立法會 Legislative Council

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Panel on Transport

Subcommittee on Matters Relating to Railways Meeting on 12 July 2019

Updated background brief on railway safety

Purpose

This paper provides updated background information on railway safety and summarizes the major views and concerns expressed by the Legislative Council ("LegCo") Members during previous discussions on the subject.

Background

2. Both the Administration and the MTR Corporation Limited ("MTRCL") are accountable for ensuring railway safety. Their roles are described in the following paragraphs.

Role of the Administration

3. The Administration requires MTRCL to provide safe and reliable railway services at all times. The Transport and Housing Bureau is responsible for overseeing the overall policy on monitoring railway safety and regulating railway services. The Electrical and Mechanical Services Department ("EMSD") is the statutory regulatory authority on railway safety. Pursuant to the Mass Transit Railway Ordinance (Cap. 556) ("the Ordinance") and Mass Transit Railway Regulations (Cap. 556A) ("the Regulations"), EMSD regulates and monitors the safe operation of the MTR system. The Railways Branch ("RB") was established under EMSD

in February 2008¹ and its major functions include ensuring the adoption of appropriate safety measures by MTRCL; assessing and vetting new railway projects and major modifications of existing railway facilities; assessing and following up with MTRCL on improvement measures in respect of railway safety; and investigating into railway incidents.

RB under EMSD adopts a "risk-based approach" in monitoring the 4. safety of the MTR service, so that it will step up inspections on the safety-critical components of the railway system, railway equipment with higher safety risks, or facilities with higher rates of failure. Under the Ordinance and the Regulations, RB may enter the railway premises of MTRCL to conduct inspection for the sake of ensuring railway safety and investigation of railway incidents; and request MTRCL to submit information or documents. RB also monitors the robustness of MTRCL in its internal systems and management practices to ensure that MTRCL adheres to best international safety practices and standards. In the case of railway incidents, RB will, where necessary, look into the cause, identify appropriate improvement measures for MTRCL's follow-up action, and ensure that MTRCL will duly implement these measures to prevent recurrence.

Role of MTRCL

5. The Ordinance stipulates that MTRCL shall maintain a proper and efficient service at all times during the franchise period in accordance with the Ordinance and the Operating Agreement ("OA") entered into between the Government and the Corporation. In accordance with the Regulations, MTRCL should report to EMSD any incident that occurred at any part of the entire railway premises which has a direct bearing on the safe operation of the railway.

Members' major views and concerns

6. Members have expressed views and concerns about railway safety on various occasions. Their major views and concerns are summarized in the ensuing paragraphs.

¹ Before the establishment of RB, Hong Kong Railway Inspectorate, established in 1990, was the regulatory body of the railway lines operated by MTRCL and Kowloon-Canton Railway Corporation, and the Automated People Mover operated by the Airport Authority at the Hong Kong International Airport.

Creation of two directorate posts in EMSD to enhance monitoring of railway safety

7. The Subcommittee on Matters Relating to Railways ("the Subcommittee") was briefed in March 2015 on the Administration's staffing proposal to create two permanent directorate posts in RB of EMSD, including a Chief Electrical and Mechanical Engineer post and a Chief Electronics Engineer post, for enhancing the safety inspection and monitoring of the existing railway service and new railway project respectively. The proposal was supported by the Subcommittee ("FC"), and was approved by FC in November 2015.

8. During the deliberations of the above staffing proposal, Members in general were concerned in what ways the creation of two Chief Engineer ("CE") posts would enable RB to enhance its monitoring work on MTRCL's safety. A Member also enquired about the relevant manpower arrangements and work plans in this regard after obtaining funding for the creation of the new posts. In response, the Administration advised that with the additional manpower, EMSD would, apart from handling the additional workload generated by the increase in train frequency and expansion of the railway network, step up daily regulatory work at various levels, including: (i) conducting regular safety inspections specifically focusing on MTRCL's maintenance work for the safety critical components of the railway system; (ii) looking into similar components of the railway system when incidents occurred to avoid recurrence; and (iii) increasing the frequency and depth of various inspections so as to extend its inspection work to the system level, for instance, by proactively looking into the workflow of MTRCL on its maintenance of various critical electrical and mechanical safety systems, as well as the establishment of MTRCL's personnel, in order to enhance railway safety performance. Specifically, the number of inspections conducted by EMSD would increase progressively from 168 in 2014 to around 280 in 2020.

9. The Administration added that EMSD would also introduce new elements to its existing regulatory regime by reviewing and refining the safety regulatory regime over MTRCL from a macro and strategic perspective, including auditing the whole set of safety management and asset management work of MTRCL, e.g. asset inspection, maintenance and renewal, for a more comprehensive and in-depth monitoring of the quality of MTRCL's safety management and asset management. These new measures, together with the existing regulatory mechanism, would enhance the effectiveness of the monitoring work on railway safety and the internal management of MTRCL.

