fatal road accidents remain the same, i.e. France (3963), Italy – (2843), Germany (2562), Poland (2245), Romania (1779).

The exception to this rule remains Spain, where there is still an upward trend in fatal accidents in general and under the influence of alcohol.

In Poland, 2021 turned out to be exceptional in our country, because the number of accidents involving drunk drivers did not increase, but decreased (by 3.1%) when compared to the last 10 years. There were also fewer killed (-9.9%) and wounded (-0.2%), which must be considered a really good result,

especially since earlier statistics of this kind in Poland remained at a relatively stable level.

3. ROAD TRAFFIC ACCIDENTS AFTER DRINKING ALCOHOL IN POLAND

As the above statistics from Table 1 show, Polish roads are not among the safest in Europe, and driving under the influence of alcohol is still a common cause of accidents [12].

In 2020, 2540 cases of this type of collision were recorded, which is 2 times less than in 2011 (4972).

Despite the downward trend in the number of alcohol-related accidents and the decline in drunk drivers, these accidents account for 10.8% of all accidents. As a result, 327 people died (13.1% of the total) and 2723 people were injured (10.3%). The number of incidents decreased by 177 cases compared to 2019.

In 2012, 37 046 accidents were registered in Poland, while 9 years later the same statistic for the whole country was 22,816 accidents. Not counting 2016, which saw growth, there is a noticeable downward trend. Compared to 2019 and 2020, the number of accidents last year decreased by 7472 and 724 respectively, which in percentage terms gives a reduction of 24.7% and 3% [12].

Contrary to appearances, most often accidents under the influence of alcohol are caused not by very young people, but by experienced drivers in the **age range of 25-39 years**. According to police data, as many as 42.8% of drunk perpetrators of collisions belong to this age group. Right after them, most accidents happen to people aged **40-59** (26.5%). Young drivers (15-24 years old) are responsible for only 1/5 of all collisions caused by drugs. The least road incidents are caused by the 60+ group, which contributes to only 9.5% of incidents.

Police data seems to confirm everyone's assumption that accidents caused by alcohol most often occur **on weekends between 16:00 and 22:00**. Statistically, they occur more often on Saturdays (20.3%) than on Sundays (19.5%). The most vulnerable months are **June, July and August**. Accidents are usually caused by reduced perception, late hour, traffic situation and too high vehicle speed not adapted to driving conditions. In addition, the dangers on the road at this time are also failure to give the right of way, improper overtaking and failure to maintain a safe distance between vehicles.

Table 1. Number of fatal accidents in EU Member States and accidents caused by alcohol [11]

Member State of EU	2011		2021	
	Total accidents	Accidents caused by alcohol	Total accidents	Accidents caused by alcohol
Austria	523	51	362	29
Belgium	884	45	516	16
Bulgaria	657	28	561	15
Croatia	418	151	292	51
Cyprus	71	25	45	10
Czech Republic	773	100	531	50
Denmark	220	53	135	26
Estonia	101	20	55	17
Finland	292	83	223	45
France	3963	1220	2944	840
Greece	1141	101	608	39
Spain	702	230	812	273
Netherlands	661	14	582	4
Ireland	186	66	137	21
Malta	17	9	9	4
Germany	4009	400	2562	167
Poland	4189	559	2245	331
Portugal	891	210	514	143
Romania	2018	164	1779	47
Slovakia	324	37	226	35
Slovenia	141	35	114	37
Sweden	319	67	210	36
Hungary	638	57	544	51
Italy	3860	n.a.	2843	n.a.

According to statistics, the area most vulnerable to accidents under the influence of alcohol in Poland is **the Łódzkie voivodeship**. Next are the Mazowieckie, Małopolskie and Śląskie voivodships. These data were prepared on the basis of the largest number of collisions and do not take into account the number of inhabitants of individual regions. For this reason, the experts of the portal Ubea.pl calculated which province is the most dangerous. Their calculations confirmed information on the Lodzkie Voivodeship, where an average of 7.44 accidents occur per 100,000 people aged 20 or more. It is followed by the **Świętokrzyskie** (13.02), **Warmińsko-Mazurskie** (11.82) and **Małopolskie** (10.07) voivodeships. The safest areas in Poland are Kujawsko-Pomorskie (5.01) and Podkarpackie (6.31).

