

THE EFFECTIVENESS OF DEVELOPING MEASURES BASED ON THE ANALYSIS OF ROAD TRAFFIC ACCIDENTS IN MOUNTAINOUS AREAS OF THE M-39 HIGHWAY

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Abstract: This article presents current problems and solutions for ensuring the safety of vehicles in the mountainous terrain of km 982-1013 of the M-39 highway of international importance in the Jizzakh region, the specific natural and geographical conditions of mountainous areas, and numerous risks to traffic. The main direction of improving road safety is the systematic analysis of road traffic accidents and the subsequent development of comprehensive measures.

Key words: International highway M-39, road traffic accident, mountain road, transport, safety, road traffic accident, traffic safety, accident, injury, harm, speed, roadway, driver, car.

Аннотация: В данной статье представлены актуальные проблемы и решения по обеспечению безопасности автомобилей в горных районах 982-1013 км дороги М-39 международного значения Джизакской области, специфические природно-географические условия горных районов, многочисленные риски, возникающие для автомобильного движения. Основным направлением повышения безопасности дорожного движения является системный анализ анализа дорожно-транспортных происшествий и разработка на его основе комплексных мероприятий.

Ключевые слова: Международная автомобильная дорога М-39, дорожно-транспортное происшествие, горная дорога, транспорт, безопасность, дорожно-транспортное происшествие, безопасность движения, несчастный случай, травма, ущерб, скорость, проезжая часть, водитель, автомобиль.

Today, road accidents are becoming a pressing problem. For example, according to statistical data from the World Health Organization, about 3,000 people die and 100,000 are seriously injured in road accidents worldwide every day. Of those who died in road accidents, 13 or 36 percent were due to speeding, 9 or 25 percent were due to non-compliance with distance, 8 or 22 percent were due to fatigue, falling asleep at the wheel, 4 or 11 percent were due to crossing the road in an undesignated place, 1 or 3 percent were due to failure to pass a route vehicle, and the level of danger of mountain roads is also high (Fig. 1).

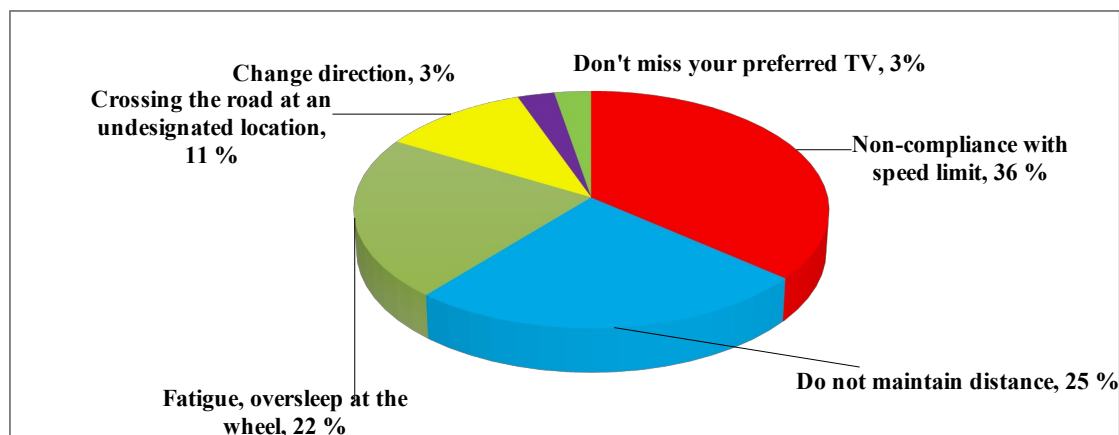


Figure 1. Indicators of the causes of road accidents on the M-39 highway between km 982-1013 for 12 months of 2024

The largest number of incidents, 29 or 76 percent, occurred in collisions. In the following places, 6 or 16% of cases of hitting a pedestrian, 2 or 5% of cases of overturning, 1 or 3% of cases of hitting an obstacle were recorded. The majority of accidents occur at night (23:00 PM).

- Cars caused the most accidents, with the number of related incidents approaching 30. This indicator is significantly higher compared to other vehicles.

- The number of accidents involving trucks is around 8, which is significantly lower than that of passenger cars.

Accidents involving buses were not recorded at all, meaning no road traffic accidents involving buses occurred on this route.

The reason may be that trucks move less or that their drivers move more cautiously. And the buses may not have participated in the road traffic accidents, since they are vehicles moving in the prescribed direction at a limited speed. These data indicate the need to further control the movement of passenger cars, especially in mountainous areas, speed limits, and increased safety measures. This plays an important role in the prevention of road accidents (Fig. 2).