10. On some Members' concern about the performance indicators for and deliverables of the two CE posts, the Administration advised that the quantitative indicators for measuring the performance of the two posts included the numbers of inspection on facilities and investigations conducted on railway incidents, as well as the number of works proposals submitted by MTRCL for vetting by RB. As regards quality improvement in train service, the Administration advised that the regulatory work of RB would be expanded to cover undertaking proactive inspection work at the system level to examine MTRCL's workflow, procedures and safety management system in addition to conducting purposeful investigations after occurrence of railway incidents. Moreover, the two CEs would seek to enhance the transparency of MTRCL's operation to facilitate monitoring by the public and LegCo. They would also be responsible for keeping EMSD's railway safety regulatory regime on a par with the international standards and best practices.

Railway incidents

At the Subcommittee meetings held in the Sixth LegCo on 17 11. January 2017, 28 April 2017, 2 June 2017, 1 December 2017, 10 April 2018, 29 October 2018 and 29 March 2019, members expressed grave concern over the heavy rail incidents, in particular the service disruption of four MTR lines on 16 October 2018 and the incident of the new signalling system testing on Tsuen Wan Line on 18 March 2019. Given the serious railway incidents, the occurrences of members urged Administration to step up measures to enhance railway safety and Members also raised concern over the role of EMSD in reliability. ensuring railway safety and urged EMSD to follow up on MTRCL's progress in implementing the improvement measures to avoid recurrence of similar incidents.

12. Members noted with serious concern that signalling fault was a common cause of railway incidents. In view that MTRCL was progressing with the replacement of signalling systems of its seven railway lines, some Members were concerned how the Administration monitored the replacement projects in order to ensure that MTRCL maintained the provision of safe and reliable railway service.

13. The Administration advised that as the statutory regulatory authority on railway safety EMSD monitored the signalling system upgrades of various railway lines to ensure that the new signalling systems would operate safely and railway safety would not be compromised in the course of the upgrading works and tests for the new signalling systems. MTRCL would appoint independent experts to offer advice in respect of the upgrading works. It was also required to submit a risk assessment report to EMSD to ensure that the new systems meet international safety standards. EMSD held regular meetings with MTRCL to hear the Corporation's report on the upgrading works, including the results of safety performance tests conducted in respect of the new systems by MTRCL. EMSD personnel would observe the on-site tests on the new signalling systems conducted by MTRCL to ensure their safe operation. In case of railway incidents due to signalling system faults during the upgrading works and tests on the new signalling systems, EMSD would conduct investigations as per established mechanism to look into the causes. Where necessary, EMSD would ask MTRCL to make improvements, and would follow up on MTRCL's progress in implementing the improvement measures.

14. At the Subcommittee meeting on 1 June 2018, concern was raised over the notification mechanism in respect of incidents which occurred during the trial operations of the Hong Kong Section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link. In response, the Administration advised that MTRCL had followed the prevailing incident notification mechanism to inform EMSD as soon as practicable after the occurrence of incidents affecting railway safety or incidents that may attract media or public attention such as collision, derailment, interruption to traction power, station partial/total black-out, broken rail, etc. Moreover, MTRCL was also required to notify the Highways Department on incidents causing severe personal injuries, giving rise to media public attention, etc.

Escalator and lift safety

15. At the Council meetings in July 2011, March 2012 and December 2015, Members expressed concern over the safety of MTR's lifts and escalators as accidents involving escalators occurred one after another in railway premises. In response, the Administration explained that all suppliers and maintenance contractors of escalators and passenger lifts in the MTR network were registered with EMSD. The design, construction, examination, testing and maintenance of escalators and passenger lifts should comply with the requirements of the Lifts and Escalators Ordinance (Cap. 618) and its subsidiary legislation. All escalators and passenger lifts should be approved by the EMSD before they were put into service. In 2014, EMSD conducted a total of 241 inspections of the escalators in MTR stations and found no irregularities.

Latest development

16. The Administration plans to seek support for its application to

create two permanent directorate posts in the Railways Branch of EMSD to enhance monitoring of railway safety at the Subcommittee meeting to be held on 12 July 2019.

