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Panel on Transport

Subcommittee on Matters Relating to Railways
Meeting on 22 November 2013

Background brief on retrofitting of automatic platform gates along the East Rail Line and Ma On Shan Line

Purpose

This paper provides background information on retrofitting of automatic platform gates[1] ("APGs") along the East Rail Line ("ERL") and Ma On Shan Line ("MOSL"). It also summarizes the major views and concerns expressed by Members during previous discussions on the subject.

Background

2. The station platforms of ERL and MOSL are of an open environment relying on natural ventilation. Some platforms are curved and some are straight, all are without platform screen doors[2] ("PSDs") (except the East Tsim Sha Tsui Station). The pre-merger Kowloon-Canton Railway Corporation had conducted technical studies and pointed out that, before retrofitting of APGs could be considered for ERL stations, an automatic mechanical gap filler ("MGF") system might first be installed at platforms with wide gaps between a train and a curved edge. A trial on MGF was conducted at Lo Wu Station from July 2008 to the end of 2009. It is concluded that the MGF system is not suitable for use on ERL as it would adversely affect passenger safety, train service reliability and passenger service level.

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[1] Automatic platform gates are chest-height sliding doors at the edge of railway platforms to prevent passengers from falling off the platform edge onto the railway tracks.

[2] Platform screen doors are full height, total barriers between the station floor and ceiling.

Works arrangements and timetable

3. According to the MTR Corporation Limited ("MTRCL"), retrofitting APGs along ERL faces 4 major difficulties and challenges: safety risk associated with wide platform gaps; limitations of existing signalling system; limitations of existing trains; and limitations of platform structures. Taking all factors into account, MTRCL decides to combine the work of the Shatin to Central Link ("SCL") project and the retrofitting of APGs along ERL because the wide platform gap issue at curved platforms could be resolved and the new signalling system, new trains and the required platform modification works could all be carried out at the same time when SCL project's North-South Corridor[3] is constructed. It is expected that APGs along ERL will be operational by the time the North-South Corridor of SCL is completed in 2020.

4. In order to achieve synergy and minimize the inconvenience to passengers, MTRCL decides to retrofit APGs at MOSL stations in tandem with the construction of the East-West Corridor[4] of SCL project. MOSL is currently using 4-car trains. When SCL comes into operation, it will be changed to allow ultimate operation of 8-car trains. The existing platforms of MOSL therefore have to be extended to accommodate the 8-car trains. According to a recent announcement by the Administration[5], the East-West Corridor of SCL is scheduled for completion by 2017 and it is expected that APGs at MOSL stations will be operational at the same time.

Funding arrangements

5. Over the past years, MTRCL has collected an extra charge of $0.1 (the surcharge) per journey from passengers paying the fares with Octopus Cards, in order to pay for half of the costs of the project of retrofitting PSDs and APGs at MTR stations. The retrofitting works of PSDs at 30 underground stations started in 2000, and were completed in 2006. The total cost was about $2 billion. As MTRCL's original investment plan for constructing the early railway lines did not include this capital cost, passengers therefore had to contribute to half of the cost, i.e. $1 billion. In 2008, MTRCL started retrofitting APGs at 8 at-grade and above-ground stations. The construction cost was about $300 million, with half of the cost (i.e. $150 million) contributed by passengers. As a result, MTRCL will collect a total of $1.15 billion from passengers using Octopus cards for

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[3] Hung Hom to Admiralty Section: It will extend the existing ERL across the harbour to Wan Chai North and Central to form the "North-South Corridor".

[4] Tai Wai to Hung Hom Section: It will extend the existing MOSL from Tai Wai to the West Rail Line via East Kowloon to form the "East West Corridor".

[5] 署理運輸及房屋局局長於 2012 年 12 月 6 日就"港鐵票價行會把關"動議辯論總結發言

the retrofitting of PSDs and APGs. Up to April 2013, MTRCL has collected a total of $1.063 billion through the collection of $0.1 for each journey using Octopus cards. It is expected that the amount will be fully recovered in the first half of 2014.

6. APGs have to be retrofitted at 22 stations in total along ERL and MOSL. According to the Administration in June 2013, they would discuss with MTRCL to seek for an arrangement where passengers do not have to bear part of the capital cost.

Major concerns raised by the Subcommittee

7. Members have discussed retrofitting of APGs along ERL and MOSL at the Subcommittee meetings in the fourth and fifth Legislative Councils. Members' major concerns are summarized in the ensuing paragraphs – *passenger safety* and *funding arrangements*.

Passenger safety

8. During the Subcommittee meeting on 21 November 2008, members requested the Administration to ascertain with MTRCL the completion date for installation of APGs at ERL stations and passed the motion below:

> "That this Subcommittee expresses strong dissatisfaction with and condemnation of the failure of the Government and MTRCL to fulfill their promise to provide a concrete timetable for the installation of PSDs; and strongly requests the Government to press MTRCL to expedite the installation of PSDs."

