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Panel on Transport

Subcommittee on Matters Relating to Railways
Meeting on 28 February 2014

Background brief on capacity and loading of MTR trains

Purpose

This paper provides background information on capacity and loading of MTR trains. It also summarizes the major views and concerns expressed by Members during previous discussions on this subject.

Background

2. In accordance with 2014 Policy Address, the Administration will continue to develop a transportation system centred on public transport with railway as the backbone in order to alleviate road congestion and roadside emissions. According to the Administration¹, railways account for nearly 40% of daily public transport passenger travel and about 60% of land-based cross-boundary passenger trips to the Mainland.

3. In response to a Member's question raised at the Council meeting on 4 December 2013, the Administration has advised that with a view to alleviating crowdedness on trains and reducing passengers' waiting time, the MTR Corporation Limited ("MTRCL") in 2012 added more than 1 200 train trips per week (that is, over 62 000 train trips per year) on busier railway lines vide the launching of the \$1 billion "Listening • Responding" programme. In 2013, MTRCL further enhanced train service on some railway lines, including East Rail Line, Island Line, West Rail Line, Kwun Tong Line and Tsuen Wan Line, to meet the needs of passengers.

¹ Chapter 13, 2012 Government Yearbook: <http://www.yearbook.gov.hk/2012/en/pdf/E13.pdf>

4. In 2014 Policy Address, the Administration mentioned that the public transport system will be improved as the 5 new railway projects under construction are expected to be completed between 2014 and 2020. In addition, the Administration will announce shortly a new railway development blueprint setting out new railway projects to be implemented after 2020. It is scheduled that the Administration will brief members on the review and update of the Railway Development Strategy 2000 at the Subcommittee meeting to be held on 2 May 2014.

Major concerns raised by Subcommittee on Matters Relating to Railways ("the Subcommittee")

5. Members have expressed views and concerns on capacity and loading of MTR trains in the previous Subcommittee meetings held on 1 March, 5 July, 25 October 2013 and 3 January 2014.

Standard for measuring crowdedness of train compartments

6. At the Subcommittee meetings on 1 March, 25 October 2013 and 3 January 2014, members showed concern on the crowdedness problem in MTR train compartments during peak hours and suggested that the Transport Department should take the lead to set the standard of crowdedness inside trains and on platforms of stations. Also, they suggested that an objective definition would make discussions on improvement of railway service more meaningful.

7. Recently, the Legislative Council Secretariat's Research Brief Issue No. 4 has been released in January 2014 (in **Appendix I**) which indicated that Hong Kong does not have any specific indicator for measuring crowdedness of train compartments. The Administration² has anyway advised previously that the maximum railway carrying capacity per hour per direction is currently 85 000 passenger trips for Kwun Tong Line, Tsuen Wan Line and Island Line of MTR, with the average occupancy rate at almost 70% for both morning and afternoon peak hours. Nevertheless, cities like New York, Berlin, Singapore and Beijing have set out the number of standees per square metre ("m²") as the measurement for crowdedness of train compartments. For example, New York considers 4 standees per m² as crowdedness while Beijing sets the standard at 5 standees.

² Source: The Administration's paper on "Our Future Railway" Stage 2 Public Engagement Exercise in February 2013 [LC Paper No. CB(1)595/12-13(03)]

Measures to alleviate crowdedness in MTR trains

8. Some members at the Subcommittee meetings on 25 October and 5 July 2013 expressed views that MTRCL should address the problem of over-crowdedness during peak hours by implementing necessary measures, like the launch of early bird discount to reduce the demand at peak hours. They also suggested increasing train frequency and developing new railway projects in the long run to alleviate the problem.

Legislative Council questions

9. Hon CHAN Hak-kan, Hon LEUNG Che-cheung and Hon Tony TSE Wai-chuen expressed concern over carrying capacity and loading of MTR trains and raised Council questions on 20 February, 17 July and 4 December 2013 respectively. They were mainly worried about the crowdedness problem in MTR trains, in particular East Rail Line, Ma On Shan Line and West Rail Line, and urged the Administration and MTRCL to implement measures to alleviate the problem. The questions and the Administration's replies are attached in **Appendix II** for members' reference.

Recent developments

10. The Administration is invited to brief members on the capacity and loading of MTR trains at the Subcommittee meeting to be held on 28 February 2014.

Relevant papers

11. A list of relevant papers is in **Appendix III**.

Council Business Division 1
Legislative Council Secretariat
25 February 2014

Research Brief Issue No. 4

Measures to ease crowdedness of train compartments in overseas cities

January 2014

Crowdedness of train compartments during peak periods has been an area of concern for many large cities of the world, including Hong Kong. Yet, Hong Kong has not fully utilized transportation management measures to address the issue.

There are three major areas where Hong Kong could draw reference from cities like New York, London, Singapore, Tokyo and Beijing. First is to set out a benchmark to measure the extent of crowdedness. Second is the adoption of off-peak pricing strategy to spread out peak period travel. Third is the use of transport management measures to ease crowdedness during peak periods. This Research Brief gives an account of the transport management measures employed by Singapore to deal with the issue of crowdedness during peak hours.

The subject of transport services falls within the policy areas of the Panel on Transport.

