

*V. Novikov, Bachelor student*  
*V. Shumliakivsky, Senior lecturer, research advisor*  
*N. Krushynska, lecturer, language advisor*  
*Zhytomyr State Technological University*

## **ORGANIZATION OF MOTOR-TRANSPORT PARKING FACILITIES IN A MODERN CITY**

The problem of modern cities is a great traffic causing difficulty parking. The need for parking depends on the level of car ownership in the country or region, characteristic of the urban area, the specific gravity of objects and so on. However, the problem of parking is not given due importance. Parking cars is done in violation of existing norms and basic rules of conducting. Because of parking in inappropriate places visibility of conflicting vehicle or pedestrian reduces. Parking on the roadway, sidewalks prevents motor traffic, particularly urban passenger transport. In other words, it has become an urgent problem and dramatically exacerbated by the growth of car ownership. Opportunity of automobile parking in the street depends on its width and traffic. At low traffic (up to 100 cars/hr.) the width of the roadway street must be more than 6 m. The width of the roadway street for one-way streets should be 6-9 m, with the speed of 25-30 km, with a width of more than 9 m it is possible to have two-way traffic. Such parking is allowed only in local streets and on the side (local) rides highways. On the carriageway highways such parking reduces bandwidth of street and significantly increases the risk of movement. The most widely spread method is ground parking, which is not always feasible. It has several types of the of setting vehicles method, namely at angles of 90, 45, 30 degrees to the roadway. Types of setting have advantages and disadvantages in practice. Let us consider the angle of 90 degrees, there is a higher density, but it will need a greater width of the roadway for entry and exit during parking. It will take more time, and this may create a traffic jam. Another picture of the angle parking, lightweight race, occupies a smaller width of the roadway, but needs more space in a longitudinal direction.

In cities there are narrow streets with a large influx of cars. In these places, parking along the roadway is not appropriate. We offer to consider the following types of automatic parking systems:

1. Parking lift:

- work is almost silent and almost inaudible at night (noise level reaches 34dB);
- resistant to vibration;
- low power consumption;
- fast loading and unloading;
- direct entry and exit (all twists and turns made automatic without the driver).

2. Rotary park:

- allows the entire volume of design to create parking spaces;
- direct entry and exit;
- significant noise, which requires automatic parking placed in an isolated part of the building or in the building.

3. Underground parking:

- using mechanized parking systems with robotic car delivery organization underground parking becomes easier;
- due to the increasing amount of compaction car-places underground works can be significantly reduced;
- robotic system eliminates the need to use drivers maneuver in tight spaces;
- moving car-places is performed automatically by the optimized computer program that reduces the possibility of traffic jams at rush hour.

#### 4. Multi level parking:

- ability to organize parking for a large number of cars in the middle of the room, and underground;
- especially useful for automatic parking existing buildings with increased demand for cars.

The best places of the most automated systems will be in the areas of high density of buildings and motorization of the population, for example at shopping malls and business centers, where there is a great need for a vehicle and parking place. Such systems will save 35-50% of the area depending on the type. The price of these varies from 6000-7000 dollars. It is important to note the high speed, for example, the car park or delivery is made for 50-90 seconds. Commercially reasonable price for parking may be 9 hrn. per entry per 1hour, while in the streets of the European countries such as Austria, Italy, Germany, the Netherlands, the price of parking on average is 2 dollars and limited in time.

Thus, implementing the types of parking stated above, you can significantly reduce congestion, provide the rational use of local area and provide comfort to the residents of the city.