9. At the Subcommittee meeting on 16 January 2009, members in general expressed strong dissatisfaction with the failure of the Administration and MTRCL to provide a concrete timetable for the retrofitting of APGs at ERL stations. On 21 January 2011, the Subcommittee members generally expressed strong dissatisfaction with the findings and conclusion that it would require about 10 years to complete the retrofitting of APGs at ERL stations. Further, the Subcommittee members at the meeting on 13 January 2012 expressed strong dissatisfaction with the long lead time required to retrofit APGs at the stations along ERL and MOSL.

10. The Subcommittee at its meeting on 21 January 2011 urged MTRCL to make sustained efforts in exploring alternative solutions with a view to expediting the provision of APGs at ERL stations and enhancing

passenger safety. During the meeting, the following motion was carried:

> "That there have been as many as 48 accidents involving passengers falling onto rail tracks and 30 cases of suicide and attempted suicide over the past 3 years at MTRCL's stations which have not been retrofitted with PSDs or APGs, but MTRCL still refuses to immediately retrofit APGs on its ERL and MOSL in disregard of both passenger safety and its corporate social responsibility, this Subcommittee therefore strongly condemns MTRCL for its indifference to passenger safety, and demands that MTRCL immediately retrofit APGs on its ERL and MOSRL to ensure passenger safety."

11. At the Subcommittee meeting on 2 March 2012, members urged MTRCL to introduce additional safety measures from the present onwards until completion of the retrofitting project to prevent passengers from falling onto the rail track; and employ additional Platform Assistants, especially for crowded stations such as Kowloon Tong Station, to maintain platform order and provide assistance to passengers to board and alight at ERL and MOSL stations.

12. Members at the Subcommittee meeting on 5 July 2013 showed grave concerns over the fatal incident with regard to a woman jumping onto the track as the train approached Tai Wai Station on 30 June 2013. They therefore urged MTRCL to retrofit APGs for ERL and MOSL the soonest possible.

Funding arrangements

13. At the Subcommittee on 21 January 2011, members expressed strong views that as APGs were necessary facilities to ensure passenger safety, MTRCL had the responsibility to install APGs and to meet the relevant cost without requiring contribution from passengers. On 2 March 2012, members at the Subcommittee meeting also showed concerns about the funding arrangements for retrofitting of APGs along ERL and MOSL. During the abovementioned meetings, the Administration advised that it was in the course of discussion with MTRCL and would endeavour to find a solution so that passengers did not need to share the cost of installing APGs along ERL and MOSL.

Legislative Council questions

14. Hon Andrew CHENG, Hon WONG Sing-chi and Hon Gary FAN expressed concerns over the retrofitting of APGs along ERL and MOSL and raised Council questions on 17 March 2010, 6 April 2011 and 19 June 2013 respectively. These questions and the Administration's replies are attached at **Appendix I** for members' reference.

Recent developments

15. The Administration plans to brief the Subcommittee on the retrofitting of APGs along ERL and MOSL at the meeting to be held on 22 November 2013.

Relevant papers

16. A list of relevant papers is at **Appendix II**.

Council Business Division 1
Legislative Council Secretariat
20 November 2013

Appendix I

Press Releases

LCQ6: Platform screen doors and automatic platform gates in MTR stations

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Following is a question by the Hon Andrew Cheng and a reply by the Secretary for Transport and Housing, Ms Eva Cheng, at the Legislative Council meeting today (March 17):

Question:

At present, all underground stations of the MTR Corporation Limited ("MTRCL") have been retrofitted with platform screen doors ("PSDs"), and the works of retrofitting automatic platform gates ("APGs") at eight at-grade and above-ground MTR stations will also be completed in 2011. Due to the design of the platforms along the East Rail Line, the retrofitting of APGs may render passengers unable to see the width of the platform gap clearly, thus posing danger. The trial of the mechanical gap filler ("MGF") system carried out by MTRCL for its study to solve this problem was completed in October last year, and a comprehensive review was expected to be completed at the end of last year or early this year. Moreover, in January this year, an incident occurred at Shau Kei Wan MTR Station in which the glass pane of a PSD cracked. In this connection, will the Government inform this Council whether it knows:

(a) apart from the above incident, other incidents involving cracking of PSD glass panes or failures of PSDs have occurred at the underground stations since the completion of the works of retrofitting PSDs in 2006; whether MTRCL or its predecessor, MTR Corporation Limited, has conducted any investigation into these incidents; if such investigations had been conducted, of the progress and outcome; if not, the reasons for that;

(b) at present, MTRCL has put in place a mechanism to test and inspect the quality, safety and operation of PSDs and APGs regularly; if so, of the details; if not, the reasons for that; what measures MTRCL has put in place to prevent the recurrence of incidents of cracking of PSD glass panes; and

(c) MTRCL has completed the comprehensive review of the MGF system; if so, of the outcome; if not, the reasons for that, and whether there is any specific timetable for the retrofitting of PSDs or APGs at the stations along the East Rail Line and the Ma On Shan Line; if so, of the details; if not, the reasons for that?