Last year, in the aforementioned 2488 road accidents, 331 people were killed and as many as 2805 were injured. Those killed in road accidents involving people under the influence of alcohol account for 14.7% of all killed on Polish roads, while the injured account for 10.6% of all people with damage to health.

Dangerous behavior of drunk drivers were the direct causes of incidents on the road [13]:

1. failure to adapt speed to traffic conditions,
2. failure to grant the right of way,
3. incorrect evasion,
4. failure to keep a safe distance between vehicles.

4. LOWER BLOOD ALCOHOL CONCENTRATION (BAC LEVELS)

In order to be found guilty of committing a crime, it is not necessary for any effect of the crime to occur. In other words, for a crime to be committed, it is sufficient to drive a vehicle while intoxicated, which should be understood as a situation when:

The blood alcohol content exceeds 0.5 per mille or leads to a concentration exceeding this value or the alcohol content in 1 dm3 of exhaled air exceeds 0.25 mg or leads to a concentration exceeding this value [14].

In different EU Member States, the rules vary according to different groups of drivers (Tab. 2)

However, it should be remembered that the reality is much worse compared to statistics. The police warn that up to 10 times more Poles may drive after alcohol than the data indicate. As the officers note, the biggest problem of drivers is not (as it might seem) driving drunk, but driving a car on the second day after consumption. Motorized drivers "hungover" account for as much as 90% of stopped under the influence of alcohol.

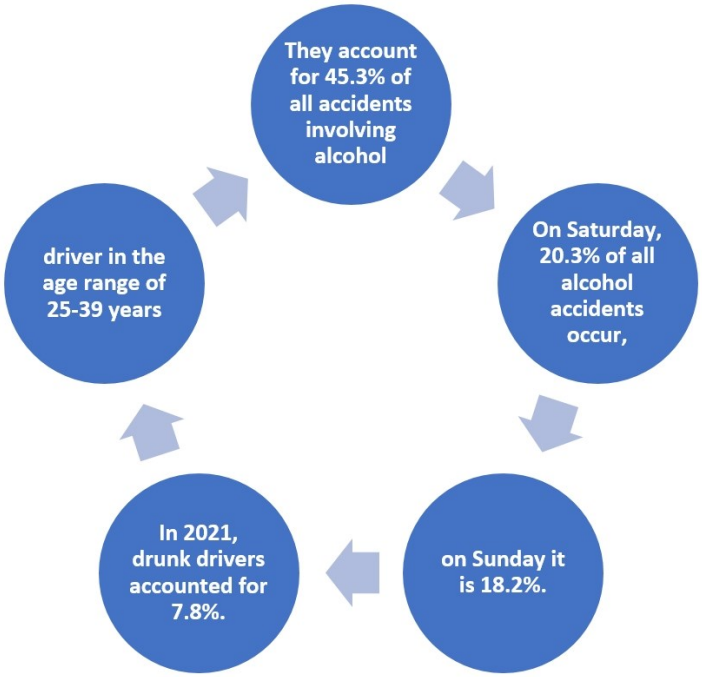

Fig. 1. Mind map: **Features of Polish accidents under the influence of alcohol**

Table 2. BAC limits (in g/l)

Member state of EU	Standard BAC	BAC Commercial drivers	BAC Novice drivers
Austria	0,5	0,1	0,1
Belgium	0,5	0,2	0,5
Bulgaria	0,5	0,5	0,5
Croatia	0,5	0,0	0,0
Cyprus	0,5	0,2	0,2
Czechia	0,0	0,0	0,0
Danemark	0,5	0,5	0,5
Estonia	0,2	0,2	0,2
Finland	0,5	0,5	0,5
France	0,5	0,5	0,2
Greece	0,5	0,2	0,2
Spain	0,5	0,3	0,3
Netherlands	0,5	0,5	0,2
Ireland	0,5	0,2	0,2
Lithuania	0,4	0,0	0,0
Malta	0,5	0,2	0,2
Germany	0,5	0,0	0,0
Poland	0,2	0,2	0,2
Portugal	0,5	0,2	0,2
Romania	0,0	0,0	0,0
Slovakia	0,0	0,0	0,0
Slovenia	0,5	0,0	0,0
Sweden	0,2	0,2	0,2
Hungary	0,0	0,0	0,0
Italy	0,5	0,0	0,0

