STUDYING THE IMPACT OF ROAD TRAFFIC CHARACTERISTICS ON THE SPEED OF VEHICLES IN URBAN CONDITIONS.

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ABSTRACT: it is known that traffic flow speed is the main indicator for roads and streets. In this regard, changes in traffic speed on several major highways in Tashkent were studied, and graphs of the distribution curvature were constructed. In addition, graphs of the dependence of the intermediate distance on the speed of movement along the streets were constructed. According to the results of the experiment, the functions and patterns of trajectory change were determined.

Keywords: speed, traffic, lane, modal speed, transport, headlight, barrier, interval, dangerous area, climate, equipment, distribution.

Introduction.
Speed is one of the main indicators in the operation of roads. Based on speed indicators, it is possible to assess the level of ensuring traffic safety, the convenience and equipment of traffic, and its cost-effectiveness. Increasing the speed of movement, on the one hand, increases the efficiency of using the transport system, and on the other hand, increases the risk of road accidents [1]. Therefore, when teaching drivers the course "Traffic Rules and Traffic Safety," special attention is paid to the choice of speed when driving vehicles [2].

LITERATURE ANALYSIS AND METHODS
When writing this article, organizing the experimental work, and obtaining the results, Vasiliev A.P. "Road Design Taking into Account the Influence of Climate on Driving Conditions" [3], Professor Azizov K.Kh. "Fundamentals of Safe Road Traffic" [4], MKN 23-2008 "Instructions for Road Marking Lines on Highways" [5], and information from the website .The article was written based on the results of an experiment obtained in real conditions [6].

DISCUSSION AND RESULTS
If the traffic is intensive, the speed of movement is determined by the composition and intensity of the traffic flow under these conditions. In addition, the speed of the traffic flow also depends on the width of the lanes of the roadway. When driving in urban conditions with favorable climatic conditions, the distance between vehicles should be maintained at least half the speed [7]. This recommendation ensures efficient stopping of nearby vehicles. In foreign experience, it is in large US cities that the expansion of streets and the construction of new ones to ensure traffic speed, and even the construction of highways designed for high-speed vehicle traffic, are being carried out [9]. The most objective indicator on the road is a graph showing the change in traffic speed along the entire route. However, the graph of such a velocity change curve should be constructed using a laboratory vehicle along the route. This creates certain difficulties in practice and in most cases is not feasible. Therefore, in practice, the ability to draw conclusions based on the study of the characteristics of the movement of vehicles on characteristic sections of the road has been developed [10].

In real road conditions, the speed of cars moving individually can vary from 150-120 km/h to 40-30 km/h. On highways, speed is measured using conventional stopwatches, speed measuring

instruments such as "Fara," "Barrier," "Pistol," and various automatic sensors, as well as filming [11].

We construct and analyze the graphs of the velocity distribution curve of vehicles on Fergana Yuli Street in the city of Tashkent, i.e., the speed of movement on each dangerous section of the street, 100m before and 100m after it, was determined, and based on this, the graphs were constructed [12]. That is, the determined velocities for each dangerous section were determined and calculated as follows: V1 - velocity at the entrance to the dangerous section, V2 - velocity at the dangerous section, V3 - velocity at the exit from the dangerous section.
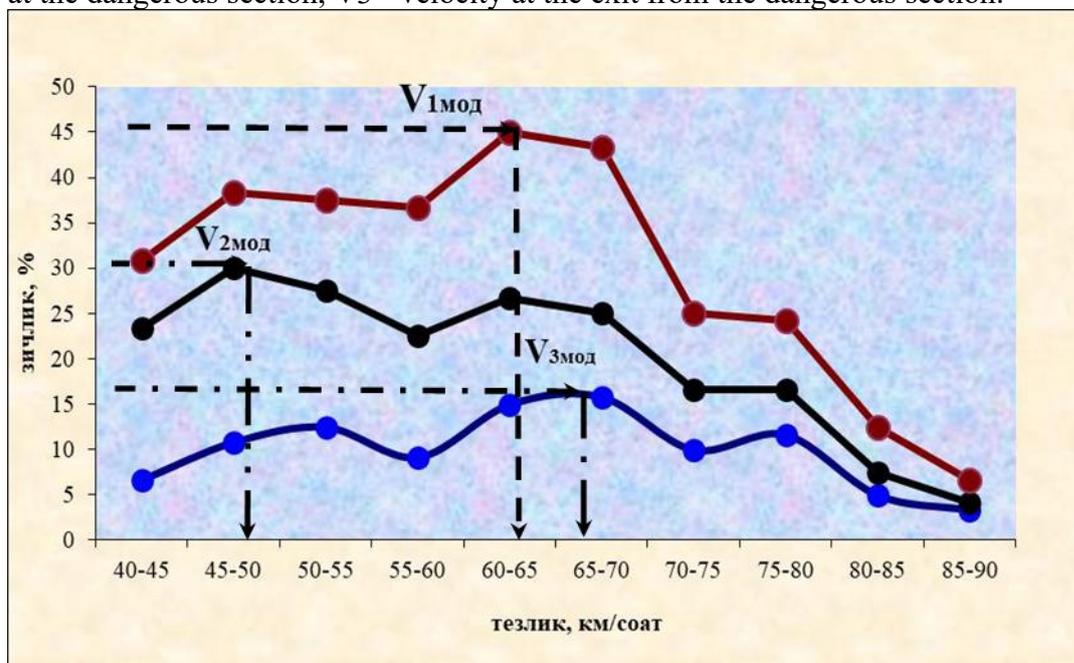