Reply:

President,

(a) Platform Screen Doors (PSDs) were retrofitted at 30 underground stations on the MTR Kwun Tong Line, Tsuen Wan Line and Island Line from 1999 to 2006. Since completion of the project in 2006, PSD operation in the MTR network has been smooth with only a few incidents recorded. From 2006 to the present, there have been four cases of broken PSD glass panels and five cases of cracks being found on individual panels (details of the nine cases are in the attached table). As the glass panels are made of toughened safety glass, no injuries

resulted from breakage of glass panels of PSDs.

After every incident, MTR Corporation Limited (MTRCL) would follow up and conduct investigation into the cause of the incident. Investigation revealed that most of the incidents were caused by human factors, such as the glass being hit by hard objects, while others were caused by impurity in the glass panels.

(b) The toughened safety glass panels currently used for PSDs are manufactured by specialist glass manufacturers. The manufacturing process adopts stringent standards and the glass panels are subject to rigid tests. In general, the raw materials used to manufacture toughened safety glass contain some natural impurities (for example nickel sulphide). To ensure product quality as far as possible, each toughened safety glass panel must undergo a heat soak test under a high temperature of 290 degrees Celsius for eight hours before they can be validated and leave the factory. After these tests, the manufacturers would issue certificates which would be examined by the suppliers. This method of testing has been recognised in the market as an effective way to test the quality of glass. Nevertheless, this cannot completely rule out that tiny impurities may still exist in individual glass panels, creating vulnerable points for cracks or breakage if the glass panel is hit at a certain angle or from a certain direction. However, one characteristic of toughened safety glass is that when broken, it will shatter into small pieces with rounded edges, and so the broken glass itself will not cause harm to passers-by.

MTRCL has in place a robust maintenance regime to ensure the smooth operation and good condition of PSDs. Each day, station staff will conduct function test and visual check of PSDs before the start of train service. In addition, maintenance contractors conduct quarterly inspections of PSD glass panels, replacing the panels when cracks or damage are identified. As regards PSD operation, regular maintenance and testing at varying levels are carried out quarterly, half-yearly, annually and five-yearly to ensure continued smooth operation. MTRCL has all along reminded staff and contractors to carefully inspect and test PSDs according to established timing and procedures.

(c) MTRCL is in the process of arranging for the installation of Automatic Platform Gates (APGs) at eight above-ground stations on the Island, Kwun Tong and Tsuen Wan Lines. Retrofitting APGs at platforms of an operating railway line involves highly complicated works including major modifications to the platform structure, ventilation system and earthing protection system. Concrete breaking and installation works have to be carried out during the very tight non-operating hours in the night time so that disruption to railway service could be minimised. MTRCL is also conscious of the noise issue in association with the works and will hence work closely with the contractor in controlling noise generated. Temporary mitigation measures such as erecting noise barriers will be implemented during the works to mitigate possible noise nuisance caused to nearby residents and this will inevitably further reduce the time available for the installation works every night. MTRCL understands that both Members of the Legislative Council and the general public would like to see the completion of retrofitting of APGs as soon as possible. Therefore, when MTRCL awarded the contract for the project in January 2009, the contractor has been asked to look at the possibility of speeding up the programme. In planning the detailed implementation programme, the contractor and MTRCL's

project management team determined that some works can be done simultaneously to shorten the works period. MTRCL has announced in May 2009 that the installation work will be completed one year earlier than originally scheduled, i.e. in 2011.

For East Rail Line, there are platforms with relatively greater curvatures and wider platform gaps at some stations. The problem of wide platform gaps has to be properly resolved before Automatic Platform Gates (APGs) are installed at stations along the line in order to reduce the risk of passengers inadvertently stepping into the platform gaps because of sight line obstructions caused by the APGs. If APGs are to be considered to be installed on the East Rail Line, Mechanical Gap Fillers (MGFs) have to be installed at platforms first to reduce the risk of passengers stepping into the platform gaps when they are boarding and alighting. Therefore, the pre-merger Kowloon-Canton Railway Corporation decided to study the effect of installing MGFs at station platforms with wider gaps first. The design and operation of MGFs has to interface with the train signalling system, the MGF plates will automatically extend after the arrival of a train before the train doors are opened, and automatically retract into the platform edge after the train doors are closed and before the train departs to ensure passenger safety. The MGF system is new and has never been used in Hong Kong. In fact, it is also uncommon in other railway systems internationally. As such, MTRCL needs to develop a MGF system that is suitable for East Rail Line and conduct on-site trial at platforms during train service hours to test its effect.

The trial was conducted at Lo Wu Station in three phases. In the first phase, MTRCL installed MGFs at one boarding and alighting position of each of Platforms 3 and 4 of Lo Wu Station for initial mechanical testing. The second phase of the trial was to test the effect of MGFs operating together with the signalling system at a total of 10 boarding and alighting positions at Platforms 3 and 4. In the last phase, MTRCL installed MGFs at a total of 98 boarding and alighting positions at four platforms at Lo Wu Station where platform gaps are relatively wider to conduct function and reliability test during service hours (for example to test whether the MGFs extend and retract to reduce the platform gaps every single time according to requirement, and to test the fault rate of the MGF system during operation) and collect test data in order to assess the performance of the system. The whole trial commenced in July 2008 and was completed at the end of last year.

