

4. Transport accident statistics from the World Health Organization (<https://www.who.int/ru/news-room/fact-sheets/detail/road-traffic-injuries>)

## **THE INFLUENCE OF THE TECHNICAL CONDITION OF VEHICLES ON ROAD SAFETY**

*A.I.Venher, student*

*National Technical University "Kharkiv Polytechnic Institute"*

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].

Malfunction	The number of traffic accidents, %
Working brake system	31,8
Trailer braking system	4,3
Steering control	13,6
External lighting devices	20,2
Wheel disconnection	14,3
Wheel disconnection	4,0
Discrepancy of the tires of the car	1,6
model Coupling device	1,5
Others	20,7

As it can be seen from the above data, the technical malfunction of vehicles has a negative impact on road safety and contributes to traffic accidents. Timely diagnostics and proper maintenance of vehicles, in particular such systems and components as the steering system, working braking system, external lighting and light signaling system, wheels and tires, can significantly reduce the incidence of road accidents due to the unsatisfactory technical condition of vehicles.

### References

1. Аналіз впливу технічного стану автомобіля на рівень аварійності на дорогах.: Мурашківська В. П., Кужельний Я. В., Скляр В. М., Следнікова О. С. (2021), Технічна інженерія, (1(87)), 28–37. [https://doi.org/10.26642/ten-2021-1\(87\)-28-37](https://doi.org/10.26642/ten-2021-1(87)-28-37)
2. Безпека дорожнього руху. Навчальний посібник .: Кашканов А. А., Грисюк О. Г., Гуменюк І. І., Вінниця, ВНТУ, 2017.