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Traffic Safety in On-Street Parking Area

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ABSTRACT: This article describes the impact of vehicles parked on city streets on the safety of traffic, the possibility of road accidents has been studied in detail. In addition, the work done in this regard abroad, as well as the current state of parking of vehicles on the streets of our country and the existing problems were analyzed.

KEY WORDS: Speed, throughput, stop along the carriageway, traffic accident, commodity flow, motorization.

I. INTRODUCTION

We know that in today's rapidly changing world, speed is one of the most important qualities. Of course, this quality applies to all sectors of society, including the transport sector. That is, the speed of the flow of passengers, the speed of the flow of cargo, the capacity of the road, the absence of traffic jams on the roads, and many similar indicators largely depend on the speed of vehicles moving on the streets. There are many factors that contribute to the normality of these listed cases. One of these factors is the parking of cars across the street. This factor is one of the fastest growing problems in the world, as well as in our country. Today, the number of vehicles in the country, including the capital Tashkent, is growing rapidly. In 2012, the number of vehicles per 1,000 people in Uzbekistan was 59 [1], and in 2018 it will be 74 [2]. Of these, 143.5 in Tashkent. By 2025, Uzbekistan is projected to have 237 people per 1,000 people. As a result, there is congestion on the central streets of the city and a decrease in road capacity. Of course, many factors contribute to this, one of which is the fact that vehicles stop on the central streets of the city along the carriageway. For example, if we observe a number of main streets of the capital Tashkent, we come across many such cases, which can be observed in the streets of regional centers.

II. SIGNIFICANCE OF THE SYSTEM

The article mainly analyzes the possible conflicts in the areas of street parking in the country and focuses on foreign experience in this area. Section III presents the literature review, Section IV presents the methodology, Section V presents the experimental results of the study, and Section VI discusses future research and conclusions.

III. LITERATURE SURVEY

Professors E.Wesley Marshall, W.Norman Garrick, and Gilbert Hansen of the University of Connecticut in the United States conducted research on the advantages and disadvantages of street parking. According to their study, some city centers try to arrange parking on the street as much as possible, while others believe that it is dangerous and an obstacle to traffic.

The National Institute of Technology of India, Professors D. Das and M.A. Ahmed point out that the lack of space in the urban area, the lack of street parking, the high cost of land, intensive development and so on force users to park their vehicles on the street. To solve the parking problem, a separate parking management system should be developed for each urban area.

According to research by Kwame Nkrumah University of Science & Technology scientists Charles Peprah, Charles Y. Oduro and Kafui Afi Ocloo, many important issues related to street parking problems are observations that street parking plays an important role in benefiting different levels of business and other activities. It is also one of the important ways for the city administration to generate revenue in the development of the city. However, uncomfortable culture and attitude problems can make it difficult to organize parking on the street when putting pedestrians at risk. Behavioral and cultural issues have been proven to have a major impact not only on pedestrian safety and the



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sustainability of street parking, but also on all areas of development. Changing the culture of street traffic is an important step in improving effective parking and pedestrian safety on the street.

According to many well-known scientists of the Republic, such as professors of the Tashkent State University of Transport KH Azizov and IS Sodiqov, the generally accepted solution to the problem of parking is to limit the duration of the stop. There are several ways to limit stopping time technically - using special instructions, signs, parking meters, coupons, permits, fees. The experience of developed countries shows that the best way out of this situation is to ban access to the central area, create bypass roads for transit transport, create multi-storey parking lots and develop a public transport network in urban centers. However, these approaches are not always applicable. In this regard, it is advisable to look for other, more effective mechanisms that regulate the organization of parking.

IV. METHODOLOGY

Today, the increase in the number of road accidents is also significantly affected by vehicles parked along the road.

In Norway, parking-related traffic accidents account for 2.4% of total traffic accidents, ie 30% of collisions with parked cars, 25% of collisions with pedestrians overtaking parked cars, and 15% of collisions with parked cars. and 8% of traffic jams at parking lots and parking lots [4,5].

In the United States, parking-related traffic accidents account for 16.5% of total traffic accidents [6]. Today, as a result of population growth in the country, including in the capital, there is an increase in the number of vehicles, which, of course, complicates the movement of vehicles on the streets of our city and leads to an increase in traffic accidents [7-8].

If we look at the analysis of traffic accidents on A.Temur Street in Tashkent in 2016, 2018: in 2016, 16.3% of traffic accidents on this street, included in the State Statistics, in 2018, 33.3% occurred in the area of parking along the street we can see that

Of course, significant work has been done in many developed countries. Looking at the work done today in the near future, the proposed number of parking spaces in Amsterdam, the Netherlands, is 211,457: 86% are street parking lots and 14% are separate parking lots. That is, in the Netherlands, there is a method of placing vehicles perpendicular to the carriageway, which serves to increase traffic safety by reducing the speed of movement on this street [9]. This method is useful on non-busy streets. There is also a parking lot called "Green Zone". These parking lots provide free service to drivers but the parking time here is designed for a very short time and is under constant surveillance and if you stay longer than the set time you will definitely be fined. There are also long-term parking lots in the city called "Park and ride" [8-9]. This parking lot is mainly designed for drivers who do not want to enter the city area by private transport, which means that you can leave your car and move around the city by bus, bicycle or other public transport. These parking lots also have their own services, ie organizations with 10 or more cars on their account provide services on the basis of a flight contract, ie separate spaces are allocated for cars of the contracted organization. Of course, the payment system for these parking lots is also convenient, ie you can pay through a special application on the phone and on the Internet or through the parking meters in the same place [8-10].