The MGF system needs to have a sophisticated interface with various railway systems, such as signalling and train control, etc. Due to safety consideration, when a train comes to a complete stop at a station, MGFs would extend from the platform edge, and only after the system verifies that the MGFs are extended would the train doors open. After boarding and alighting of passengers, the train doors would have to be securely closed before the MGFs start retracting. Trains would depart only when the system verifies that the whole process has been completed. During the trial, MTRCL found that, since elaborate verifications for the communications between the MGF system and the various railway systems are required, additional platform dwell time and lengthening of total journey time are incurred. MTRCL is now collating and analysing the data collected to assess the system's performance and implication on train service.

We understand the public's views on the installation of

APGs at platforms. However, before installing any facilities in the railway system, considerations have to be given to the operational safety of and implications on railway services. We will continue to follow up closely with MTRCL on the review of the trial on MGF system.

Ends/Wednesday, March 17, 2010
Issued at HKT 16:26

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Annex

MTR Platform Screen Door incidents
(2006 - January 2010)

Date	Station	Damage of glass panel	Cause
18-6-2006	Airport	Cracks found	Human factor
6-10-2006	Yau Ma Tei	Glass panel broken	Human factor
27-11-2006	Tseung Kwan O	Glass panel broken	Impurity contained in glass
12 -1- 2007	Shek Kip Mei	Cracks found	Human factor
22-3-2007	Central	Cracks found	Human factor
18-10-2007	Admiralty	Cracks found	Human factor
21-4-2008	Tiu Keng Leng	Glass panel broken	Impurity contained in glass
11-4-2009	Tsing Yi	Cracks found	Human factor
27-1-2010	Shau Kei Wan	Glass panel broken	Impurity contained in glass

Press Releases

LCQ9: Retrofitting platform screen doors or automatic platform gates at MTR stations
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Following is a question by the Hon Wong Sing-chi and a written reply by the Secretary for Transport and Housing, Ms Eva Cheng, at the Legislative Council meeting today (April 6):

Question:

As regards retrofitting platform screen doors (PSDs) or automatic platform gates (APGs) at stations along the East Rail Line (EAL) and Ma On Shan Line (MOSL) of the MTR Corporation Limited (MTRCL), will the Government inform this Council:

(a) given that in its reply to a question raised by a Member of this Council on June 9, 2010, the Transport and Housing Bureau (THB)indicated that "as there are platforms with relatively greater curvatures and wider platform gaps at some stations of the East Rail Line, the problem of wide platform gaps has to be properly resolved before APGs are installed at stations along the line in order to reduce the risk of passengers inadvertently stepping into the platform gaps because of sight line obstructions caused by the APGs", whether the authorities know:

(i) the definitions of "relatively greater curvatures" of the platforms and "wider platform gaps" referred to by THB, and whether there are objective measurement standards for such; if yes, of the details; if not, the reasons for that;

(ii) among the stations along EAL and MOSL, the names of those stations having platform(s) with relatively greater curvatures and wider platform gaps, as well as other stations (please list the stations by rail line); and

(iii) whether MTRCL will first retrofit PSDs or APGs at those stations with straight platforms only; if so, of the details and timetable; if not, the reasons for that;

(b) concerning the numbers of passengers who fell onto tracks as set out in Annex I of THB's reply to my question on January 19, 2011, of the respective numbers of injuries and deaths among such cases, with a breakdown by station and year;

(c) given that MTRCL indicated in its paper submitted to the Subcommittee on Matters Relating to Railways in January 2011 that "Synergy can be identified through integrating the APG and SCL (the Shatin to Central Link) projects while large amounts of redundancy and wastage would be incurred if the two were implemented separately", whether the authorities know the criteria and methods for evaluating the "synergy" and "large amounts of redundancy and wastage" referred to by MTRCL, as well as the details; if not, of the reasons for that, and when the Government can obtain such information; and

(d) given that MTRCL also indicated in the paper mentioned in (c) that consideration must be given to the impact that APGs would have on the circulation of air on EAL platforms, and that studies showed that existing station ventilation would have to be improved to maintain a comparable environment as before the

installation of APGs for passengers waiting for trains on platforms, whether the authorities know if MTRCL (or its predecessor, the MTRCL before the rail merger) had studied the issue of ventilation when it retrofitted PSDs or APGs at other underground stations in the past and if it has conducted such studies at present when retrofitting PSDs or APGs at the eight aboveground and at-grade stations; if so, of the respective details of such studies and the aforesaid studies on EAL; if not, the reasons for that?

Reply:

President,

The replies to various parts of the question are as follows:

(a)

(i) In railway operations, factors such as wind speed, train speed, geographic conditions and passenger loading could cause slight, left-right swaying movements in trains while entering or leaving a platform. Hence, a suitable distance between the platform and the train has to be maintained to prevent trains from hitting the platform to ensure safe train operations. In the case of a curved platform, arc movements of a train occur when it is entering or leaving a platform. Therefore, a certain distance is also required between the train and the platform.