Figure 1. Curve of velocity distribution on Fergana Yuli Street.

As a result of the influence of trees and posters on the dividing strip on Fergana Road Street, the speed of vehicles, i.e., modal speed, changed for all three cases. It was established that the modal speed of vehicles at the entrance to the dangerous section is 60-65 km/h, that is, at a distance of 100 m, the modal speed of vehicles at the dangerous section is 45-50 km/h, and at the exit of 100 m it is 65-70 km/h [13].

We construct and analyze the graph of the velocity distribution curve of vehicles on Khanabad Street in our city and separately determine the change in the modal velocity of vehicles on dangerous sections, the modal velocity of vehicles entering the dangerous section, on the section itself, and exiting the section.
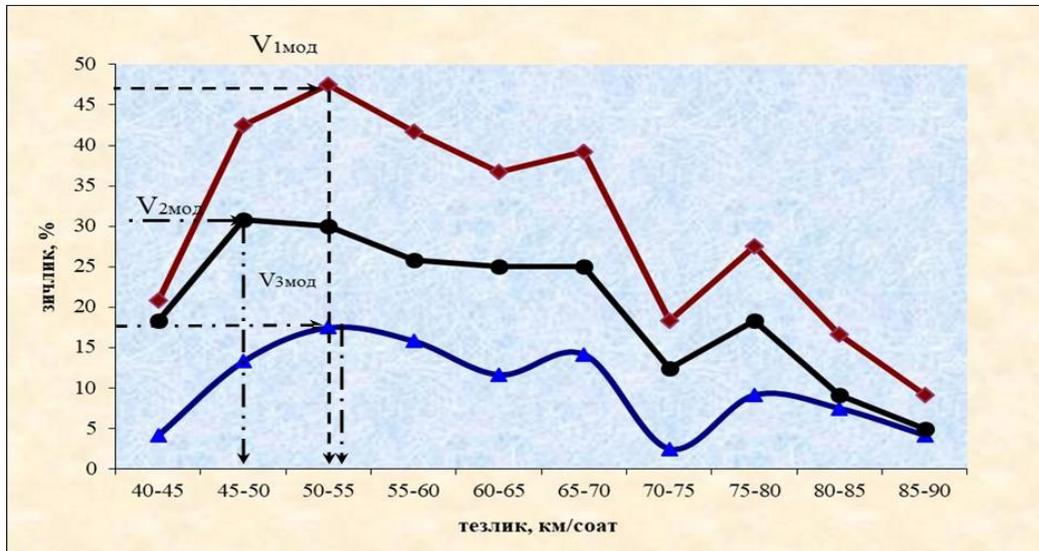
2-rasm. Xonobod ko'chasidagi tezlikning taqsimot egriligi.