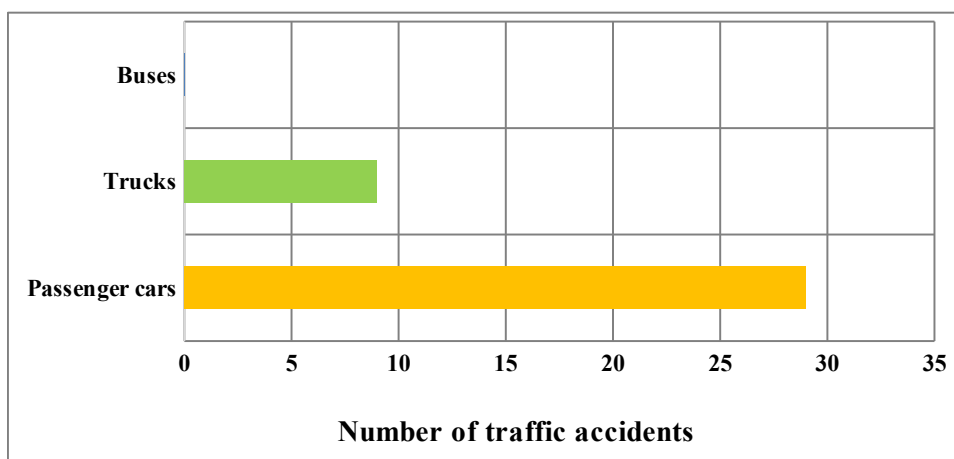


Figure 2. Number of accidents by type of vehicle in 2024 (interval of 982-1013 km of the M-39 highway)

Based on statistical data for 2024, it can be analyzed that as a result of road accidents at km 982-1013 of the M-39 highway, passing through the mountainous territory of the Jizzakh region, 29 accidents involving cars and 9 accidents involving trucks occurred.

During the 12 months of 2023, the highest indicator was observed in April at 982-1013 km of the international highway M-39, which passes through the territory of the Jizzakh region. This month, natural factors such as sharp changes in air

temperature, increased precipitation, and fog in mountainous areas have complicated drivers' movement. In addition, the increase in traffic flow in the spring season, as well as the wet state of the road surface, increased the risk of slipping (Fig. 3).

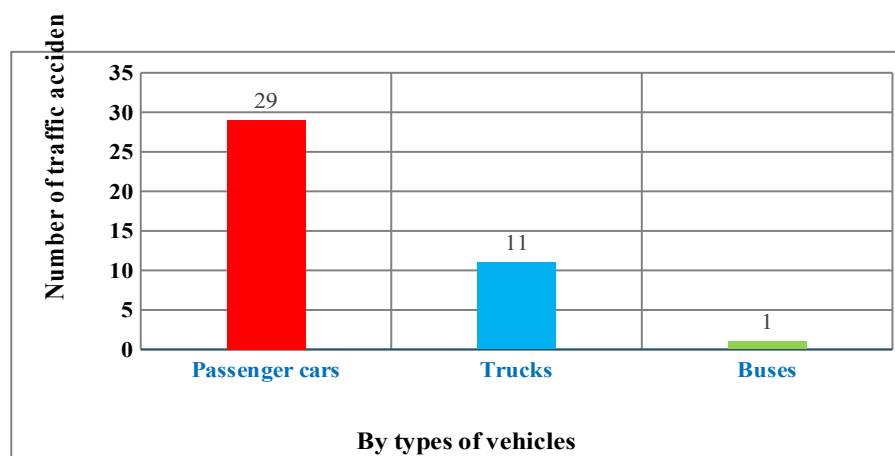


Figure 3. Accidents by type of vehicle on km 983-1012 of the international highway M-39 for 12 months of 2024

The number of accidents in 2024 is 997 km. In 2023, the largest number of road accidents by km was recorded at 997 km. The results of the analysis show that the causes of road accidents are mainly road conditions, a high degree of slope, the condition of the road surface, low visibility of the road when entering and exiting vehicles, as well as dangerous turns. When vehicles move at high speeds, especially on sharp turns and steep slopes, insufficient braking distance increases the risk of accidents. As a result, the area of 997 km is recognized as a high accident point, and special measures to improve road safety are necessary here.

Conclusion

We need to reduce the number of accidents and define the following tasks as work to be carried out:

- taking strict measures against trucks according to road sign 5.8.7;
- taking strict measures against pedestrians who violate the rules;
- Strengthening work on detecting overtaking violations;
- relocation of radar devices installed on the M-39 highway;

- effective use of the "Free Patrol" opportunity to identify violations;
- improvement of road infrastructure;
- Implementation of dynamic road signs.

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