The design and construction of the East Rail Line (EAL) were different from that of the other railway lines. This is because apart from domestic passenger trains, there are Intercity Through Trains with wider train bodies operating on the EAL. Due to geographic constraints, some EAL platforms are located on curved sections, necessitating wider gaps between the train and the platform. There are design standards for these technical aspects.

The MTR Corporation Limited (MTRCL) has already taken the following measures to ensure the safety of passengers waiting on platforms:

- Platform gap fillers are installed to narrow the gap between the train and the platform;

- Yellow tactile strips are installed along platform edges to remind passengers not to stand beyond the yellow line;

- Door chimes are broadcast before train doors close to remind passengers not to charge in the compartments;

- CCTV system is installed at platforms for monitoring purpose, public announcements are made on platforms and in train compartments to remind passengers to mind the platform gaps; and

- Illumination is installed under the platforms and flashing lights are installed at the edge of the EAL platforms at locations where the gap between the platform and the train is relatively wide so that passengers would pay attention to the gap.

(ii) At present, the platforms at Tai Wai Station, Sha Tin Station, Fo Tan Station, Racecourse Station, Fanling Station, Sheung Shui Station, Lok Ma Chau Station on the EAL and all stations on the Ma On Shan Line (MOL) are straight. Some

platforms at Hung Hom Station, Mong Kok East Station, Kowloon Tong Station, University Station, Tai Po Market Station, Tai Wo Station and Lo Wo Station on the EAL are situated on curved sections.

(iii) The design of the MTR station platforms is safe. With the above facilities and measures taken by MTRCL, as well as regular passenger education activities, MTRCL has been providing a safe travelling environment for passengers.

Regarding the retrofitting of automatic platform gates (APGs) along EAL, technical studies have been conducted by the MTRCL with a view to identifying feasible solutions. The studies reveal that retrofitting of APGs at EAL stations poses particularly difficult challenges, which include safety risk associated with wider platform gaps; limitations of the existing signalling system; limitations of the existing trains; and limitations of platform structure. The feasibility of retrofitting of APGs at straight platforms first have been considered. However, due to the problems with the existing system, retrofitting of APGs at straight platforms will require at least the replacement of the signaling system.

(b) Regarding the reply on January 19, 2011 to the Legislative Council on passenger-on-track cases from 2006 to September 2010, the information provided by MTRCL regarding the cases in respect of the year, stations, number of injuries and fatalities are set out in the Annex. There were different causes to these passenger-on-track cases, which include accidents in which passengers fall onto the track (e.g. under the influence of alcohol or medicine, due to sickness etc); suicides and attempted suicides; and trespasses onto the track (e.g. passengers trying to retrieve items fallen onto the track, crossing the track to the platform on the other side etc).

(c) According to MTRCL, before retrofitting of APGs at EAL stations, the following are required to ensure passenger safety, reliable train service and maintenance of current service levels :

(i) development of a highly-reliable Mechanical Gap Filler system which is suitable for use under Hong Kong's adverse weather conditions, or other solutions that can solve platform gap problem to effectively address the safety risk caused by wider platform gaps;

(ii) installation of a new signalling system;

(iii) a train fleet equipped with motoring and braking systems suitable for use with APGs; and

(iv) modifications to station platform structure and ventilation systems.

Under the North-South Line (NSL) of the Shatin to Central Link (SCL) project, MTRCL has proposed a new signalling system and new trains for the operation of the NSL. As both retrofitting of APGs on EAL and SCL projects require substantial work to be done on EAL platforms, MTRCL is of the view that the two projects should be carried out in tandem to achieve synergy. However, if APGs are to be retrofitted as a standalone project, work will overlap at sites, causing delay to one project or the other; or once one has finished work on a particular platform, the other will commence and may go in to

dismantle what has just been installed, creating waste and abortive work.

According to MTRCL's assessment, even if the timeframe or time clash of the two projects are not taken into account, the following wastage would be incurred during the construction of the SCL if retrofitting of APGs at EAL stations is to be implemented as a standalone project:

EAL is currently operated with 12-car trains. The future NSL of the SCL project will be operated with 9-car trains. This is because the NSL of SCL will extend the rail line through the Hong Kong Convention and Exhibition Centre to Admiralty where platforms for 12-car trains cannot be accommodated due to space constraints. When SCL is in service, trains will stop at the straighter part of the platforms to help narrow the platform gap. As the train door positions may have to re-align with the straighter part of the platforms, all the relevant APGs will have to be dismantled and reinstalled, resulting in wastage.

If retrofitting of APGs on EAL platforms is to be implemented as a standalone project, the MTRCL will need to first procure 12-car new trains to maintain its current service level. When SCL is completed, due to the above technical reason, 9-car trains will be used. As the combinations of motor cars and trailer cars of 9-car trains and 12-car trains are different, a certain number of trailer cars will be wasted when converting 12-car trains into 9-car trains. More motor cars will need to be procured and driving-cabs will have to be modified and all previous work done will be wasted. At the same time, enhancements will have to be made to the signalling system with a view to increasing train frequency and total capacity.

