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Panel on Transport

Subcommittee on Matters Relating to Railways Meeting on 13 January 2012

Updated background brief on installation of platform screen doors and automatic platform gates at railway stations

Purpose

This paper provides background information on the installation of platform screen doors¹ (PSDs) and automatic platform gates² (APGs) at railway stations. It also summarizes the discussions held by the Subcommittee on Matters Relating to Railways (the Subcommittee) on the subject.

Background

2. To enhance passenger safety, the then Mass Transit Railway (MTR) Corporation started in mid-1996 to examine the feasibility of retrofitting PSDs at existing MTR stations which were built in the 1970s and 1980s. Following successful completion of the trial installation at Choi Hung Station and taking into consideration of public views, MTR Corporation decided in 1999 to proceed with the PSD Retrofitting Programme at all 74 platforms of 30 underground stations on the Tsuen Wan Line, Kwun Tong Line, and Island Line in phases. The PSD retrofitting programme was completed in the first half of 2006 at a cost of \$2 billion.

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

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.

- 3. However, there are eight at-grade or aboveground stations in the pre-merger MTR system, namely Tsuen Wan, Kwai Fong, Kwai Hing, Heng Fa Chuen, Chai Wan, Kowloon Bay, Ngau Tau Kok and Kwun Tong Stations, which are provided with natural ventilation only. Due to structural constraints of these stations, retrofitting of PSDs might involve installation of ventilation and air-conditioning systems. In 2006, MTR Corporation commenced a feasibility study on retrofitting PSDs, platform gates or any other alternatives at the eight at grade or aboveground stations. In January 2008, based on the outcome of the feasibility study, the MTR Corporation Limited (MTRCL) decided to proceed with the retrofitting of APGs at these stations. The retrofitting works were expected to be completed by the end of 2012 at a cost of about \$300 million.
- 4. For the Kowloon Canton Railway network, the station platforms of East Rail Line (ERL) and Ma On Shan Rail Line (MOSRL) are of an open environment relying on natural ventilation. Some platforms are curved and some are straight, all are without PSDs (except the East Tsim Sha Tsui Station). The pre-merger KCR Corporation (KCRC) had conducted technical studies and pointed out that, before retrofitting of APGs could be considered for the ERL stations, an automatic mechanical gap filler (MGF) system would first be installed at platforms with wide gaps between a train and a curved edge. Without installation of MGFs, such wide platform gaps might pose a risk to boarding and alighting passengers if APGs were provided. A trial on MGF was conducted at Lo Wu Station from July 2008 to the end of 2009.

Report by MTRCL in January 2011 on retrofitting of APGs on ERL

5. As reported by MTRCL in January 2011, based on the results of the technical studies regarding the retrofitting of APGs at ERL stations, it was concluded that the MGF system in its current form was not suitable for use on ERL. The trial showed that the MGF system performed poorly in terms of reliability and incurred a high number of failures. The system was even less reliable during typhoons and heavy rain, with the MGFs stalling and jamming persistently in adverse weather. Besides, MTRCL had identified some technical difficulties if APGs were to be retrofitted on ERL. MTRCL came to the view that both the signalling system and the train fleet would have to be replaced to solve all the technical problems.

<u>Proposal of retrofitting of APGs in tandem with Shatin to Central Link</u> (SCL) <u>project</u>

