**Popov S.Yu., Stolyarov K.A.**

# CHANGING CAPACITY OF ONE DIRECTION TWO LANE SPAN, USED BY PASSENGER TRANSPORT BY REASON OF ONE OCCUPIED LANE

*Automobile-roads Institute*
*of Donetsk National Technical University, Ukraine*

The current situation of growth of transport networks due to load increase of motorization, increasing the number of places of gravity (offices, shops, banks, etc.).

This problem is particularly acute in the central parts of cities and arterial road.

Initiates congestion factors such as poor drivers culture, disregard of traffic rules; irregularly organization markings, improper placement of road signs, parking and stopping of vehicles is not organized in accordance with the regulations.

Particularly affects the reduction of bandwidth for traffic lanes with a dual movement of the vehicle in an unauthorized place.

One of many examples: when people paste big-boards above the roadway, left his car, blocking traffic on the strip.

In this case, a situation which employs one lane and traffic is only one lane. A general view of the intensity on the road with two lanes in one direction will have the form:

$$N_{span} = N_{1\ lane} + N_{2\ lane}$$

where $N_{span}$ - the intensity of car traffic on span with two lanes in one direction, vehicles / pieces of time.

$N_{1lane}$ - the intensity of car traffic in the lane with two lanes in one direction (without obstacles to movement), motor vehicles / pieces of time.

$N_{2\ lane}$- the intensity of car traffic in the lane with two lanes in one direction (which was an obstacle to the movement), motor vehicles / pieces of time.

The intensity of the transport of two lanes in one direction, with busy one lane will be of the form:

$$N_{span} = N_{1\ lane} + N_{2\ lane}$$

when $N_{2\ lane} = 0$

$$N_{span} = N_{1\ lane}$$

The cluster of cars in one lane maneuvers associated with the evolution, etc. Will reduce the overall flow rate. Where allowed to block the movement of passenger transport on the roads with busy traffic route one band is forced to go to the strip without obstacles to movement (Figure 1).

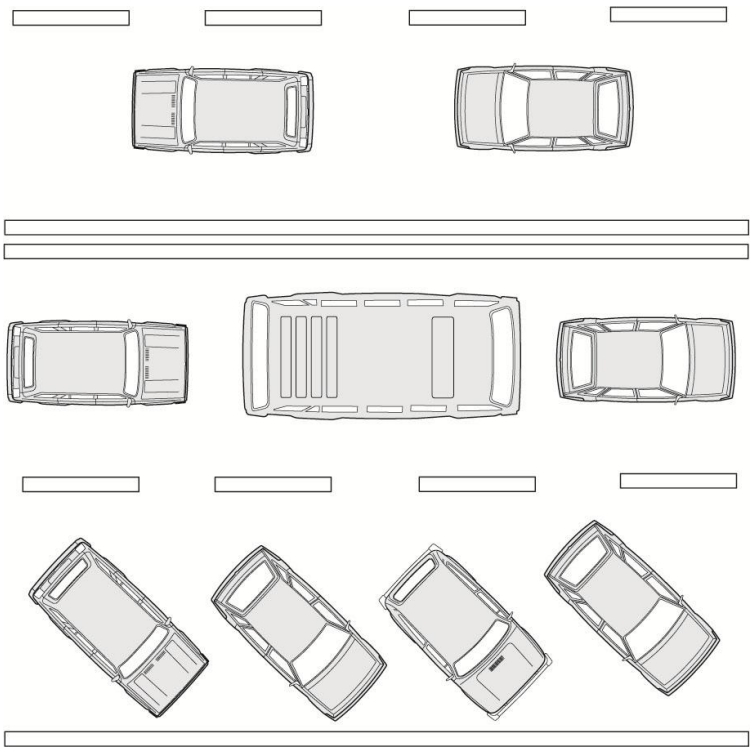

Figure 1.

Check the route of transport would cause decrease in the total flow rate to the speed of the route of transport, ie:

$$V_{flow} = V_{passenger\ transport}$$

here $V_{flow}$ - speed of traffic flow, km / hr.

$V_{passenger\ transport}$ - speed passenger transport route in km / hr.

The next stage in this chain - increasing the length of the flow for the next shuttle transportation, and consequently the number of vehicles on the road will exceed the capacity of the road.

The increase in the queue would lead to congestion, not only for the transport of the city and the city, but also in regulated and unregulated intersections of roads in the same level. The above underlines the relevance of the topic and provides a rationale for further research.

References:

1. Matson T.M., Smith W.S., Hurd F.W. Traffic engineering.- New York.: McGRAW-Hill book company inc., 1955.- 462 p.
2. Поліщук В.П., Загоруй О.О. До питання щодо паркування автомобілів // Коммунальное хозяйство городов. – К.: Техніка, 2004. – Вып. 58. – С. 175–180.