

Today, this is a pressing problem in all metropolitan areas, so more and more people are choosing to use the subway or the city train. Another, no less global task is to abandon carbohydrate fuel and save energy resources. Developments in this area will help improve environmental conditions in major cities and generally become independent of the planet's resources. The third task is to increase the safety of passenger traffic. Unfortunately, 90% of traffic accidents are caused by drivers. Therefore, they are now actively deploying unmanned traffic management technology. The use of these technologies can reduce traffic accidents to almost zero.

References

<https://www.google.com/search?q=Transport+of+Future&oq=Transport+of+Future&aqs=chrome..69i57j0i22i30l4j69i60l3.27266j0j7&sourceid=chrome&ie=UTF-8>

STUDY OF THE IMPACT OF THE DRIVER'S PSYCHOPHYSIOLOGICAL INDICATORS ON ROAD SAFETY

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Vehicles have a great positive impact on the country's economy, create convenience and comfort for people. But the development of transport and the increase in its role in people's lives is accompanied not only by a positive effect, but also by negative consequences, in particular, traffic accidents.

Every year, according to the World Health Organization, about 1,3 million people die in road accidents and about 9 million are injured. However, the most tragic thing is that not only drivers die and are injured in road accidents, but also passengers, pedestrians, and most importantly, the future of the country - children.

The growth of the car park continues. Over 5 years, it has grown by 7,3%, the number of passenger cars has increased by 5,4 million units, or by 34,3%, and over the past 10 years - almost doubled.

According to the available statistics, incorrect actions of the driver cause accidents in 60-70% of cases, unsatisfactory road conditions and non-compliance with traffic conditions in 20-30%, and technical malfunctions of the car in 10-20%. In general, the "human factor" is the cause of accidents in 75-96% of cases. It becomes obvious that the main carriers of danger are road users, primarily drivers of vehicles.

The main types of traffic accidents, according to the accepted classification:

1. Collision of a vehicle (50-60%):

- a pedestrians;
- an obstacle;
- a standing vehicle;
- a cyclist;
- a horse-drawn transport;
- an animal.

2. Collisions (30-40%):

- opposite;
- along the way;
- lateral.

3. Vehicle rollover (8-10%):

- bad weather conditions;
- improper placement or fastening of cargo;
- incorrect management techniques;
- technical malfunctions.

4. Passenger falling (up to 2%).

5. Cargo drop (up to 0,5%).

6. Others (2-2,5%).

There is the following classification of the causes of road accidents:

1. At fault of the pedestrian;

2. Due to the fault of the driver:

- distraction from management and carelessness (26%)
- exceeding the speed of movement (20-25);

- non-observance of maneuvering rules (20-22%);
- driving a vehicle while intoxicated (10-20%);
- exit to the oncoming lane (5-15%);
- violation of traffic rules at intersections (5-10%);
- violation of the traffic rules of crossings (up to 5%);
- failure to observe the distance (3-6%);
- non-observance of overtaking rules (2,5-5,5%);
- lack of rights to drive a car of the corresponding category (up to 2%)
- violation of the rules of passage of railway crossings (up to 1%).

3. Due to the malfunction of vehicles;

4. Due to bad road conditions;

5. Due to poor organization of traffic.

It is important to note that, in essence, these violations are the result of non-standard actions of drivers. Often the causes of errors are psychological in nature. This is due to the fact that with a high intensity and density of the traffic flow in difficult traffic situations, the driver requires not only a high level of training and knowledge of traffic rules, but also a high level of psychophysiological and moral qualities.

In this regard, it is important to understand to what extent the psychophysiological characteristics of the driver affect his activity, and how to build such a model of the training system so that training in the psychophysiological support of activity significantly improves traffic safety in general.

The qualities that determine the reliability of the driver are revealed:

- speed of response;
- the ability to correctly assess the speed of movement of objects;
- muscular-articular (kinesthetic) sensitivity;
- quality of vision (volumetric, twilight, sensitivity to blindness).

According to these criteria, it was possible to reduce the number of accidents by 37%, despite the increase in the total number of vehicles on the roads by 30%.

As a result of the low psychophysiological support of the professional activity of drivers, the following shortcomings occur in their training:

1. The learning process does not take into account the individual characteristics of the student-driver (temperament, personality traits, abilities, etc.), which adversely affects the quality of his training;

2. In the method of teaching drivers, they do not always take into account the patterns of functioning of the mental and physiological systems of the central nervous regulation of behavior.

3. Ignorance of the psycho-physiological capabilities and limitations of one's own body is accompanied by an irrational organization of the drivers of their activities and, as a result, leads to an accident;

4. The psycho-emotional sphere and self-awareness of drivers are not involved in driving training, which negatively affects their behavior on the roads.

In this regard, the analysis of the prerequisites for the erroneous actions of drivers, the diagnosis of their current psychophysiological state as an indicator of readiness for activity, as well as the search for methods for correcting negative states are important tasks of methodological, psychological and psychophysiological research.

The study of psychophysiological indicators of drivers' readiness for activity, taking into account objective data (age, experience, number of accidents, etc.), should be of fundamental importance for the probability of driver's erroneous actions, which is very important for improving road safety in general.

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THE INFLUENCE OF THE TECHNICAL CONDITION OF VEHICLES ON ROAD SAFETY

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The average age of the car fleet in the European Union is 8 years, in the USA - 11 years, and in Ukraine - 22.4 years [1]. Today, Ukraine has such a disappointing economic situation, when it is more profitable to buy a car with mileage, in particular a passenger car, than a new one from a car dealership. Usually, these cars have reduced indicators of technical condition and operational characteristics. In addition, these parameters are negatively affected by untimely-regulated technical inspection, replacement of consumables, car repair, which are quite often abused by drivers and car owners. All this affects active safety and the level of accidents on the roads. Active safety, which is one of the main components of the operational properties of the vehicle, depends on the car's controllability and stability.

The operational properties of the car are significantly influenced by the structural features and technical condition of the steering, suspension elements and braking system. In addition to, the change in the technical condition and stiffness of the supporting system during operation should be included among the factors affecting the operational properties of the car. Considering the fact that the beginning of the intensive equipping of cars with modern structural safety systems dates back to the 1990s, and based on the specified age structure of the car park, it can be assumed that no more than 50% of passenger cars meet modern structural safety requirements, 30% buses and 22% of trucks. Moreover, this means that a total of up to 24 million car units, which do not fully meet modern design safety requirements, can move on the roads of Ukraine today. Distribution of the number of road accidents by types of technical malfunctions vehicles [2].