- 6. Under the SCL project, MTRCL also made a similar proposal of replacing the signalling system and new trains of ERL in order to permit operation of the North-South Line (NSL)³. For NSL, the following are being planned
 - (a) new platform configuration at ERL stations as service will be provided by nine-car trains as opposed to the existing 12-car trains. This will help to eliminate the wide platform gap issue as trains calling in at stations with curved platforms can berth in the straighter part of the platforms under the new configuration;
 - (b) new trains will be designed with a wider body which will help overcome the wide platform gap problem;
 - (c) a new signalling system will be installed to operate a more frequent service to make up for the capacity lost by using nine-car rather than 12-car trains; and
 - (d) new trains equipped with motoring and braking systems suitable for use with APGs will be purchased.
- 7. MTRCL is of the view that retrofitting of APGs in tandem with construction of NSL of SCL would achieve synergy because both projects would require substantial work to be done on ERL platforms. According to MTRCL, if they are undertaken separately, it is almost certain that 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 may go in to dismantle what has just been installed, creating waste and abortive work.
- 8. The Administration agrees with MTRCL's findings that synergy can be achieved if retrofitting of APGs on ERL is carried out in tandem with the SCL project. Nevertherless, the Administration has also requested MTRCL to explore retrofitting of APGs as a standalone project and retrofitting APGs at those ERL stations which do not have wide platform gaps first. With regard to a standalone project, according to MTRCL, the completion date of a standalone project would not be earlier than the estimated completion date of NSL of SCL of 2020. MTRCL explains that about 8½ years will be needed to procure and replace the signalling system

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Under the SCL project, the existing ERL will be extended from Hung Hom, crossing the harbour to reach Admiralty, thereby forming a strategic line from the border at Lo Wu or Lok Ma Chau to the heart of the business centre on Hong Kong Island. This strategic line is termed North-South Line.

and the train fleet with the first APGs being operational at the same time, and the retrofitting of APGs at all the stations will need about 1½ years. In particular, retrofitting work can only be carried out in a small window of three to four hours overnight so as not to affect normal passenger train service during the day. As regards those stations which do not have wide platform gaps, due to the technical limitations of existing signalling system, it would not be possible to retrofit APGs unless at least the signalling system is replaced. As such, the Administration agrees that it is not justifiable to pursue retrofitting of APGs as a standalone project or to retrofit APGs at stations without wide platform gaps first. The Administration also considers that the slightly earlier completion dates does not justify the abortive works involved.

Financial arrangement for the retrofitting works of platform screen doors and automatic platform gates

- 9. Contribution from passengers to the capital cost of PSD retrofitting programme is needed. Since July 2000, contribution from passengers is arranged through the collection of \$0.1 per Octopus MTR journey from passengers. The collection of the \$0.1 passenger contribution will continue until it reaches \$1 billion (i.e. half of the capital cost of the project).
- 10. For retrofitting of APGs at the eight at-grade or aboveground stations, MTRCL adopted the same financial arrangement for the PSD retrofitting programme at underground stations, i.e. half of the capital cost will be funded by charging \$0.1 to each Octopus ride in the system. This will be achieved through the extension of the charging period under the existing scheme. The rest of the capital cost will be funded by MTRCL.
- 11. By June 2010, \$775 million had been collected by MTRCL. According to the Administration, based on the financial records of the past few years, it is projected that the 10-cent collection arrangement will continue until 2017.

Discussions of the Subcommittee on the installation of platform screen doors and automatic platform gates

12. The Subcommittee has been following up on the funding arrangements for the PSD retrofitting programme, the progress of works, and the feasibility of retrofitting PSDs or APGs at the remaining stations. These issues were discussed at the Subcommittee meetings on 6 May and 13 June 2005, 4 May 2007, 27 March and 21 November 2008, 16 January

2009 and 21 January 2011.

Funding arrangements for the PSD retrofitting programme

- 13. At the meetings on 6 May and 13 June 2005, some members expressed concern about the collection of \$0.1 per Octopus MTR journey as funding assistance for the PSD retrofitting programme. They considered it unfair that passengers should bear the cost of retrofitting PSDs which were necessary to be installed for passenger safety, and it was unreasonable that the additional charge would not cease even upon completion of the PSD retrofitting programme in 2006. They held the view that given its huge profits, MTR Corporation should not be collecting \$0.1 per passenger per journey for a considerably long period of time for the retrofitting of PSDs.
- 14. MTR Corporation explained that the additional charge was intended to fund part of the substantial cost involved in retrofitting PSDs which was not covered in the original investment plan of the urban lines of MTR. MTR Corporation estimated that the \$0.1 per journey contribution from Octopus passengers would help defray about half of the total cost of the project over the life cycle of PSDs. MTR Corporation pointed out that the PSD retrofitting programme was a highly expensive project at a capital cost of \$2 billion. Contribution from passengers, which amounted to half of the cost, was \$1 billion. MTR Corporation estimated that, without taking into account the time value of money⁴ and changes in patronage, it took about 15 years counting from July 2000 to collect \$1 billion from passengers.