Regarding the time required for the project, according to MTRCL's assessment, it is expected that the retrofitting of APGs as a standalone project at EAL stations will take about ten years to complete. About eight and a half years will be needed to procure and replace the signalling system and the train fleet with the first APGs being operational at the same time, and then the retrofitting of APGs at all the stations will take about one and a half years. Once the SCL Project is given the go-ahead, the NSL is expected to be completed in 2020, similar to that of implementing the APG project as a standalone one. Therefore, it does not justify the abortive works.

Besides, work will continuously be carried out on EAL platforms if both projects are undertaken separately, causing extensive inconvenience to passengers.

(d) Ventilation was taken into account when the pre-merger MTRCL retrofitted Platform Screen Doors (PSD) at all underground stations and APGs at the eight aboveground and at-grade stations. Consultants were commissioned by MTRCL (and the pre-merger MTRCL) during the design stage to evaluate the impact of PSDs and APGs on ventilation at stations.

Before PSDs were retrofitted at underground stations, trains in motion could produce piston effect and drive fresh air from the station into the tunnel to provide ventilation. Retrofitting of PSDs can reduce the loss of air-conditioning and maintain the temperature at platforms at a consistent level in order to provide a better travelling environment for passengers. However, as the tunnel and platform area were separated after retrofitting of the PSDs, additional

facilities such as air ducts and ventilation system had to be built at tunnels. The pre-merger MTRCL carried out major alterations to the station and tunnel ventilation, air-conditioning and smoke extraction systems.

Ventilation for the eight aboveground and at-grade stations is different from that of the underground stations as natural ventilation is used. After APGs are retrofitted, further enhancement to ventilation is required at platforms in order to maintain the same level of comfort for passengers. Therefore, installation of conducting fans at station platforms where APGs are retrofitted has been included in the project.

As for the impact on ventilation at EAL platforms after APGs are retrofitted, preliminary studies show that substantial improvement works to the existing station ventilation will have to be carried out to maintain a comparable environment as before the installation of APGs for passengers waiting for trains on platforms. MTRCL will conduct a detailed study when designing the APG system for EAL stations.

Ends/Wednesday, April 6, 2011
Issued at HKT 15:51

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Annex

Number of passengers fell onto tracks from 2006 to September 2010 categorized by stations (including the number of injured and fatality)

Station	2006			2007			2008			2009			January to September 2010		
	Number of cases	Number of Injured	Number of fatality	Number of cases	Number of Injured	Number of fatality	Number of cases	Number of Injured	Number of fatality	Number of cases	Number of Injured	Number of fatality	Number of cases	Number of Injured	Number of fatality
Hang Fa Chuen	2	0	0	5	0	1	2	1	0	3	1	0	1	0	0
Chai Wan	0	0	0	2	1	0	1	0	0	2	1	0	2	1	0
Kowloon Bay	4	0	0	3	1	0	0	0	0	6	2	1	0	0	0
Ngau Tau Kok	0	0	0	2	0	2	2	2	0	3	1	0	1	0	1
Kwun Tong	5	2	0	2	0	0	2	2	0	0	0	0	3	1	0
Kwai Fong	0	0	0	2	2	0	2	0	2	2	1	1	0	0	0
Kwai Hing	0	0	0	2	0	0	1	1	0	4	1	0	1	0	0
Tsuen Wan	1	1	0	2	2	0	1	0	0	3	1	0	1	1	0
Hung Hom (East Rail Line)	2	1	0	2	0	0	1	0	0	2	0	0	1	0	0
Mong Kok East	2	0	0	2	1	0	4	1	0	3	0	1	3	0	0
Kowloon Tong	5	1	1	10	2	1	6	0	1	5	1	1	7	0	0
Sha Tin	0	0	0	3	1	0	0	0	0	6	0	2	0	0	0
Tai Wai (East Rail Line)	2	1	0	0	0	0	2	1	0	4	0	1	4	1	0
Fo Tan	2	0	1	3	0	1	2	0	1	3	0	0	1	0	0
University	1	0	0	0	0	0	2	0	0	3	0	1	1	0	0
Tai Po Market	0	0	0	2	0	0	1	1	0	1	0	0	2	0	1
Tai Wo	4	0	0	1	0	0	0	0	0	2	0	0	1	0	0

Station	2006			2007			2008			2009			January to September 2010		
	Number of cases	Number of Injured	Number of fatality	Number of cases	Number of Injured	Number of fatality	Number of cases	Number of Injured	Number of fatality	Number of cases	Number of Injured	Number of fatality	Number of cases	Number of Injured	Number of fatality
Fanling	6	1	1	4	1	1	1	1	0	1	0	0	0	0	0
Sheung Shui	7	2	1	10	1	0	7	1	0	5	1	0	2	0	1
Lok Ma Chau	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0
Lo Wu	0	0	0	0	0	0	8	0	0	11	0	0	9	1	0
Tai Wai (Ma On Shan Line)	1	1	0	1	0	0	1	0	0	3	2	0	2	1	0
Che Kung Temple	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
Heng On	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Ma On Shan	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0
Hung Hom (West Rail Line)	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Light Rail	23	12	0	10	3	0	11	5	0	14	7	2	12	7	0

(Remarks：The above figures excluded 34 cases involving trespassing or attempted suicide between stations on different rail lines.)