Source: Progress in reducing drink-driving and other alcohol-related road deaths in Europe, ETSC, Brussels, December 2022, Tab. 2, p.18

CONCLUSIONS

Comparative analysis of the above data has shown that despite the decreasing number of road accidents in general and those caused by alcohol over 10 years (2011-2021), there is still a risk of causing a road accident by drunk drivers. Still no one can feel 100% safe being a road user in Poland and in other European Union Member States. For this reason, the European Commission has issued recommendations to Member States on how to improve data collection of alcohol-related road deaths. Among them is written:

- Aim for a systematic breath-test and subsequent blood-test for alcohol for all active road users involved in collisions resulting in road deaths or serious injuries and a systematic blood test for all such road users who are deceased. Ideally, 100% of active road users that are involved in a road collision that resulted in death or serious injury should be tested for alcohol. If systematic alcohol testing at this level is not possible, countries should apply additional methods for adjusting the official numbers of alcohol-related road deaths and serious road injuries.
- Publish annual numbers of alcohol-related road deaths and serious injuries according to the Safety Net definition.
- Estimate the scope of underreporting with the aim to increase the level of reporting, while improving the communication between hospitals and police. Recommendations to EU institutions on how to improve data collection for alcohol-related road deaths.
- Encourage Member States to adopt the SafetyNet recommended definition of an alcohol-related road death casualty as “any death or serious injury occurring as a result of a road accident in which any active participant was found with a blood alcohol level above the legal limit”, whilst recognising BAC limits differ among EU countries.

- Collect and publish the annual number of alcohol-related road deaths according to the SafetyNet definition. Develop correction factors to take into account differences in legal BAC limits between Member States. Support Member States in estimating the scope of underreporting with the aim of increasing the level of reporting.

The European Union has set itself ambitious plans for road safety. According to the assumptions for the period 2021-2030, the number of road fatalities should be halved and the number of people seriously injured in road accidents should be halved.

Guided by the need to guarantee the highest possible level of road safety, the new proposals of ETSC to improve road safety concern e.g.:

1. mandatory installation of systems in new cars to increase driving safety – intelligent speed assistance (ISA), lane assist or automatic braking system before obstacles;
2. introduction of a total ban on driving after alcohol - a unified limit of alcohol allowed behind the wheel in the amount of 0.0 per mille would cover the entire European Union;
3. Expanding low-speed zones - the so-called 30 Tempo Zones would cover not only centers, but even entire cities.

The above-mentioned guidelines are also implemented in Polish legislation, but new solutions and ways to eliminate driving under the influence of alcohol are still being sought.

BEZPIECZEŃSTWO W RUCHU DROGOWYM, A SPOŻYWANIE ALKOHOLU PRZEZ KIEROWCÓW

Tematyką niniejszego artykułu jest kwestia bezpieczeństwa w ruchu drogowym oraz wypadków drogowych spowodowanych przez pijanych kierowców. Bezpieczeństwo na drogach jest ważną kwestią w Polsce oraz we wszystkich państwach członkowskich UE. Dlatego też Komisja Europejska uchwala odpowiednie regulacje prawne, plany działania i długoletnie strategie na rzecz zwiększenia bezpieczeństwa na drogach. W tym celu została powołana w 1993 roku Europejska Rada Bezpieczeństwa Drogowego. Analiza danych statystycznych dotycząca wypadków drogowych ogółem i tych z udziałem pijanych kierowców wskazuje, że nadal jest to poważny problem współczesnego społeczeństwa.

Słowa kluczowe: bezpieczeństwo drogowe, wypadki drogowe pod wpływem alkoholu, pijani kierowcy

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