Timetable for the installation of PSDs or APGs at all railway stations

15. The Subcommittee was concerned about the progress in the retrofitting of PSDs or APGs at all railway stations, in order to protect passengers, especially the visually impaired and young children, from falling onto the rail tracks. At the Subcommittee meeting on 4 May 2007, members requested concrete timetables to be provided by the two pre-merger railway corporations on the installation of PSDs or APGs at the remaining railway stations where PSDs or APGs still had not been installed.

4 "Time value of money" is the idea that a dollar now is worth more than a dollar in the future, even after adjusting for inflation, because a dollar now can earn interest or other appreciation until the time the dollar in the future would be received.

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- 16. The MTR Corporation informed members that based on its preliminary study, it would take about five years to complete the retrofitting of APGs at the eight at-grade and aboveground stations. KCRC informed members that the installation of MGFs at Lo Wu Station would not be completed until end of 2008, and another five years would be required to install APGs at all KCRC stations if this was proven to be technically feasible.
- 17. In the light of the information provided by the two railway corporations, the Subcommittee passed a motion at the meeting on 4 May 2007 requesting the pre-merger MTR Corporation and KCRC to complete the installation of PSDs or APGs at all railway stations by 2012 and 2013 respectively.
- 18. At its meeting on 27 March 2008, the Subcommittee requested MTRCL to expedite the APG retrofitting programme at the eight at-grade and aboveground stations, and to provide details of the programme to facilitate the monitoring by the Subcommittee. MTRCL advised in its supplementary information paper provided to the Subcommittee that the installation of APGs at the eight at-grade and aboveground stations would be completed progressively between the second and the fourth quarter of 2012.
- 19. At its meeting on 21 November 2008, the Subcommittee expressed major concern about the progress of the installation of APGs at ERL stations, and criticized MTRCL for failing to provide a completion date for the installation works. The Subcommittee urged the Administration to ascertain with MTRCL the new completion date for installation of APGs at ERL stations, if 2013 was confirmed no longer feasible. At the meeting on 21 November 2008, the Subcommittee passed the following motion -

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

20. To follow up the matter, the Subcommittee conducted a site visit on 13 December 2008 to Lo Wu Station to observe the on-going trial on MGFs and the relevant technical issues.

21. When the subject was further discussed at the Subcommittee meeting on 16 January 2009, MTRCL explained that if APGs were provided without installation of MGFs, the wide platform gaps between a train and a curved edge at the ERL stations might pose a risk to boarding and alighting passengers. MTRCL informed members that sufficient test data for analysis and assessment on the performance of MGFs would be ready by September 2009, and the full review would be completed by the end of 2009.

MTRCL's proposal of retrofitting of APGs in tandem with SCL project

22. At its meeting on 21 January 2011, the Subcommittee discussed the major findings of MTRCL's technical studies regarding the retrofitting of APGs on ERL. Subcommittee members in general expressed dissatisfaction with the findings and the MTRCL's proposal of retrofitting of APGs in tandem with the SCL project. Some members suggested that consideration could be given to installing APGs at certain busy ERL stations, such as the Kowloon Tong Station, where the platforms were less curved. These members considered that MTRCL should not just emphasize cost considerations in contemplating whether the two projects should be implemented in tandem or separately. The Subcommittee passed the following motion at the meeting on 21 January 2011-

"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 three years at MTRCL's stations which have not been retrofitted with platform screen doors or APGs, but MTRCL still refuses to immediately retrofit APGs on its ERL and MOSRL 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."

- 23. The Subcommittee urged MTRCL to make sustained efforts in exploring feasible solutions which could enable retrofitting APGs at ERL stations as early as possible, at least at those without wide platform gaps first, with a view to enhancing passenger safety.
- 24. At the request of the Subcommittee, the Administration provided a supplementary information paper on 18 August 2011 (Annex II to CB(1)2922/10-11(01)) on the additional cost implication if the APG project on ERL and the SCL project were implemented separately and its response

to the motion passed on 21 January 2011.