1. Background

1.1 Mass Transit Railway ("MTR") is the most popular transport mode in Hong Kong, accounting for about half of the market share of the franchised public transport market. As one of the busiest railway systems in the world, MTR carried 1 431 million passengers in 2012. This ridership figure puts Hong Kong almost on a par with New York (1 655 million) and London (1 229 million), and well above Singapore (688 million) and Berlin (507 million).

1.2 Hong Kong's heavily patronized MTR network comes with the problem of crowdedness¹ in train compartments during peak hours. Faced with the same problem, many large cities have made use of travel demand management (particularly off-peak pricing) and/or transportation supply management (such as increasing train frequencies and deploying longer trains²) measures to alleviate crowdedness. Some of these cities have also created a benchmark to measure crowdedness before arriving at any transportation management initiatives to address the crowdedness problem.

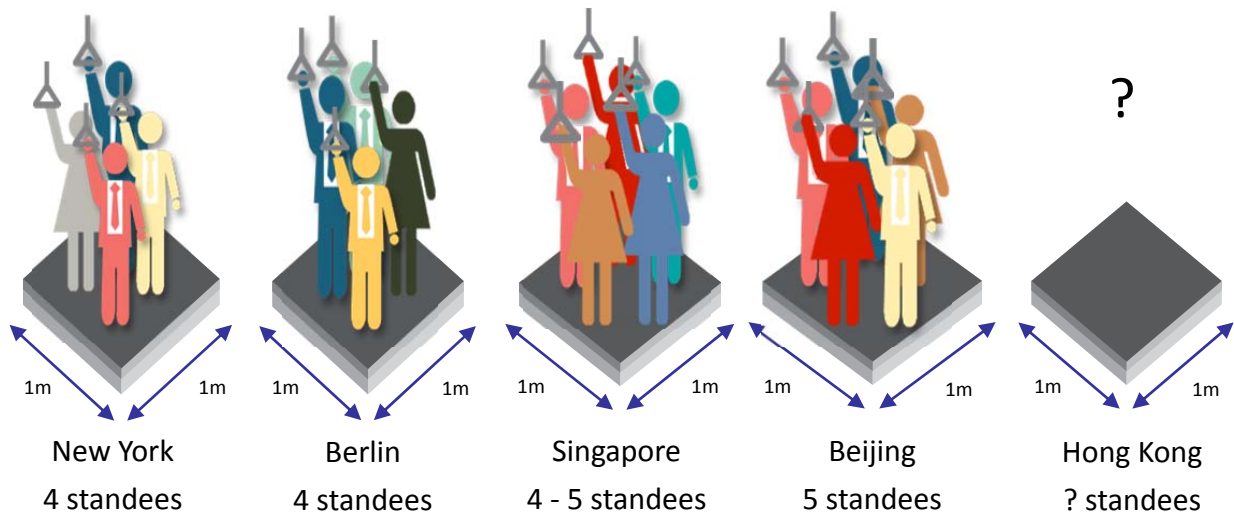
¹ Overcrowding may affect the health and safety of passengers in at least two ways: (a) injury and stress from overcrowding itself, and (b) the possibility of increased risks in the event of an accident.

² The length of platform may constraint the feasibility of deploying longer trains to ease crowdedness during peak hours.

2. Measuring crowdedness of train compartments

2.1 Cities like New York, Berlin, Singapore and Beijing have set out the number of standees per sq m as the measurement for crowdedness of train compartments. For example, New York considers four standees per sq m as crowdedness while Beijing sets the standard at five standees (see **Figure 1**).

Figure 1 – Standard for measuring crowdedness of train compartments



2.2 In contrast, Hong Kong does not have any specific indicator for measuring crowdedness of train compartments. There are calls from the public for the Government and the MTR operator (i.e. the MTR Corporation Limited) to measure crowdedness in order to ascertain the seriousness of the problem and the requirement for relief measures. In response, the Government has advised that the maximum railway carrying capacity per hour per direction is currently 85 000 passenger trips for the Kwun Tong Line, the Tsuen Wan Line and the Island Line of MTR, with the average occupancy rate at almost 70% for both morning and afternoon peak hours.³

³ See GovHK (2013).

3. Off-peak pricing

3.1 Demand for train services varies throughout the day, particularly during peak and non-peak hours. As such, many cities have made use of off-peak pricing to shift some of the demand for train services during peak periods to off-peak periods, as an attempt to reduce peak period crowdedness and bring about a more efficient use of rail network capacity. Commuters benefit from off-peak pricing in terms of a more comfortable travel experience and lower fares for using the train services.

3.2 Against the above, cities such as Berlin, Tokyo and London have adopted off-peak pricing approach and put in place different incentive schemes to attract commuters travelling during non-peak hours (see **Table 1**). There has been a lack of similar schemes in Hong Kong since the implementation of "Early Bird Passes" in 1988⁴ and "Staggered Hours Discounts" in 1990⁵ to relieve crowdedness during peak hours.

