HSR (LONDON),
HOUGHTON STREET REVIEW JOURNAL
ISSN: 2058-5519|Impact factor-15.9
http://houghtonstreetreview.com/index.php/hsr

THE PSYCHOPHYSIOLOGICAL STATE OF A DRIVER AND ITS INFLUENCE ON MOTION SAFETY.

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Abstract. This article analyzes the impact of a driver's psychophysiological state on traffic safety. The importance of stress, fatigue, distraction, and mental state is highlighted. Based on the scientific facts presented in the article, we have demonstrated the need to improve the psychophysiological state of drivers.

Keywords: driver, characteristic, stress, fatigue, pressure, danger.

Research indicates that under stress, a driver's decision-making speed and ability to think clearly decrease, which can lead to traffic accidents. The reaction speed of a tired driver creates a situation similar to that of a drunk driver. Distractions, such as telephone conversations, external noises, or music, distract the driver from the road and lead to poor decision-making in dangerous situations.

Mental state, such as mood, also has a significant impact on a driver's road safety. Drivers in a bad mood or angry tend to violate traffic regulations, which can lead to traffic accidents. Psychomotor functions, such as rapid reaction and the ability to maintain balance, also play an important role in safe driving.

Therefore, it is necessary to conduct medical and psychological examinations, as well as regular training, to improve and monitor the psychophysiological state of drivers. This will help ensure driver safety, as well as road safety, and reduce traffic accidents. The article also provides practical recommendations for improving the psychophysiological state of drivers [1].

1. Psychophysiological state and the influence of stress.

The driver's mental state and their psychological and physiological state directly affect road safety. Stress, nervousness, and an aggressive mood weaken a driver's ability to make decisions. Studies show that drivers under stress are 2-3 times more likely to get into accidents. In such cases, the driver cannot make a quick and clear decision.



Figure 1. Fatigue and stress

Drivers in a state of stress can also slow down their reactions. This prevents the driver from quickly making the right decision and acting correctly. According to research, drivers under stress are more influenced by distracting factors. For example, external noise, telephone conversations, or other

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unpleasant situations can distract the driver from the road. This, in turn, leads to making incorrect decisions in dangerous situations.

Long-term effects of stress can also affect physical well-being. In drivers who are under stress for a long time, the heart rate increases, blood pressure rises, and the muscles strengthen. These situations lead to driver fatigue and a decrease in attention, making it difficult to make the right decision and react in a timely manner in dangerous situations [3].

2. Fatigue and lack of sleep.

Fatigue significantly slows down the driver's reaction speed. According to research, drivers deprived of sleep for more than 18 hours have the same reaction rate as those who have consumed alcohol. The effects of fatigue can be felt during long-distance driving. This reduces road safety.

Effects of sleep deprivation:

Lack of sleep seriously affects a driver's psychomotor abilities. Prolonged sleep deprivation reduces a driver's reaction speed, makes it difficult to concentrate, and impairs their ability to make quick decisions. Studies show that drivers who do not get enough sleep make the same number of mistakes and are more likely to get into traffic accidents than drivers who drink alcohol.

Exhausted drivers often make poor decisions in dangerous situations, failing to realize that they need to drive themselves more carefully. For example, a tired driver may have difficulty maintaining a pre-planned speed, or there may be a significant braking delay, which can lead to a traffic accident.

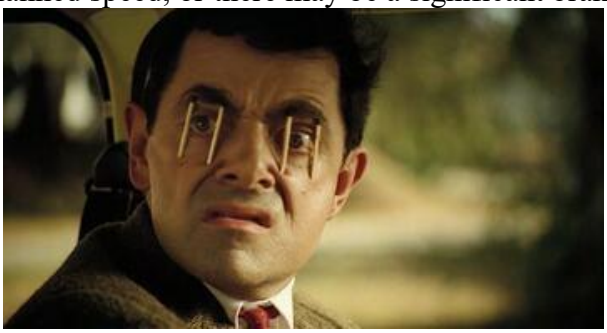


Fig. 2. Lack of sleep.

The effects of fatigue on long-distance driving. In long-distance driving, being deprived of sleep, especially at night or for extended periods, significantly reduces the driver's safety. According to research, the psychomotor and cognitive functions of drivers who do not sleep for a long time weaken. In this case, the driver may not notice fatigue, which prevents them from responding quickly enough to hazardous situations. For example, a driver who has been on the road for a long time may have difficulty concentrating and may not notice their physical condition. As a result, the driver may find himself in a dangerous situation without realizing his fatigue. Therefore, it is important to take regular breaks, rest for a short time, and get a good night's sleep while driving long distances.

Measures to overcome fatigue. To reduce fatigue, drivers should regularly rest and devote sufficient time to sleep. Good sleep helps maintain the driver's ability to concentrate, restore reaction speed, and make correct decisions in dangerous situations. Drivers are also advised to take breaks during long-distance driving, perform physical exercises to overcome inactivity and refresh the body [5].

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Distraction. Distraction of attention is one of the primary causes of traffic accidents. According to Japanese research, distracting factors (telephone, external noise, conversations) lead to 25–30% of traffic accidents. The driver's tendency to be distracted from the road prevents him from making the right decisions in dangerous situations.

Conclusion

The driver's psychophysiological state directly affects their safe driving. Improves stress, fatigue, distraction, mental state, and psychomotor functions, contributing to improved road safety. Monitoring the psychophysiological state plays an important role in ensuring the driver's safe driving.

It is necessary to conduct regular psychological and physiological examinations, as well as to organize training sessions aimed at reducing stress, focusing attention, preventing fatigue, and improving mental well-being. Improving the psychophysiological readiness of drivers strengthens their ability to respond correctly and quickly to dangerous situations. At the same time, promoting a healthy lifestyle among drivers helps improve physical and mental health, which significantly contributes to ensuring overall safety.

Ensuring road safety requires not only technological advancements and the improvement of transport facilities but also the monitoring of the driver's psychophysiological state. Therefore, training drivers through psychophysiological examinations and training will help reduce traffic accidents and improve safety.

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