Council Questions

25. Hon Andrew CHENG asked a question about the retrofitting of PSDs and APGs at MTR stations at the Council meeting on 17 March 2010. Hon WONG Sing-chi asked two questions on the same subject at the Council meetings on 3 November 2010 and 6 April 2011 respectively. Hon KAM Nai-wai also asked a question on platform safety in MTR stations at the Council meeting on 2 March 2011. The questions and the Administration's replies are attached at **Appendix I** for members' reference.

Latest developments

26. The Administration and MTRCL will provide a progress report on the retrofitting of APGs on ERL at the next Subcommittee meeting on 13 January 2012.

Relevant papers

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

Council Business Division 1
<u>Legislative Council Secretariat</u>
6 January 2012

Appendix I

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

■ Annex

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):

Ouestion:

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.

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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

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 $\ensuremath{\mathsf{LCQ14}}\xspace$ Retrofitting of Platform Screen Doors and Automatic Platform Gates at MTR stations

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 (November 3):

Ouestion:

Since July 3, 2000, the then Mass Transit Railway (MTR) Corporation and the MTR Corporation Limited (MTRCL) have respectively collected an extra charge of \$0.1 for each Octopus journey from passengers (the collection arrangement) to fund the project of retrofitting platform screen doors or automatic platform gates at 30 underground stations as well as eight aboveground and at-grade stations (the retrofitting project). The expenditure of the retrofitting project is about \$2.3 billion, half of which is contributed by passengers through the collection arrangement, and MTRCL had collected \$730 million as at the end of 2009. In this connection, will the Government inform this Council:

- (a) given that in their reply to a question raised by a Member of this Council on June 9, 2010, the authorities stated that according to the estimate by MTRCL with reference to its financial records of the past few years, the collection arrangement will continue until 2017 to enable full recovery of the retrofitting project cost, whether the Government knows if there is any change to the cost of the retrofitting project at present; if there is, of the latest estimation and the reasons for such a change, as well as when the collection arrangement will last;
- (b) whether it knows the accrued amount collected by MTRCL to date through the collection arrangement; whether the amount is sufficient to cover half of the expenditure of the retrofitting project; if so, of the progress and timetable of the retrofitting project; if not, whether MTRCL will revise its original option of sharing half of the project cost only and put in more resources to speed up the progress of the retrofitting project in order to protect passengers' safety;
- (c) whether it knows the details of the works which MTRCL decided in 2008 to carry out at the eight aboveground and at-grade stations of the pre-merger MTR system, including the progress, timetable and expenditure, etc. of the works (list by the name of the stations); and
- (d) of the number of accidents of passengers falling onto rail tracks due to various reasons in each of the past five years and the number of passengers involved; among them, the number of accidents which happened at stations without platform screen doors or automatic platform gates as well as the number and percentage of passengers involved?

Reply:

President,

For the various parts of the question, our reply is set out below:

(a) and (b) The pre-merger MTR Corporation Limited (MTRCL) announced in early 1999 the retrofitting of platform screen doors (PSDs) at 30 underground stations. The retrofitting programme was completed in 2006. As the works required a high capital cost of \$2 billion which was not covered in the original investment plan of the MTR urban lines, after discussion with the Legislative Council, half of the project cost would be borne by

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- Appendix 1
- Appendix 2

MTRCL while the remaining half of the project cost (i.e. \$1 billion) would be met through collecting 10 cents per trip from passengers using Octopus card. As such, collection of the 10 cents per trip from passengers using Octopus card travelling on the pre-merger MTR lines began in July 2000 and the arrangement will continue until the cost of \$1 billion is recovered in full.