Table 1 – Off-peak pricing measure adopted in Berlin, London and Tokyo

	Berlin	London	Tokyo
Railway operator	Government department or public corporation		
Discount ticket	10 a.m. monthly pass	Oyster card (a smart card for paying train fares)	Off-peak coupon ticket
Use of the ticket	Mondays to Fridays after 10 a.m., and Saturdays, Sundays and public holidays	Mondays to Fridays (excluding public holidays) from 9:30 a.m. to 3:59 p.m. and after 7 p.m., and Saturdays and Sundays	Mondays to Fridays from 10 a.m. to 4 p.m., and Saturdays, Sundays and public holidays
Rate of discount off the regular fare	About 28%	25% - 40% depending on the number of zones travelled. The more zones the commuters travel, the bigger the discount they can enjoy	About 9%

Sources: Berliner Verkehrsbetriebe (BVG) (2014), Transport for London (2014) and Tokyo Metro (2014).

⁴ The early travel discount scheme was implemented between June 1988 and April 1990.

⁵ The discounts were introduced in May 1990, but they were withdrawn in June 1999.

3.3 Nevertheless, there is a limit to the effectiveness of off-peak pricing in addressing peak period crowdedness as it hinges on the responsiveness (or the elasticity of demand) of commuters to the lower fares they can enjoy during non-peak hours. The elasticity of demand depends on factors such as:

- (a) percentage of income taken up by transportation costs – the higher the percentage of a commuter's income goes to transportation cost, the greater will be his or her incentive of using the cheaper train services during non-peak hours;
- (b) duration – the longer the fare discount holds, the more will be the time available for the commuters to change their travel habits; and
- (c) size of fare discounts – the bigger the fare discounts, the more willing the commuters will be to take trips during off-peak hours.

4. Singapore: a case study

4.1 Singapore features an integrated approach with employing transportation management measures on both demand and supply sides to address the crowdedness of train compartments during peak hours. The aim of the transportation demand management measures is to encourage commuters to travel during non-peak hours, while the aims of the supply transportation management measures are to provide quality train services and minimize service delays that may cause unnecessary crowdedness.

Transportation demand management

4.2 The core programme of Singapore's transportation demand management is the implementation of a one-year travel free trial on the rail network⁶ starting from June 2013.⁷ Passengers who end their journey before 7:45 a.m. on weekdays (excluding public holidays) at 16 designated subway stations located at the city centre are able to travel **free of charge**. For those who miss the cut-off timing for free travel by a few minutes and exit these stations between 7:45 a.m. and 8:00 a.m., they can still enjoy up to a discount of S\$0.5 (HK\$ 3.1) off their regular train fare. The Singaporean government has earmarked a total of S\$10 million (HK\$62 million) to finance the two rail operators to conduct this one-year trial programme.

⁶ The mass transit railway system in Singapore is operated by two listed companies, namely SMRT Corporation Limited and SBS Transit Limited. The SMRT Corporation Limited is owned by Temasek Holdings, an investment company of the Singaporean government, with a controlling stake of 54% at end-January 2013.

⁷ Prior to the implementation of the one-year travel free trial programme, Singapore offered up to S\$0.5 (HK\$3.1) discount for passengers who exited at 14 designated rail stations in the central business district before 7:45 a.m. However, the results were not satisfactory with a mere 3%–4% shift of commuters out of the morning peak hours.

4.3 In an effort to promote the free travel programme, the Singaporean government offers the Incentives for Singapore's Commuters programme ("INSINC programme"). Passengers automatically earn 1 point for every 1 km travelled on the train all day Monday through Friday. The INSINC points can be converted to cash rewards, which will be transferred to the commuter's Cepas card⁸ each month. Commuters are rewarded with additional points for travelling during the period preceding or following the peak hours of 7:30 a.m.–8:30 a.m.

4.4 The Singaporean government has also worked with key stakeholders to promote the free travel programme. For example, it has requested the two rail operators to run more trains during the morning pre-peak period in order to cope with the expected increase in ridership. The government also encourages 12 private companies with a total workforce of some 25 000 employees to offer more flexible work and travel arrangements under the "Travel Smart" programme. A management consultant has been appointed by the government to help these companies identify the steps needed so that their employees can change their work commute patterns.⁹ Apart from private companies, more than 40 public agencies located near the designated rail stations have introduced flexi-work practices for their 14 000 employees.

4.5 The Singaporean government hopes that the free travel programme plus flexi-work arrangements could divert 10%–15% of morning peak-hour commuter traffic to off-peak periods. According to the preliminary results from the first week of the trial, there was a decrease of about 7% of commuters exiting the 16 designated city stations during the peak period between 8 a.m. and 9 a.m.

Supply travel management

4.6 While planning to expand the rail network capacity, the Singaporean government has also implemented other measures to improve train services to ease crowdedness of train compartments:

- (a) adding more trains to the rail line, so commuters can have more frequent train arrivals, and less crowding and more comfortable rides;
- (b) upgrading the signalling system to enable trains to run at shorter intervals;

⁸ Cepas Card is an electronic money smart card used in Singapore.

⁹ Three of the 12 companies under the "Travel Smart" programme have already put in place flexi-work arrangements such as introducing IT facilities to enable employees to work remotely at home.

- (c) increasing train frequencies during the shoulder peak periods¹⁰ to reduce waiting time;
- (d) tightening the operating performance standards that the train operators must meet in minimizing service delays,¹¹ and
- (e) enforcing stringent maintenance and service reliability requirements.