V. EXPERIMENTAL RESULTS

The survey was conducted on 10 central streets in Tashkent. The analysis showed that many unorganized parking lots were identified on these streets.

The survey showed that 45.17 km of parking lots along 10 sections of 10 central streets of Tashkent were identified (Table 1). Of these, 26.3% were parked at an angle of 45-60, and 73.7% were parked at an angle of 0, ie parallel to the carriageway. In addition, the analysis showed that more than 50% of a single lane on several streets in both directions was occupied during the day.

Table 1

Information on parking along the central streets of Tashkent

Number of intersections and connections, pcs	Number of tracks	Parking location, km				Parking lots along the street, km	Total length of the street, km	Name of street		№
		Total	0°	90°	45°-60°					
91	4	12,5	4,1		1,4	5,5	34	Right	Kichikhalqayoli	1
102	4		5,5		1,5	7		Left		
22	4	4	1,85		0,55	2,4	3,9	Right	Muqumiy	2
19	4		1,6			1,6		Left		
13	4	1,44	0,72			0,72	1,2	Right	Qoratosh	3
9	4		0,72			0,72		Left		
7	4	2,35	0,15		0,85	1	2,65	Right	Farxod	4
6	4		0,95		0,40	1,35		Left		
12	3	3,14	1,34		0,23	1,57	4,25	Right	Choponota	5
13	3		0,17		1,4	1,57		Left		
18	5	9,8	2		3	5	6,8	Right	ShotaRustaveli	6
27	5		4,3		0,50	4,8		Left		
7	3	1,68	0,45		0,35	0,80	2,4	Right	TarasShevchenko	7
9	3		0,53		0,35	0,88		Left		
15	5	2,75	1,05		0,45	1,5	3,8	Right	A.Navoiy	8
13	5		1,25			1,25		Left		
11	5	1,45	0,65		0,35	1	3,2	Right	Shaxrisabz	9
11	5		0,45			0,45		Left		
39	5	6,06	3,76		0,30	4,06	11	Right	AmirTemur	10
25	5		1,75		0,25	2		Left		
469		45,17	33,29		11,88	45,17	73,2		Total:	

Observations on the central streets of Tashkent in 2008 showed that up to 60% of one lane is occupied by vehicles parked for 4-6 hours a day [12-13]. Observations in 2019 show that the duration of stopping along the carriageway of the road during the day is 10-12 hours.

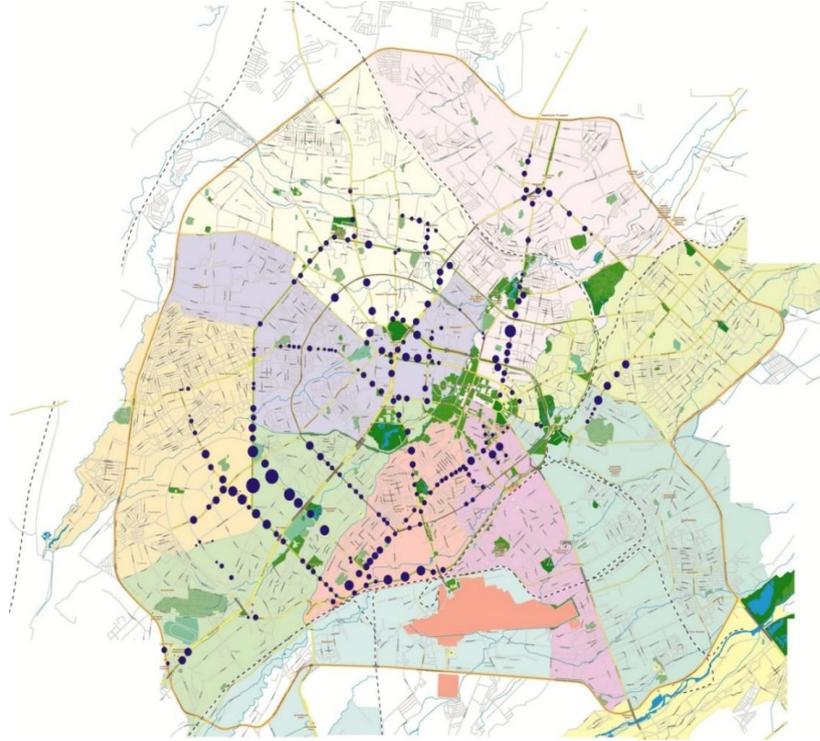


Figure 1. Location of parking lots on the map along the road in Tashkent

VI. CONCLUSION

In conclusion, it can be said from the above analysis that parking lots along the street have a significant impact on traffic safety when not properly organized, which requires scientific research in this area. First of all, unless there is a culture of traffic on the roads, parking along the street will remain one of the risk factors for all road users. To date, a number of scientists in our country have conducted their research in this area, but this research is still insufficient. In our country, the same methods can be used, but these methods must be scientifically based for use in our country.

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