In 2008, MTRCL decided to retrofit automatic platform gates (APGs) at the eight aboveground and at-grade stations in the former MTR system. These stations are Heng Fa Chuen, Chai Wan, Kwai Fong, Kwai Hing, Tsuen Wan, Kowloon Bay, Ngau Tau Kok and Kwun Tong Stations. The cost of the retrofitting works is about \$300 million, half of which would continue to be borne by passengers using Octopus card through collecting 10 cents per trip and the other half would be borne by MTRCL.

By June 2010, \$775 million had been collected by MTRCL. Based on the financial records of the past few years, it is projected that the 10-cent collection arrangement will continue until 2017, which is the same as the projection announced previously.

(c) The works of retrofitting APGs at the eight aboveground and at-grade stations started in 2010, and are expected to be completed by the end of 2011, one year earlier than originally scheduled. The progress of the works is tabulated in appendix 1.

According to MTRCL, the contracts for the aforementioned works with an overall cost of \$300 million do not have cost breakdown by stations.

(d) Passenger-on-track cases 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). Over the past five years, all such cases happened at stations without PSDs (Note). The number of cases is set out in appendix 2.

(Note) The cases for 2006 include two cases involving contractor staff at stations with PSDs. One was a case of a contractor staff fallen onto the track by accident, and the other was a trespass onto the track involving 10 contractor staff.

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Appendix 1: Progress of the works of retrofitting automatic platform gates ("APGs") at the eight MTR aboveground and at-grade stations

Detailed design	Detailed design						
On-site prototype	Completed						
Manufacturing of	APGs		Ongoing				
Reliability test			Ongoing				
	Island Line Hang Fa Chuen Station						
	Island Line	Chai Wan Station	April 2010				
	Kwun Tong	Kowloon Bay Station					
Commencement	Line	Ngau Tau Kok Station	Commenced in				
of retrofitting	Tsuen Wan	Kwai Fong Station	July 2010				
works at various	Line	Kwai Hing Station					
stations	Kwun Tong Line	Kwun Tong Station	To commence in				
	Tsuen Wan Line	Tsuen Wan Station	February 2011				
Completion of all	retrofitting work	S	End 2011				

Appendix 2: Number of MTR Passenger-on-track cases over the past five years

	Fallen onto the	Suicide and	Trespassing	Total
	track by accident	attempted suicide	onto the track	Total
2006 Note	24 (25)	10 (10)	44 (54)	78 (89)
2007	15 (16)	10 (10)	51 (53)	76 (79)
2008	13 (14)	7 (8)	40 (45)	60 (67)
2009	20 (20)	19 (20)	59 (72)	98 (112)
2010 (up to	15 (16)	4 (4)	46 (59)	65 (79)
September)	15 (10)	. (1)	10 (37)	05 (17)
Total	87 (91)	50 (52)	240 (283)	377 (426)

(Numbers in brackets represent the number of persons involved. Some cases involved more than one person.)

Note The cases for 2006 include two cases involving contractor staff at stations with platform screen doors. One was a case of a contractor staff fallen onto the track by accident, and the other was a trespass onto the track involving ten contactor staff.

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LCQ9: Retrofitting platform screen doors or automatic platform gates at MTR stations $\,$

Annex

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):

Ouestion:

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.

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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)

2006			2007		2008		2009			January to September 2010					
Station	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

G	2006		2007		2008			2009			January to September 2010				
Station	Number of cases	Number of Injured	Number of fatality	Number of cases	Number of Injured	Number of fatality	Number of cases	Number of Injured	of	Number of cases	Number of Injured	Number of fatality	Number of cases	Number of Injured	of
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.)

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LCQ15: Platform safety of MTR stations

Following is a question by the Hon Kam Nai-wai and a written reply by the Secretary for Transport and Housing, Ms Eva Cheng, at the Legislative Council meeting today (March 2):

Question:

Regarding platform safety in railway stations of the MTR Corporation Limited ("MTRCL"), will the Government inform this Council:

- (a) whether it knows, in each of the past three years, the number of staff deployed by MTRCL at station platforms during train service hours to assist in regulating passenger flows and advise passengers not to bump into or charge the train doors, with a breakdown by rail line, name of station, whether or not platform screen doors ("PSDs") or automatic platform gates ("APGs") are installed, as well as the place and time periods of such staff deployment; whether additional staff are deployed by MTRCL during peak hours to maintain order at station platforms; if so, of the details (including the number of additional staff so deployed and the criteria and time periods for such deployment); if not, the reasons for that; whether MTRCL has reviewed the adequacy of its existing manpower and the effectiveness of deploying staff to maintain order at platforms; if it has, of the details, if not, the reasons for that;
- (b) whether it knows, in each of the past three years, the number of MTRCL staff falling onto rail tracks while maintaining order, with a breakdown by rail line, name of station, whether or not PSDs or APGs are installed and the working hours of the staff; whether there are means to prevent staff working at platforms without PSDs or APGs from falling onto the tracks, and whether the effectiveness of such means has been reviewed; if so, of the details, if not, the reasons for that;
- (c) whether it knows if MTRCL had compiled statistics in each of the past five years on delays in train service and other consequences caused by passengers falling onto rail tracks due to various reasons; if so, of the details; if not, the reasons for that; and
- (d) given that in his reply to a question raised by a Member of this Council on June 9, 2010, the Secretary for Transport and Housing indicated that a number of measures (such as installing platform gap fillers and yellow tactile strips in the gaps and along the edges of the platforms, installing illumination and flashing lights under the platforms and at the edge of the platforms respectively, installing CCTV systems at platforms, broadcasting announcements at platforms and in train compartments, as well as conducting education activities, etc.) had been taken by MTRCL in order to prevent passengers from falling onto the tracks in stations where PSDs or APGs had not been installed, whether it knows:
- (i) if MTRCL had reviewed the effectiveness of those measures and explored other more effective options in the past three years; if it had reviewed and explored, of the details; if not, the reasons

for that; and

(ii) if MTRCL has put in place a mechanism to inspect and maintain such facilities on a regular basis; if it has, of the details and the resources (including the amount of expenditure) put in; if not, the reasons for that?

Reply:

President,

For the various parts of the question, our reply is set out below:

(a) All platforms of the various railway lines of the MTR Corporation Limited (MTRCL) are always manned by station staff during operating hours of the day. In general, during the morning and evening peak hours and at stations with busier traffic (Note 1), the passenger flow is heavier and MTRCL will arrange more staff and platform assistants to assist with crowd control and maintain order. For the Light Rail, MTR staff patrol Light Rail stops regularly and maintain close communication with the operation control centre in order to provide assistance to passengers. During peak hours, MTRCL also arranges platform assistants at Light Rail stops with high passenger flow (Note 2) to assist passengers in boarding and alighting Light Rail vehicles.

The major duties of station staff and platform assistants include: (i) reminding passengers to queue up and maintain order of waiting passengers before arrival of trains; (ii) reminding passengers to queue up if they are not standing in the waiting queue; (iii) preventing passengers from walking through queues, and making sure that they stand behind the yellow line; (iv) monitoring whether there is congestion of passengers and taking necessary actions to ease the congestion; and (v) assisting passengers in boarding and alighting trains, and preventing passengers from rushing into trains when train doors are closing.

MTRCL will arrange station staff and platform assistants to assist with crowd control at platforms considering the needs of different railway lines and stations. Instead of being assigned to perform duty at a designated station, these station staff and platform assistants will be deployed according to the needs of different stations and time periods. In fact, MTRCL has strengthened related manpower according to the overall need so as to provide better service to passengers. According to information provided by MTRCL, over the past three years, the number of station staff and platform assistants performing duties at heavy and light rail platforms increased from 1,073 in 2008 to 1,118 in 2009 and 1,172 in 2010. MTRCL conducts review on related staff establishment regularly and makes appropriate adjustments whenever necessary.

MTRCL introduces new measures from time to time in order to strengthen passenger safety awareness when they travel on the MTR, and appeals to passengers to maintain good order. For example, since July 2010, during peak hours at MTR interchange stations (Note 3), platform assistants will hold up the "Stop" sign and activate the electronic whistle when train doors are about to close, in order to urge passengers not to attempt entering train compartments when train doors are closing. This measure will gradually be introduced to other stations of the MTR system, with a view to reminding passengers more effectively not

to rush into train compartments when train doors are closing.