5. Observations

5.1 In large cities, a heavily patronized railway network usually comes with crowdedness of train compartments during peak hours. Yet Hong Kong has not fully utilized transport management measures to address the peak period crowdedness. The last time Hong Kong implemented off-peak pricing strategy was in 1988-1990 when it introduced "Early Bird Passes" in 1988 and "Staggered Hours Discounts" in 1990 to ease crowdedness during peak hours. From the experience of cities like New York, London, Singapore, Tokyo and Beijing, there are three areas which Hong Kong may draw reference when addressing the problem in crowdedness of train compartments during peak hours, namely:

- (a) measurement of crowdedness – New York, Berlin, Singapore and Beijing have measured crowdedness in terms of the number of standees per sq m. An objective benchmark enables these cities to ascertain the seriousness of crowdedness as well as identify suitable transport management measures to ease the peak period crowdedness;
- (b) off-peak pricing scheme to spread out peak period travel – Berlin, London and Tokyo all make use of financial incentive schemes to ease peak period crowdedness on their rail networks. The mass transit railway companies in these three cities are owned and managed by the government department or public corporation. This affords them to provide fare discounts during non-peak hours without facing the shareholder pressure.

¹⁰ Shoulder peak is a period precede or follows the peak period.

¹¹ For instance, financial penalties are imposed if train disruptions lasting more than 30 minutes occur more than once in any four-week period. Excessive occurrences of shorter train delays (i.e. delays of more than five minutes) that cause inconvenience to commuters will also be penalized.

In Singapore, while the mass transit railway system is operated by two listed companies, it has not prohibited the Singaporean government from pushing through an off-peak pricing system by financing the two rail operators to launch the one-year travel free trial scheme during morning pre-peak hours; and

- (c) integrated approach with transport management measures on both demand and supply sides to address peak period crowdedness. Singapore is a showcase example of employing such integrated approach, particularly its focus on demand side measures featuring the introduction of free travel trial scheme and the complementary flexi-work arrangements in both private companies and public agencies.

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Press Releases

LCQ6: Services of MTR East Rail Line and Ma On Shan Line and KMB in North District

Following is a question by the Hon Chan Hak-kan and a reply by the Secretary for Transport and Housing, Professor Anthony Cheung Bing-leung, in the Legislative Council today (February 20):

Question:

To alleviate the overcrowding in train compartments and reduce passengers' waiting time, the MTR Corporation Limited (MTRCL) last year increased the train trips of a number of railway lines, except for East Rail Line and Ma On Shan Line. On the other hand, while the overall patronage of the Kowloon Motor Bus Company (1933) Limited (KMB) has reportedly been dropping in the past 10 years, the patronage of bus routes for the North District in the same period has increased by 20%. Quite a number of residents of New Territories East (NTE), particularly those from the North District, have relayed to me that the aforesaid situation may be attributed to over-loading of the East Rail Line and Ma On Shan Line, resulting in some NTE residents switching to travelling by bus. These residents have also pointed out that at present the bus services between the North District and urban areas are seriously inadequate, causing great inconvenience to them. In this connection, will the Government inform this Council:

(a) of the respective patronage of the East Rail Line and Ma On Shan Line and, among such figures, the respective numbers of passengers travelling to and those not travelling to Lo Wu and Lok Ma Chau Control Points, in the past five years; whether it knows why MTRCL did not increase the train trips of the two railway lines last year, as well as whether MTRCL has assessed if the train compartments of the two railway lines are overcrowded during peak hours and if the existing train trips can meet the demand; if MTRCL has assessed, of the details; if not, the reasons for that;

(b) of the respective patronage of KMB throughout the territory and in the North District in the past five years; the 10 most patronised bus routes in the North District and the respective average patronage of these routes; apart from the trial run of restructuring the bus routes in the North District, the other specific plans of KMB (such as increasing bus trips and adding bus routes) to ameliorate the inadequacy of bus services between the North District and urban areas; and

(c) of the existing mechanisms which the Transport Department (TD) has in place for co-ordinating the services provided by the various public transport operators for residents in NTE (particularly the North District); whether TD has plans to conduct in this year passengers' satisfaction surveys on the services provided by public transport operators; given NTE's rising population, whether the authorities will request the

public transport operators to provide the residents with more convenient and diversified services according to the actual situations?

Reply:

President,

It is the Government's public transport policy to use railways as the backbone, with franchised buses providing feeder service as well as direct service to destinations not served by railways. Other public transport modes play a supplementary role to allow passengers to have choices. The Transport Department (TD) has been making plans for public transport services according to this policy, taking into account district developments and demographic changes.

Our reply to the questions raised by the Hon Chan is as follows:

(a) When determining the service frequency of various railway lines including the East Rail Line (EAL) and Ma On Shan Line (MOSL), the MTR Corporation Limited (MTRCL) will consider such factors as patronage, carrying capacity, waiting time of passengers, and the railway network expansion plan, etc., with a view to meeting demand. In the light of passenger growth, MTRCL has adjusted the service frequency during the morning peak hours since 2009 by operating short-haul trips from stations such as Tai Po Market and Fo Tan to pick up Hung Hom-bound passengers waiting at busy stations.

