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IMPROVEMENT OF THE ACCIDENT COEFFICIENT METHOD FOR EVALUATING THE HIGHWAY TRAFFIC CONDITIONS

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Statement of the problem. In Ukraine, compared to the developed countries of the European Union, there is a high rate of the road accidents and the number of fatalities is much higher. As a result, the state suffers heavy losses and negative social consequences are observed. The current situation is complex and requires, among other things, the improvement of informational, legal and technical foundations for road safety. An analysis of various road safety measures used on the Ukrainian roads shows that they do not always achieve the desired effect. In this case, methods for assessing the quality of design solutions applied at the design stage can play a positive role.

The purpose of the study. One of the most popular methods used to evaluate design solutions and road conditions of highways for more than forty years is the accident rate method. The method of accident rate is based on the generalization of road accident statistics. It is particularly useful for analyzing road sections that are in operation and subject to reconstruction. The degree of danger of road sections is characterized by the final accident, which is the product of partial coefficient that take into account the influence of individual elements of the plan and profile [1]:

$$K_{підс.} = K_1 \cdot K_2 \cdot K_3 \cdot \ldots \cdot K_n, \quad (1)$$

where K_1, K_2, K_3, K_n are the partial coefficients, representing the number of events at a particular value element of the plan and the profile element in comparison with the reference straight section of the road.

Research results. The use of the latest technologies, especially digital ones, such as dynamic signs, photo-video surveillance systems, the use of digital methods of detecting violations, etc. and information support (road weather stations), which is provided for the use of information on the current state of the road and its elements, has shown a reduction in traffic violations and improvement in road safety [2]. Therefore, the accident coefficient method requires some modernization.

Conclusions. It is recommended that when applying the accident rate method, an additional partial coefficient K_n should be introduced and it takes into account the presence of technical means on the site: dynamic signs, photo- video surveillance systems and appropriate information support for road safety, including road weather stations. Quantitative indicators of this coefficient at this stage require additional research.

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