- (b) Over the past three years, no MTR staff fell onto track when performing crowd control duties. In fact, all station staff or platform assistants performing platform duties are required to attend the related training before carrying out platform duties. They also need to attend refresher courses every year. Contents of the courses emphasise that, when performing duties at platform without platform screen doors or automatic platform gates, station staff and platform assistants must stand behind the yellow line, and that ensuring the safety of passengers and that of their own is the first priority.
- (c) and (d) Passengers fall onto the track for various reasons, including: (i) falling onto the track by accident (e.g. under the influence of alcohol or medicine, due to sickness etc); (ii) suicides and attempted suicides; and (iii) 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).

In the past five years, there were 61 cases of train service delay of eight minutes or more as a result of passenger(s) fallen onto the track.

The design of platforms at stations of the existing railway system is safe. MTR is a railway system carrying 1.5 billion passenger trips annually. In the past three years, the number of reportable events (Note 4) per million passengers carried is about 1.1 cases yearly. To raise the safety awareness of the passengers, MTRCL has been organising promotional campaigns from time to time. MTRCL also reviews and makes new plans for such promotional campaigns every year. Regarding trespassing cases in the East Rail Line, MTRCL installed additional notices indicating that entering tracks is forbidden at platforms of the East Rail Line in recent years.

As regards the relevant platform facilities, station staff inspect the related facilities on a daily basis to make sure that they are in good condition. MTRCL also conducts regular maintenance of such facilities. Since the expenses for the maintenance works concerned are part of the overall maintenance expenses of stations, MTRCL does not have breakdown for this individual item.

Note 1: Of the 84 MTR stations, platform assistants are already arranged for 73 busy stations, except Kwai Hing, Tai Wo Hau, Che Kung Temple, Shek Mun, Wu Kai Sha, Tung Chung, Asia World-Expo, Sai Wan Ho, Shau Kei Wan, Chai Wan and LOHAS Park Stations.

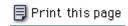
Note 2: Including Town Centre, Tuen Mun, Ming Kum, Shek Pai, Choy Yee Bridge, Tai Hing (North), Tai Hing (South), Ngan Wai, Prime View, Affluence, Tuen Mun Hospital, Siu Hong, Lam Tei, Leung King, San Wai, Hung Shui Kiu, Hang Mei Tsuen, Tin Yiu, Locwood, Tin Shui, Chung Fu, Chestwood, Tin Heng, Tin Sau, Tin Yuet, Tin Wing, Ginza, Tin Tsz, Tin Shui Wai, Tai Tong Road and Yuen Long stops.

Note 3: Including Tsim Sha Tsui, East Tsim Sha Tsui, Yau Ma Tei, Mong Kok, Prince Edward, Mei Foo, Lai King, Central, Admiralty, North Point, Quarry Bay, Yau Tong, Tiu Keng Leng, Hong Kong, Tsing Yi, Hung Hom, Kowloon Tong, Tai Wai, Nam Cheong, Yuen Long, Tin Shui Wai, Siu Hong and Tuen Mun stations.

Note 4: Reportable events refer to the accidents and occurrences that are to be reported to the Government under the Mass Transit Railway Regulations (Cap. 556A).

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List of relevant papers

Date of meeting	Committee	Minutes/Paper	LC Paper No.
6.5.2005	Subcommittee on Matters Relating to Railways	Information paper provided by the MTR Corporation Limited	LC Paper No. CB(1)1406/04-05(03) http://www.legco.gov.hk/y r04-05/english/panels/tp/tp rdp/papers/tp_rdp0506cb 1-1406-3e.pdf
		Minutes of the meeting	LC Paper No. CB(1)1968/04-05 http://www.legco.gov.hk/y r04-05/english/panels/tp/tp rdp/minutes/rd050506.pd f
13.6.2005	Subcommittee on Matters Relating to Railways	Information paper provided by the MTR Corporation Limited	LC Paper No. CB(1)1722/04-05(03) http://www.legco.gov.hk/y r04-05/english/panels/tp/tp rdp/papers/tp rdp0613cb 1-1722-3e.pdf
		Minutes of the meeting	LC Paper No. CB(1)2199/04-05 http://www.legco.gov.hk/y r04-05/english/panels/tp/tp rdp/minutes/rd050613.pd f
4.5.2007	Subcommittee on Matters Relating to Railways	Background Brief on retrofitting of platform screen doors and automatic platform gates at railway stations	LC Paper No. CB(1)1448/06-07 http://www.legco.gov.hk/y r06-07/english/panels/tp/tp rdp/papers/tp_rdp0504cb 1-1448-e.pdf

