

LCQ4: Automatic toll collection system of tolled tunnels and roads

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Following is a question by the Hon Chan Kam-lam and a reply by the Secretary for Transport and Housing, Ms Eva Cheng, at the Legislative Council meeting today (June 29):

Question:

According to the information of the Transport Department, the overall utilisation rate in February 2011 of the Autotoll toll collection system (Autotoll) at tolled tunnels and roads was only 47%, and that the Autotoll utilisation rate at the Cross Harbour Tunnel in Hung Hom was only 39%. Quite a number of drivers have reflected that owing to insufficient provision of Autotoll lanes at the cross harbour tunnels, there are often long vehicle queues and some drivers who have already opened an account with Autotoll are therefore forced to give up using such lanes and switch to using manual toll booths where the queues are shorter, and thus the automatic toll collection system at the tunnels fails to achieve the effect of easing traffic flow. In this connection, will the Government inform this Council:

(a) whether the authorities have conducted a review on the aforesaid situation, including re-assessing the number of Autotoll lanes available at various tunnels; if they have, of the situation;

(b) whether the authorities have conducted a study on how to facilitate the enhancement of the Autotoll utilisation rate so that the automatic toll collection system can achieve a greater effect in easing traffic flow; and

(c) given the serious traffic congestion at the Cross Harbour Tunnel in Hung Hom, whether the authorities will first consider increasing the number of Autotoll lanes at the Cross Harbour Tunnel in Hung Hom so as to attract more drivers to use the automatic toll collection system and reduce the frequency of long queues appearing at such lanes at present; if they will, of the time of implementation; and whether the authorities will consider converting some of the manual toll collection lanes to Autotoll lanes during rush hours?

Reply:

President,

Both manual and automatic toll collection lanes are available at all tolled tunnels and roads in the territory for motorists to choose between making toll payment in cash or electronically. Since October 1998, all tolled tunnels and roads have adopted the "Autotoll" fully automatic toll collection system.

There are currently nine tolled tunnels, namely the Cross-Harbour Tunnel (CHT), Eastern Harbour Crossing, Western Harbour Crossing, Lion Rock Tunnel, Aberdeen Tunnel, Tseung Kwan O Tunnel, Tate's Cairn Tunnel, Shing Mun Tunnels and Tai Lam Tunnel, and two tolled roads, namely the Lantau Link and Tsing Sha Highway (Sha Tin - Cheung Sha Wan Section) in Hong Kong. All of them are equipped with automatic toll collection system. The distribution and number of automatic toll collection lanes available at various tolled tunnels and roads are generally determined by the traffic flows of these tunnels and roads, and the utilisation rates of such lanes.

My reply to the three parts of the question is as follows:

(a) and (b) According to the information provided by the Autotoll Limited, there are currently 250,000 Autotoll tags in circulation. At present, automatic toll collection lanes account for about 30% to 40% of the total number of toll collection lanes, while the number of vehicles using such lanes accounts for about 40% to 60% of the total traffic flow at various tolled tunnels and roads.

According to the observation by the Transport Department (TD), given the shorter transaction time of an automatic toll collection lane over a manual toll collection lane, automatic lanes can handle 5 times the traffic flow of manual toll collection lanes. Hence, although the ratio of automatic toll collection lanes is lower than the utilisation rate of such lanes, it is still adequate in meeting the demand of motorists choosing automatic toll payment.

In the case of the CHT, among the 16 toll collection lanes, 6 or 38% are automatic toll collection lanes (i.e. 3 for Kowloon-bound and 3 for Hong Kong Island-bound traffic), while the number of vehicles using such lanes accounts for 39% of the total traffic flow, hence the ratio of automatic toll collection lanes at the CHT is comparable to the utilisation rate of such lanes.

As regards the CHT, when the traffic inside the tunnel tubes becomes congested, some motorists may see longer queues at automatic toll collection lanes than at manual toll collection lanes. This phenomenon is mainly due to more manual toll collection lanes available for vehicles to spread out into different queues. In reality, automatic toll collection lanes handle a higher amount of traffic flow than manual toll collection lanes. Although at times the queues at manual toll collection lanes appear shorter, the actual journey time using automatic toll collection lanes is shorter than using manual toll collection if the actual transaction time is taken into account. According to a site survey conducted by the CHT operator in June 2011, the travelling time (including waiting time in the queue) from near the footbridge connecting to Hong Kong Polytechnic University to the toll booths (about 150 metres) during morning and evening peak hours was slightly more than 50 seconds for using the manual toll collection lanes, and only about 40 seconds for using the automatic toll collection lanes.

TD reviews from time to time the utilisation rates of automatic toll collection lanes at various tolled tunnels and roads and monitors closely their utilisation. If the review findings show that there is a need for increasing the number of automatic toll collection lanes and that such measure would actually be able to improve the traffic flow, and, among other considerations, would not cause inconvenience to users of manual toll collection lanes as a result of a reduction in the number of such lanes, TD will adjust the number of automatic and manual toll collection lanes respectively. In fact, in response to demand, the number of automatic toll collection lanes at the CHT for Kowloon-bound and Hong Kong Island-bound traffic was increased from 2 to 3 in December 2001 and May 2002 respectively.

It is the Government's policy to provide both manual and automatic toll collection lanes at all tolled tunnels and roads in the territory to allow motorists to choose between making toll payment in cash or electronically according to their needs after taking into account such factors such as the time saving, convenience and cost-effectiveness in using automatic toll collection lanes. TD will determine the appropriate number of manual and automatic toll collection lanes at various tolled tunnels and roads in the light of their utilisation rates and traffic flows so as to provide road users with a choice in toll payment.

(c) Since the existing number of automatic toll collection lanes at the CHT should be able to meet the demand of motorists choosing to use these lanes, and that it takes a shorter time to use automatic toll collection lanes than manual toll collection lanes at

the CHT, increasing the number of automatic toll collection lanes at the CHT may not allow more vehicles to use the tunnel simultaneously or further improve the traffic flow.

The proposal of converting some manual toll collection lanes at the CHT to automatic toll collection lanes during peak hours involves changing the payment mode at certain toll collection lanes at different time periods of a day. This will result in longer waiting time for motorists using manual toll collection lanes. In addition, due to the need to display corresponding road signs and traffic signs at the tunnel area and approach roads to direct motorists to the automatic toll collection lanes, if some manual toll collection lanes are converted to automatic ones or the relevant road signs and traffic signs are changed during peak hours only, motorists may be easily confused resulting in traffic chaos and potential safety risks. Given the above reasons, we are of the view that the proposal may not be able to ease the traffic congestion at the CHT, and has its drawbacks.

Nonetheless, in order to improve the traffic situation at both exits of the CHT, the Government and the tunnel management company have been taking various traffic control measures, such as closing some of the manual toll collection lanes in the Hong Kong Island-bound direction intermittently during peak hours to alleviate the traffic flow at the automatic toll collection lanes, and to ensure a smooth traffic flow as a whole. Such arrangements not only can improve the traffic flow at the automatic toll collection lanes but also retain certain flexibility to enable tunnel users to freely choose their means to pay tolls. We will closely monitor the traffic situation at the CHT and review the current arrangements from time to time for making appropriate adjustments when necessary.

Ends/Wednesday, June 29, 2011

Issued at HKT 15:09