Patronage and train loading of the EAL and MOSL from 2008 to 2012 are at Annex I.

Currently, during the morning peak hours on weekdays, the EAL trains run at an average headway of about 2 minutes and 45 seconds at the busiest section (Fo Tan Station to Hung Hom Station) while the MOSL trains operate at an average frequency of about 3 minutes. During peak hours, some passengers, particularly those waiting at Sha Tin Station or Tai Wai Station, may not be able to get on the first train arriving at the platform.

As shown in Annex I, the average loading of the EAL trains during morning peak hours on weekdays is 71%. This is similar to the situation of other busier railway lines such as Tsuen Wan Line and Island Line. The majority of passengers crowd at the central part of the train. MTRCL has undertaken to strengthen platform management and divert passenger flow to both ends of the train, with a view to alleviating the crowdedness. As a matter of fact, MTRCL employed more than 200 additional Platform Assistants in the past two years for the EAL and MOSL to ensure smooth passenger flow during peak hours. MTRCL will closely monitor the situation and will increase the manpower if necessary.

Currently, as the EAL is limited by its signalling system, and that it has to cater for the Guangdong-Kowloon Through Train, it is unable to increase train frequency. Immediate procurement of new trains would have little help, as the current

train frequency of EAL has almost reached the limit of the signalling system. When the Shatin-to-Central Link (SCL) Tai Wai to Hung Hom Section is in service in 2018, it is estimated that approximately 23% (about 74 000 passengers per day) of the southbound passengers from the New Territories will switch to use the SCL to travel to urban areas, thus diverting passenger flow. The signalling system of EAL will be upgraded in 2020 under the SCL project to enable an increase in train frequency. The overall carrying capacity will further increase by about 12 000 passengers per day when the SCL Hung Hom to Admiralty Section is in operation.

Before the commissioning of the first section of SCL, it is expected that the Express Rail Link will come into service in 2015. The Government will monitor whether the demand for Guangdong-Kowloon Through Train service will be reduced by then. If so, we will explore whether rail capacity could be released to strengthen local EAL service.

(b) In the past five years, the average daily patronage of The Kowloon Motor Bus Company (1933) Limited (KMB) dropped by about 4%, from about 2.7 million in 2008 to about 2.58 million in 2012. Over the same period, the patronage of KMB routes in the North District rose by about 7%, from about 164 000 to about 175 000. In 2012, each of the ten most patronised bus routes serving the North District, as shown in Annex II, handled a passenger volume ranging from about 6 500 to 18 000 on average everyday.

The bus services of KMB in the North District have been enhanced in recent years. Examples include the strengthening of services for route 270A (Sheung Shui - Tsim Sha Tsui East) and route 373A (Fanling - Wanchai) during morning peak. The frequency of route 373A has also been further increased and its service hours extended.

In 2013-14, an "area approach" will be adopted to rationalise bus routes in the North District. Some routes with low utilisation, with alternative means of transport, or are overly circuitous or overlap with other route(s) will be rationalised. The resources so spared will be deployed to routes with high demand, including the consideration of introducing new external route to the urban area. Details of the rationalisation proposals are being formulated and are expected to be available in three months' time for consultation with the North District Council. Meanwhile, preliminary district consultation has begun.

(c) TD will continue to closely monitor and co-ordinate different types of public transport services through examining operational data, conducting site inspections, and taking into account views of the District Councils and the public. Services will be strengthened at an appropriate juncture according to demand. Passengers' travelling patterns will change following the commissioning of new rail lines. TD will carry out consultancy studies in advance and conduct district consultation in order to rationalise the arrangements for the different transport services.

The SCL will be commissioned in 2018 to meet the population growth of the New Territories East. Over 10 enhancement proposals for bus services will also benefit the New Territories

East in 2013-14, and TD will consult the North District Council. In fact, in the past five years, three new franchised bus routes, four new green minibus routes and four new residents' service routes have been introduced in the New Territories East.

MTRCL carries out passenger surveys regularly. Respondents are generally satisfied with safety and reliability of MTR, sufficiency of passenger information, and cleanliness of train compartments. Franchised bus companies also conduct passenger surveys every year. Passengers are generally satisfied with bus captains' compliance with traffic regulations, travelling speed and driving skills.

Ends/Wednesday, February 20, 2013
Issued at HKT 18:54

NNNN

Patronage and Train Loading of the MTR East Rail Line and Ma On Shan Line in the Past Five Years

		2008	2009	2010	2011	2012
East Rail Line	Average daily passenger flow	892,000	891,000	942,000	980,000	1,022,000
	Average daily passenger flow to and from Lo Wu Station	224,000	223,000	232,000	235,000	240,000
	Average daily passenger flow to and from Lok Ma Chau Station	31,000	35,000	42,000	50,000	60,000
	Average passenger flow during peak hours * (with carrying capacity of 82,500 per hour in one direction during peak hours)	52,000	50,900	56,400	57,000	58,900
	Average train loading during peak hours *	63%	62%	68%	69%	71%
Ma On Shan Line	Average daily passenger flow	97,000	106,000	120,000	127,000	135,000
	Average passenger flow during peak hours * (with carrying capacity of 26,800 per hour in one direction during peak hours)	11,800	11,900	14,100	14,500	14,900
	Average train loading during peak hours *	44%	44%	53%	54%	56%

* Based on the hourly passenger flow between the two busiest stations of the railway line. The train loading is calculated from the prevailing actual train frequency and passenger flow per hour.