Date of meeting	Committee	Minutes/Paper	LC Paper No.
meeting		Minutes of the meeting	LC Paper No. CB(1)2056/06-07 http://www.legco.gov.hk/y r06-07/english/panels/tp/tp rdp/minutes/rd070504.pd f
27.3.2008	Subcommittee on Matters Relating to Railways	Background brief on certain matters raised by the Bills Committee on Rail Merger Bill	LC Paper No. CB(1)1037/07-08 http://www.legco.gov.hk/y r07-08/english/panels/tp/tp rdp/papers/tp_rdp0327cb 1-1037-e.pdf
		Minutes of the meeting	LC Paper No. CB(1)1374/07-08 http://www.legco.gov.hk/y r07-08/english/panels/tp/tp rdp/minutes/rd080327.pd f
		Administration's letter on progress update on matters arising from the Rail Merger Bill, attaching a paper from MTR Corporation Limited on the progress of the related matters (Annex 2)	
		Paper on retrofitting of automatic platform gates at 8 MTR at-grade and aboveground stations from MTR Corporation Limited (Follow-up paper)	CB(1)1398/07-08(01)
21.11.2008	Subcommittee on Matters Relating to	Updated background brief on installation of platform screen doors	CB(1)211/08-09

Date of meeting	Committee	Minutes/Paper	LC Paper No.
	Railways	and automatic platform gates at railway stations	r08-09/english/panels/tp/tp rdp/papers/tp_rdp1121cb 1-211-e.pdf
		Information paper provided by the MTR Corporation Limited	LC Paper No. CB(1)209/08-09(05) http://www.legco.gov.hk/y r08-09/english/panels/tp/tp rdp/papers/tp_rdp1121cb 1-209-5-e.pdf
		Minutes of the meeting	LC Paper No. CB(1)588/08-09 http://www.legco.gov.hk/y r08-09/english/panels/tp/tp rdp/minutes/rdp2008112 1.pdf
16.1.2009	Subcommittee on Matters Relating to Railways	Information paper provided by the MTR Corporation Limited	LC Paper No. CB(1)557/08-09(05) http://www.legco.gov.hk/y r08-09/english/panels/tp/tp rdp/papers/tp_rdp0116cb 1-557-5-e.pdf
		Minutes of the meeting	LC Paper No. CB(1)1146/08-09 http://www.legco.gov.hk/y r08-09/english/panels/tp/tp rdp/minutes/rdp2009011 6.pdf
21.1.2011	Subcommittee on Matters Relating to Railways	Information paper provided by the Administration	LC Paper No. CB(1)1072/10-11(01) http://www.legco.gov.hk/y r10-11/english/panels/tp/tp _rdp/papers/tp_rdp0121cb 1-1072-1-e.pdf
		Information paper provided by the MTR Corporation Limited	LC Paper No. CB(1)1072/10-11(02) http://www.legco.gov.hk/y

Date of meeting	Committee	Minutes/Paper	LC Paper No.
			r10-11/english/panels/tp/tp _rdp/papers/tp_rdp0121cb 1-1072-2-e.pdf
		Minutes of the meeting	LC Paper No. CB(1)1916/10-11 http://www.legco.gov.hk/y r10-11/english/panels/tp/tp _rdp/minutes/rdp2011012 1.pdf
		the additional cost implication if APG	r10-11/english/panels/tp/tp _rdp/papers/tp_rdp1104cb

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