Due to the large number of prohibitive signs on Khanabad Street and in residential areas, as a result of chaotic traffic, in the areas near bus stops, and as a result of the influence of various advertising posters, changes in the speed of vehicles, i.e., modal speed, were observed. It was established that the modal speed of vehicles at the entrance to the dangerous section is 50-55 km/h, that is, at a distance of 100 m, the modal speed of vehicles at the dangerous section is 45-50 km/h, and at the exit of 100 m it is 50-55 km/h.

We will determine the change in modal speeds of vehicles in dangerous sections on Yangi Sergeli Yuli Street in our city, in Figure 3. modal speeds of vehicles in dangerous sections, entrance, exit separately, and analyze the graph of the distribution curve of vehicle speeds.
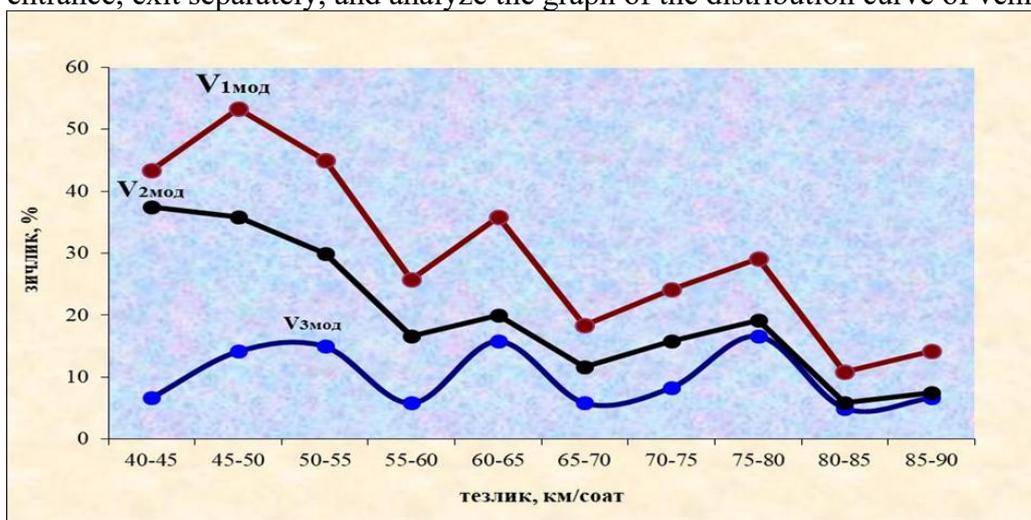

Figure 3. Curve of velocity distribution on Yangi Sergeli Yuli Street.

A decrease in the speed of vehicles is observed as a result of objects on the dividing strip on Yangi Sergeli Yuli Street and their impact, mainly due to the influence of trees that exert their influence, and due to the large number of pedestrians in the car market area on "Saturdays-

Sundays," a change in the modal speed of vehicles was observed. On this street, the modal speed of vehicles was 40-45 km/h, that is, dangerous traffic, and a sharp decrease in the speed of vehicles was observed. This is due to heavy pedestrian traffic, insufficient visibility of road signs, tree branches bending to the ground due to the wind, blocking the road and creating unfavorable conditions for movement. To prevent such situations, it would be advisable to reduce the number of trees by reducing their branches, installing iron dividing fences instead of dividing strips in some places, and the movement of pedestrians would also be regulated.

According to the results of the observation, if we construct a "cumulative density-speed" graph for Fergana Yuli Street, 85% of the provided speed is 70 km/h for cars, 40 km/h for trucks, and for buses.

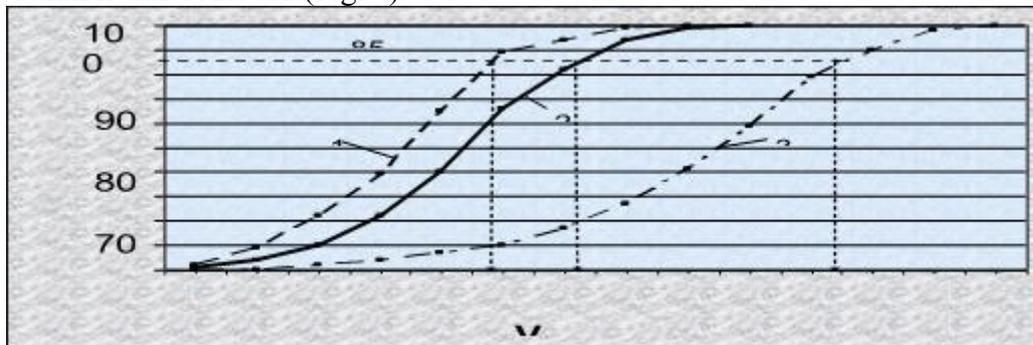45 km/h was observed (Fig. 4).