Ten most patronised bus routes serving North District in 2012

	Routes
1.	270 (Tin Ping Estate, Sheung Shui – Tsui Lai Garden, Sheung Shui (circular route))
2.	270A (Sheung Shui Bus Terminus – Tsim Sha Tsui East (Mody Road))
3.	273 (Wah Ming Estate, Fanling – Fanling Station (circular route))
4.	273A (Choi Yuen Estate, Sheung Shui – Wah Ming Estate, Fanling (circular route))
5.	273B (Ching Ho Estate, Sheung Shui – Sheung Shui Station (circular route))
6.	276 (Sheung Shui Bus Terminus – Tin Tsz Estate, Tin Shui Wai)
7.	276A (Tai Ping Bus Terminus, Sheung Shui – Tin Heng Estate, Tin Shui Wai)
8.	277X (Luen Wo Hui, Fanling – Ping Tin, Kwun Tong)
9.	278X (Sheung Shui Bus Terminus – Tsuen Wan (Nina Tower))
10.	279X (Luen Wo Hui, Fanling – Tsing Yi Station)

Press Releases

LCQ12: Train services of MTR West Rail Line and Light Rail

Following is a question by the Hon Leung Che-cheung and a written reply by the Secretary for Transport and Housing, Professor Anthony Cheung Bing-leung, in the Legislative Council today (July 17):

Question:

Many residents in North West New Territories have relayed to me their dissatisfaction with the train services of the MTR West Rail Line (WRL) and the Light Rail (LR). In this connection, will the Government inform this Council if it knows:

(a) given that some residents have pointed out that the train frequency of WRL during night-time cannot meet the demand, resulting in passengers at the intermediate stations often finding it difficult to board the first arriving train heading towards Tuen Mun, the respective starting and ending time of the peak and off-peak hours for train services of WRL; the average patronage and the carrying capacity of the trains of various time slots;

(b) given that the trains of WRL currently run at a frequency of approximately six to seven minutes during off-peak hours, whether the MTR Corporation Limited (MTRCL) will increase the train frequency of that time slot; if MTRCL will not, the circumstances under which the train frequency will be increased;

(c) given that some residents have relayed that the demand for train services in districts along WRL continues to rise, whether MTRCL will consider increasing the number of train cars of WRL from seven to nine which is the original design standard; if MTRCL will not, the circumstances under which the number of train cars will be increased;

(d) the respective starting and ending time of the peak and off-peak hours for services of various LR routes at present; the average patronage and the carrying capacity of the trains of various time slots; the details of operating various LR routes with single-carriage or two-carriage trains;

(e) as the new fare table issued by MTRCL shows that starting from June 30 this year, the Single Journey fares are lower than their corresponding Octopus fares for more than 1 300 fare combinations of LR, with differences ranging from \$0.1 to \$0.5, the causes for such differences; whether there is any solution and its implementation timetable; and

(f) as LR is the main mode of transport providing connection for passengers of WRL to and from various locations in North West New Territories, but the last train-departure time of certain LR routes cannot cater for the needs of passengers of the last train of WRL, the details of these LR routes and the causes for this situation; whether MTRCL will consider extending the service

hours of the relevant routes?

Reply:

President,

Currently, the MTR Corporation Limited (MTRCL) has already taken passengers' travelling patterns and patronage of different areas and stations into consideration when drawing up the service timetable for each railway line. This is to ensure that railway service meets passengers' demand. As observed, railway service in general can meet passengers' demand, and most passengers are able to board the first arriving train.

My reply to the Hon Leung Che-cheung's question is as follows:

(a) to (c) MTRCL has all along been closely monitoring the service level and passengers' demand of West Rail Line (WRL). WRL patronage is higher during the climax of peak hours, but generally it can still cope with passengers' need. In 2012, the carrying capacities per hour in one direction during morning and evening peak hours are 46,900 and 40,100 passenger trips respectively. The average train loading during morning peak hours on weekdays (from 6.30am to 9am) is around 70%, while that of the evening peak hours on weekdays (from 4.30pm to 7.30pm) is around 56%. The current loading can cope with passengers' need.

MTRCL is dedicated to providing safe, comfortable and efficient train services for passengers. The train service enhancements under the "Listening • Responding" programme in 2012 brought the total number of additional train trips a year to around 62,000, with an increase of 150 million passenger trips in carrying capacity. For WRL, the train trips have increased by 188 weekly from 2,963 to 3,151 since late August last year. Currently, the train frequency during morning peak hours on weekdays is 3 minutes; train frequency during evening peak hours on weekdays has been enhanced from 4 minutes to 3.5 minutes. Train frequency during non-peak hours has also been enhanced from 6 to 9 minutes to 6 to 7 minutes.