Press Releases

LCQ3: The platform screen door and automatic platform gate retrofitting works of the MTR Corporation Limited

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Following is a question by the Hon Gary Fan Kwok-wai and a reply by the Secretary for Transport and Housing, Professor Anthony Cheung Bing-leung, in the Legislative Council today (June 19):

Question:

For many years, the MTR Corporation Limited (MTRCL) and its predecessor have collected an extra charge of $0.1 (the surcharge) per journey from passengers paying the fares with Octopus Cards, in order to pay for half of the costs of the project of retrofitting platform screen doors (PSDs) and automatic platform gates (APGs) at MTR stations. Some members of the public have queried that it is an unfair practice of MTRCL to collect the surcharge from passengers while all the income generated from displaying advertisements on PSDs and APGs goes to the Corporation. In this connection, will the Government inform this Council:

(a) whether it knows when MTRCL started to display advertisements on PSDs and APGs, of the current number of PSDs and APGs involved, as well as the income generated from such advertisements last year;

(b) given that MTRCL and passengers have each contributed half of the costs of retrofitting PSDs and APGs, whether the Government will, based on the principle of fairness, request MTRCL to directly pass on to passengers the income generated from the advertisements on PSDs and APGs according to the contribution ratio; if it will, of the implementation timetable and details; if not, the reasons for that; and

(c) whether it knows the total amount of surcharge collected by MTRCL up to the end of April 2013, when the collection of the surcharge is expected to cease, and if MTRCL will pass on to passengers the costs of retrofitting APGs for the East Rail Line and the Ma On Shan Rail Line in future?

Reply:

President,

The MTR Corporation Limited (MTRCL) has all along worked towards providing safe and reliable train service for its passengers. Though according to international railway safety operation standards, platform screen doors (PSDs) or automatic platform gates (APGs) are not essential facilities, their provision can further ensure the safety of passengers waiting at platforms and reduce the accidents of passengers falling onto the tracks.

After the successful completion of the PSD trial installation and detailed assessment at Choi Hung Station in 1997 by the pre-merger Mass Transit Railway Corporation (MTRC), it announced in 1999 to proceed with the PSD retrofitting programme at 30 underground stations on the Kwun Tong Line,

Tsuen Wan Line and Island Line in phases. For new railway lines started operating since 1998, PSDs or APGs have become a standard station feature and they are included during the planning stage of new railway projects.

The PSD retrofitting works at 30 underground stations started in 2000, and were completed in 2006. Apart from the installation of the PSDs, the works also included alterations of the environmental control systems (which comprise the ventilation, air-conditioning and smoke extract systems), construction of equipment rooms and modification of signalling system for the new operating environment with PSDs retrofitted. The total cost was about $2 billion.

As MTRC's original investment plan for constructing the early railway lines did not include this capital cost, passengers therefore had to contribute to half of the cost, i.e. $1 billion. On this basis, MTRC started to collect an additional $0.1 from each journey on the pre-merger MTR taken by passengers using Octopus cards in July 2000 until recouping the $1 billion expenditure in whole.

Given the constraints of the station structures, retrofitting PSDs at aboveground stations faced quite some technical difficulties. For instance, the complexity of installing the massive air-conditioning and ventilation systems to cope with the installation of PSDs is highly akin to station rebuilding. After the rail merger, MTRCL completed a technical study to overcome the difficulties concerned. MTRCL subsequently decided in 2008 to retrofit APGs at eight pre-merger aboveground and at-grade stations, including Heng Fa Chuen, Chai Wan, Kwai Fong, Kwai Hing, Tsuen Wan, Kowloon Bay, Ngau Tau Kok and Kwun Tong stations. The construction cost was about $300 million, with half of the cost (i.e. $150 million) similarly contributed by passengers using Octopus cards with $0.1 collected per journey. As a result, MTRCL will collect a total of $1.15 billion from passengers using Octopus cards for the retrofitting of PSDs and APGs.

My reply to the Hon Fan Kwok-wai's question is as follows:

(a) Since May 2003, the then MTRC and later MTRCL have been displaying advertisement on PSDs and APGs. A total of 17 stations and 960 PSDs and APGs have been successively involved. The revenue generated last year from this type of advertising was about $1.5 million.

(b) The purpose of collecting $0.1 for each journey using Octopus cards is to share the capital cost of retrofitting the PSDs and APGs. Last year, MTRCL invested about $17 million for the maintenance of PSDs and APGs, an amount far exceeded the advertising revenue from PSDs and APGs.

All profits generated by the advertising revenue (including those generated from the advertisements displayed on PSDs and APGs) of MTRCL are already included in MTRCL's underlying business profits. According to the profit sharing mechanism under the new Fare Adjustment Mechanism, MTRCL will, based on its underlying business profits each year, set aside an amount and put into a "fare concession account" to provide same day second trip discounts. Passengers will hence share MTRCL's operational success, and their burden from fare increase will be relieved. Taking 2012 as an example, MTRCL will contribute $150 million for this fare concession based on its underlying

business profits.