Figure 4. Ensured speed condition on Fergana Yuli Street.

1-cargo, 2-bus, 3-passenger cars

Also, according to observations on Khanabad Street, where trams do not move, if we construct a "cumulative density-speed" graph, 85% of the provided speed is 65 km/h for cars, 36 km/h for trucks, and 45 km/h for buses (Fig. 5).
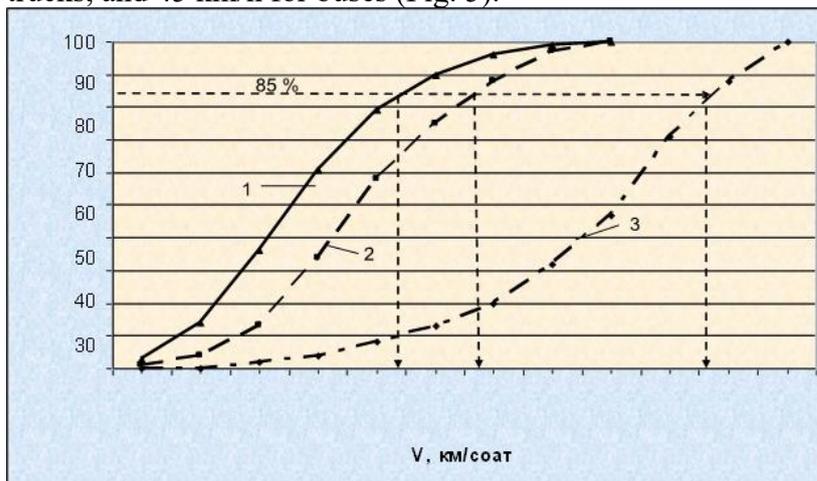

Figure 5. Ensured speed condition on Khanabad Street. Cargo 1,

2 - bus, 3 - passenger cars.

For accurate experimental results, the speed is measured 120 times in each measurement area. The impact of trees on the experimental vehicles is determined in the 50m, 100m entry, and 100m exit zones. The obtained results are plotted on graphs for the purpose of analysis. The reason for placing it on graphs is that the results on the graphs, along with being clearly and accurately visible, show the necessary parameters. In the research work, the influence of road traffic characteristics on traffic safety in urban conditions was determined, which can be represented in the form of graphs.

In this case, a distance of 100 m is selected, and with the help of a stopwatch, the time taken by each car to cover this distance is measured. The speed of the vehicles is determined by dividing the distance by the time traveled by each vehicle.

When determining the graph of the change in traffic speed with respect to time on Fergana Yuli Street (Fig. 7), it was observed that the speed of movement changes with increasing time.

On Fergana Road Street, due to the growth of tree branches at the speed of change in traffic speed relative to the distance, the trajectory of movement changed $y=1.7819x+48.528$; According to the regularities $R2=0.6613$, changes in the speed of movement at intermediate distances were observed.

When determining the graph of the change in traffic speed over time on Khanabad Street (Fig. 8), it was observed that the speed of movement changes steadily with increasing time.

On Yangi Sergeli Yuli Street, the speed changes differently: at the rate of change of the speed of movement relative to the distance, due to some inconveniences in the middle section of the road, the trajectory of movement changes due to advertising signs $y=0.3408x+57.97$; According to the regularities $R2=0.5274$, changes in the speed of movement at intermediate distances were observed.

RESULT

In conclusion, it can be said that the average speed of vehicles on the studied streets, i.e., Fergana Yuli, Khanabad, and Yangi Sergeli Yuli, is 45-60 km/h, and it was found that, mainly on these streets, it varies according to the formulas $y=1.7819x+48.528$, $y=0.7805x+46.303$; $y=0.3408x+57.97$, respectively. Errors in the formulas were - 4%, 2%, and 2% respectively. It was established that with an increase in vehicle speed, it reaches 15-25 km/h.

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