Besides, MTRCL has also commenced the Shatin-to-Central Link project. When its Tai Wai to Hung Hom Section is in service in 2018, the existing Ma On Shan Line will connect with WRL via East Kowloon to form the "East West Corridor". After the commissioning of the "East West Corridor", the number of train compartments of WRL will gradually increase from 7 to 8. By then, the entire carrying capacity of WRL can be further enhanced.

(d) As the Light Rail adopts an open design, there may be Light Rail vehicles (LRVs) of more than one route calling at the same stop. There is therefore no information on which route a passenger will take after he/she purchases a ticket or validates his/her Octopus card at a stop. The train loading figures of the Light Rail are obtained through observation surveys conducted by MTRCL. In 2012, the average train loading during morning peak hours (from 7am to 8am) for Light Rail is around 85%. MTRCL did not conduct surveys for the train loading during non-peak hours. The hourly carrying capacity and arrangement of single or coupled-set LRVs of each Light Rail route are at Annex.

(e) There are two fare charts in the Light Rail fare system. Octopus fares are divided into 8 levels (after the fare adjustment on June 30, 2013, adult Octopus fares range from \$4.1 to \$6.5; concessionary fares range from \$2 to \$3.2) and calculated depending on the number of stops passed-by. Single Journey Ticket fares are calculated based on zones, and there are 3 levels of fare among 6 fare-zones (adult fares are \$4.5, \$5.5 and \$6.5; concessionary fares are \$2, \$2.5 and \$3). As the two fare charts are totally different, there are circumstances where the Single Journey Ticket fare is lower than the Octopus fare. MTRCL will look into a solution to deal with this problem in the long term.

In calculating individual fares, MTRCL has all along applied the following guiding principles:

- (1) adjustments to Octopus fares are in units of 10 cents; and
- (2) adjustments to Single Journey Ticket fares are in units of 50 cents (as MTR Ticket Issuing Machines accept coins with value of 50 cents, 1 dollar, 2 dollars, 5 dollars and 10 dollars).

MTRCL advised that due to the differences in the units of adjustment to Octopus fares and Single Journey Ticket fares, the percentage increase of some Single Journey Ticket fares (most of which are Elderly or Child Concessionary Single Journey Tickets) would be quite high with a 50 cents adjustment when the above principles are applied in the calculation of individual fares. Thus, MTRCL often decided not to adjust these Single Journey Ticket fares.

However, such arrangement has created a phenomenon that some Octopus fares are higher than the corresponding Single Journey Ticket fares. The Government has expressed its concerns over these cases to MTRCL. In response, MTRCL advised that it would proactively follow up. It further pointed out that if the Single Journey Ticket fares were adjusted to a level higher than the Octopus fares in one go, the increase rate might be too high and the public might not accept.

MTRCL has made improvement on this aspect during the fare adjustment this year. The number of these cases in Light Rail dropped by 47% from 1,276 to 672. MTRCL plans to gradually remove the situation where Octopus fares are higher than the corresponding Single Journey Ticket fares starting from this year and in the coming few years.

(f) To ensure train safety and reliability, a series of maintenance repair and inspection works for Light Rail have to take place every night after the last train departs up to around 5am the next morning before the train service commences. This is to ensure that the equipment is in normal operation. Therefore, maintenance staff has to complete works within 2 to 3 hours every night. Further extending the service hours of Light Rail will affect such maintenance works, which may affect the operation safety of Light Rail. MTRCL has tried its best to balance passengers' need and the maintenance repair works of Light Rail. Nevertheless, the Government will continue to urge MTRCL to look into the service hours of Light Rail, or suggest other viable

alternatives, to synchronise with the last train of WRL. At the same time, the Government will also look into if other public transportation modes may collaborate accordingly.

Ends/Wednesday, July 17, 2013

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Annex

Carrying capacity of all Light Rail routes in 2013

Light Rail route	Hourly carrying capacity (per direction)	Single / coupled-set LRV arrangement during morning peak hours
505	2,440	7 single & 1 coupled-set
507	2,611	8 single & 1 coupled-set
610	2,324	11 single & 2 coupled-set
614	1,128	7 single
614P	1,410	5 single
615	1,085	7 single
615P	1,410	5 single
705	5,640	5 coupled-set
706	5,640	5 coupled-set
751	3,021	6 single & 6 coupled-set
751P	1,763	4 single
761P	6,267	13 coupled-set
Total carrying capacity	34,739	

Press Releases

LCQ10: MTR service

Following is a question by the Hon Tony Tse Wai-chuen and a written reply by the Acting Secretary for Transport and Housing, Yau Shing-mu, in the Legislative Council today (December 4):

Question:

It has been reported that the Beijing Municipal Administration of Quality and Technology Supervision promulgated the "Code for design of urban rail transit" in August this year, stipulating that five persons standing per square metre shall be the appropriate maximum under the design standard for railway train compartments with effect from January 1, 2014. The standard is the same as that for the Russian railways, while the standard for the Japanese railways is set at four persons per square metre. In this connection, will the Government inform this Council:

(a) whether it knows if the MTR Corporation Limited (MTRCL) has set any specific indicator and target in respect of passenger density in a train compartment, including the requirement on the maximum number of standees per square metre inside a train compartment; if it has, of the details and the criteria by which the indicators and targets were set; if not, the reasons for that, and whether it will make reference to the practices of Beijing and abroad and formulate relevant standards;