(c) Up to April 2013, MTRCL has collected a total of $1.063 billion through the collection of $0.1 for each journey using Octopus cards. It is expected that the amount will be fully recovered in the first half of 2014. The $0.1 collection arrangement will then stop. As to when half of the capital cost can be fully recovered, it depends on the patronage in the coming few months. For the APG retrofitting works along the Ma On Shan Line (MOSL), as the original number of train compartments will increase from 4 to 8, to link up with the train service of the Shatin to Central Link (SCL), the retrofitting of APGs will also have to tally with the SCL project. The existing platforms of MOSL therefore have to be extended to allow the usage of the 8-compartment trains. As the East Rail Line (EAL) will also link up with the SCL, the retrofitting works of APGs along the EAL will also proceed in tandem with the construction works of SCL, to minimise the unnecessary duplication of works and inconvenience to passengers. To address passengers' concern and the latest requirement on railway safety, the Government is discussing with MTRCL to seek for an arrangement where passengers do not have to bear part of the capital cost. A decision will be made later.

Ends/Wednesday, June 19, 2013
Issued at HKT 15:32

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Appendix II

Panel on Transport
Subcommittee on Matters Relating to Railways

List of relevant papers on retrofitting of automatic platform gates along the East Rail Line and Ma On Shan Line

Date of meeting	Committee	Minutes/Paper	LC Paper No.
21.11.2008	Subcommittee on Matters Relating to Railways	Administration's paper enclosing a paper on rail safety and installation of platform screen doors provided by the MTR Corporation Limited	LC Paper No. CB(1) 209/08-09(05) http://www.legco.gov.hk/yr08-09/english/panels/tp/tp_rdp/papers/tp_rdp1121cb1-209-5-e.pdf
		Minutes	LC Paper No. CB(1) 588/08-09 http://www.legco.gov.hk/yr08-09/english/panels/tp/tp_rdp/minutes/rdp20081121.pdf
16.1.2009	Subcommittee on Matters Relating to Railways	Paper on retrofitting of automatic platform gates from MTR Corporation Limited	LC Paper No. CB(1) 557/08-09(05) http://www.legco.gov.hk/yr08-09/english/panels/tp/tp_rdp/papers/tp_rdp0116cb1-557-5-e.pdf
		Minutes	LC Paper No. CB(1) 1146/08-09 http://www.legco.gov.hk/yr08-09/english/panels/tp/tp

Date of meeting	Committee	Minutes/Paper	LC Paper No.
			_rdp/minutes/rdp20090116.pdf
21.1.2011	Subcommittee on Matters Relating to Railways	Administration's paper on "Retrofitting of Automatic Platform Gates on the East Rail Line"	LC Paper No. CB(1)1072/10-11(01) http://www.legco.gov.hk/yr10-11/english/panels/tp/tp_rdp/papers/tp_rdp0121cb1-1072-1-e.pdf
		MTRCL's paper on "Retrofitting of Automatic Platform Gates on the East Rail Line"	LC Paper No. CB(1)1072/10-11(02) http://www.legco.gov.hk/yr10-11/english/panels/tp/tp_rdp/papers/tp_rdp0121cb1-1072-2-e.pdf
		Minutes	LC Paper No. CB(1)1916/10-11 http://www.legco.gov.hk/yr10-11/english/panels/tp/tp_rdp/minutes/rdp20110121.pdf
13.1.2012	Subcommittee on Matters Relating to Railways	MTR Corporation Limited's paper entitled "Design of next generation of railway stations and update on retrofitting platform screen doors"	LC Paper No. CB(1)785/11-12(03) http://www.legco.gov.hk/yr11-12/english/panels/tp/tp_rdp/papers/tp_rdp0113cb1-785-3-e.pdf

Date of meeting	Committee	Minutes/Paper	LC Paper No.
		Minutes	LC Paper No. CB(1)2461/11-12 http://www.legco.gov.hk/yr11-12/english/panels/tp/tp_rdp/minutes/rdp20120113.pdf
2.3.2012	Subcommittee on Matters Relating to Railways	MTR Corporation Limited's paper entitled "Supplementary information on retrofitting automatic platform gates along the East Rail Line and Ma On Shan Line"	LC Paper No. CB(1)1154/11-12(05) http://www.legco.gov.hk/yr11-12/english/panels/tp/tp_rdp/papers/tp_rdp0302cb1-1154-5-e.pdf
		MTR Corporation Limited's paper entitled "Design of next generation of railway stations and update on retrofitting platform screen doors"	LC Paper No. CB(1)785/11-12(03) http://www.legco.gov.hk/yr11-12/english/panels/tp/tp_rdp/papers/tp_rdp0113cb1-785-3-e.pdf
		Minutes	LC Paper No. CB(1)1772/11-12 http://www.legco.gov.hk/yr11-12/english/panels/tp/tp_rdp/minutes/rdp20120302.pdf

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