(b) as the information provided by the Transport and Housing Bureau has indicated that the maximum railway carrying capacity per hour per direction is currently 85 000 passenger trips for the Kwun Tong Line, the Tsuen Wan Line and the Island Line of MTR, with the average occupancy rate at almost 70 per cent for both morning and afternoon peak hours, whether it knows the passenger density based on which MTRCL has calculated those data;

(c) whether it knows if MTRCL conducts regular reviews and assessments of the crowdedness of train compartments; if it does, of the outcome; if not, the reasons for that, and whether any assessment will be conducted; whether the MTRCL has taken any measure to alleviate the crowdedness of train compartments, as well as the implementation details and effectiveness of the various measures; and

(d) whether it has assessed and by what criteria it has assessed if the current crowdedness of train compartments is at an acceptable level; if the assessment result is in the negative, of the solutions, including whether it will make the crowdedness of train compartments as one of the factors of consideration in the fare adjustment mechanism for MTR?

Reply:

President,

My reply to various parts of the Hon Tony Tse Wai-chuen's question is as follows:

(a) As the MTR is a mass transit system, its design has to cope with the requirement of a large passenger volume. Therefore, at the design stage, a benchmark on passenger density will be set out. This benchmark, however, is not a mandatory stipulation. In the actual operation of the MTR, passengers can choose where to sit and stand freely, and they can also freely pass through different train compartments. As there are numerous train doors, with the frequent boarding and alighting by passengers, their comfort level differs at different locations in the train compartments. During peak hours, passengers will inevitably feel more crowded. On the contrary, during non-peak hours, passengers may feel that the train compartments are more spacious. The MTR Corporation Limited (MTRCL) notices that, during peak hours, passengers may have to wait for more than one train before boarding at particularly busy stations.

(b) The calculation method of the average train loading of MTR during peak hours and its maximum carrying capacity is set out below:

Average train loading [Note] =
actual patronage ÷ maximum carrying capacity

Maximum carrying capacity =
carrying capacity × number of train trips
per train per hour

(c) and (d) MTRCL is committed to providing a comfortable and reliable railway service for passengers. With a view to alleviating crowdedness on trains and reducing passengers' waiting time, MTRCL added more than 1,200 train trips per week (that is, over 62,000 train trips per year) on busier railway lines vide the launching of the \$1 billion "Listening • Responding" programme last year. This year, MTRCL further enhances train service appropriately on the East Rail Line, Island Line, West Rail Line, Kwun Tong Line and Tsuen Wan Line, etc. to meet the needs of passengers.

Since the launching of the "Listening • Responding" programme, MTRCL has received much positive feedback from passengers. A survey conducted at the end of last year shows that up to 80 per cent of the 500 interviewees found trains and platforms less crowded, and up to 90 per cent were satisfied with the waiting time for trains.

As mentioned above, passengers' comfort level on train varies according to the different locations in the train compartments and different time of the day during the journey. It cannot be generalised. It is therefore not viable and suitable to set a fixed benchmark as one of the factors to measure MTR train service quality. Hence, it should not be linked to the Fare Adjustment Mechanism.

MTRCL understands that passengers' acceptance towards crowdedness in train compartments may vary. It will closely monitor and respond to passengers' needs. It will also take passengers' travelling patterns and patronage of different areas

into consideration when making train service arrangements, in order to provide services that suit passengers' demand. In the long run, the Government will continue to study whether there is a need to develop new railway projects, in order to alleviate the current or potential bottleneck sections, with a view to enhancing the effectiveness of the whole railway network.

Note: Based on the hourly patronage between the two busiest stations of the railway line.

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**Panel on Transport
Subcommittee on Matters Relating to Railways**

**List of relevant papers on
capacity and loading of MTR trains**

Date of meeting	Committee	Minutes/Paper	LC Paper No.
1.3.2013	Subcommittee on Matters Relating to Railways	Administration's paper on "Our Future Railway" Stage 2 Public Engagement Exercise	LC Paper No. CB(1)595/12-13(03) http://www.legco.gov.hk/yr12-13/english/panels/tp/tp_rdp/papers/tp_rdp0301cb1-595-3-e.pdf
		Minutes	LC Paper No. CB(1)1060/12-13 http://www.legco.gov.hk/yr12-13/english/panels/tp/tp_rdp/minutes/rdp20130301.pdf
5.7.2013	Subcommittee on Matters Relating to Railways	MTR Corporation Limited's paper on their service performance	LC Paper No. CB(1)1421/12-13(01) http://www.legco.gov.hk/yr12-13/english/panels/tp/tp_rdp/papers/tp_rdp0705cb1-1421-1-e.pdf
		Minutes	LC Paper No. CB(1)534/13-14 http://www.legco.gov.hk/yr12-13/english/panels/tp/tp_rdp/minutes/rdp20130705.pdf

Date of meeting	Committee	Minutes/Paper	LC Paper No.
25.10.2013	Subcommittee on Matters Relating to Railways	Minutes	LC Paper No. CB(1)312/13-14 http://www.legco.gov.hk/yr13-14/english/panels/tp/tp_rdp/minutes/rdp20131025.pdf

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