Relevant papers

17. A list of relevant papers is at **Appendix**.

Council Business Division 4 Legislative Council Secretariat 27 June 2019

Appendix

Updated background brief on railway safety

List of relevant papers

| Date of meeting | Committee | Minutes/Paper | LC Paper No. |
|--------------------|--|--|---|
| 21.2.2011 | Subcommittee on Matters Relating to Railways | Administration's paper on recent railway incidents involving MTR rail cracks | CB(1)1323/10-11(02) http://www.legco.gov.hk/yr10-11/e nglish/panels/tp/tp_rdp/papers/tp_r dp0221cb1-1323-2-e.pdf |
| | | MTR Corporation Limited's paper on recent railway incidents involving MTR rail cracks | CB(1)1323/10-11(03) http://www.legco.gov.hk/yr10-11/e nglish/panels/tp/tp_rdp/papers/tp_r dp0221cb1-1323-3-e.pdf |
| | | Minutes of meeting | CB(1)3029 /10-11 http://www.legco.gov.hk/yr10-11/e nglish/panels/tp/tp_rdp/minutes/rdp 20110221.pdf |
| 2.3.2011 | Council Meeting | Hon KAM Nai-wai raised a question on platform safety of MTR stations | http://www.info.gov.hk/gia/general /201103/02/P201103020118.htm |
| 9.3.2011 | Council Meeting | Hon WONG Kwok-hing raised a question on railway safety | http://www.info.gov.hk/gia/general /201103/09/P201103090115.htm |
| 18.3.2011 | Subcommittee on Matters Relating to Railways | Administration's paper on MTR Tsuen Wan Line service disruption on 21 October 2010 | CB(1)1585/10-11(03) http://www.legco.gov.hk/yr10-11/e nglish/panels/tp/tp_rdp/papers/tp_r dp0318cb1-1585-3-e.pdf |
| | | Administration's paper on recent railway incidents involving MTR rail cracks | CB(1)1585/10-11(04) http://www.legco.gov.hk/yr10-11/e nglish/panels/tp/tp_rdp/papers/tp_r dp0318cb1-1585-4-e.pdf |

| Date of meeting | Committee | Minutes/Paper | LC Paper No. |
|--------------------|--|--|---|
| | | MTR Corporation Limited's paper on follow-up actions on MTR Tsuen Wan Line service disruption on 21 October 2010 | CB(1)1585/10-11(05) http://www.legco.gov.hk/yr10-11/e nglish/panels/tp/tp_rdp/papers/tp_r dp0318cb1-1585-5-e.pdf |
| | | MTR Corporation Limited's paper on recent railway incidents involving MTR rail cracks | CB(1)1585/10-11(06) http://www.legco.gov.hk/yr10-11/e nglish/panels/tp/tp_rdp/papers/tp_r dp0318cb1-1585-6-e.pdf |
| | | Minutes of meeting | CB(1)2913/10-11 http://www.legco.gov.hk/yr10-11/e nglish/panels/tp/tp_rdp/minutes/rdp 20110318.pdf |
| 13.7.2011 | Council Meeting | Hon IP Kwok-him raised a question on escalator incidents | http://www.info.gov.hk/gia/general /201107/13/P201107130223.htm |
| | | Hon IP Wai-ming raised a question on safety of lifts and escalators in railway premises | http://www.info.gov.hk/gia/general /201203/28/P201203270466.htm |
| 5.7.2013 | Matters Relating | MTR Corporation Limited's paper on service performance of the MTR Corporation Limited | http://www.legco.gov.hk/yr12-13/e |
| | | Minutes of meeting | CB(1)534/13-14 http://www.legco.gov.hk/yr12-13/e nglish/panels/tp/tp_rdp/minutes/rdp 20130705.pdf |
| 20.12.2013 | Subcommittee on Matters Relating to Railways | Administration's paper on Tseung Kwan O Line service disruption on 16 December 2013 (Chinese version only) | $h_{44m} / f_{44m} = 10 - 20 - 20 + 10 - 10 - 10 - 10 - 10 - 10 - 10 - 1$ |

| Date of meeting | Committee | Minutes/Paper | LC Paper No. |
|-----------------------------|------------------|---|---|
| | | Minutes of meeting | CB(1)1011/13-14 http://www.legco.gov.hk/yr13-14/e nglish/panels/tp/tp_rdp/minutes/rdp 20131220.pdf |
| 28.2.2014 | | 1 1 | http://www.legco.gov.hk/yr13-14/e nglish/panels/tp/tp_rdp/papers/tp_r dp0228cb1-980-5-e.pdf |
| | | Minutes of meeting | CB(1)1928/13-14 http://www.legco.gov.hk/yr13-14/e nglish/panels/tp/tp_rdp/minutes/rdp 20140228.pdf |
| 9.4.2014 | Council Meeting | Hon Albert HO Chun-yan raised a question on railway safety | (201404/00) (D201404000200 htm) |
| 4.7.2014 | - | MTR Corporation Limited's paper on East Rail Line service disruptions on 27 and 28 April, and 1 and 2 May 2014 | http://www.lacao.cov.hl/ww12 11/a |
| | | Minutes of meeting | CB(1)139/14-15 http://www.legco.gov.hk/yr13-14/e nglish/panels/tp/tp_rdp/minutes/rdp 20140704.pdf |
| 2.1.2015 and 6.3.2015 | Matters Relating | Administration's paper on the outcome of the independent expert's review on MTR overhead line system as a result of the insulator incidents in February 2014 | https://www.lacas.cov.hls/wel/15/ |

| Date of meeting | Committee | Minutes/Paper | LC Paper No. |
|--------------------|-------------|---|---|
| | | Minutes of meetings | CB(4)623/14-15 https://www.legco.gov.hk/yr14-15/ english/panels/tp/tp_rdp/minutes/rd p20150102.pdf CB(4)1108/14-15 https://www.legco.gov.hk/yr14-15/ english/panels/tp/tp_rdp/minutes/rd p20150306.pdf |
| 6.3.2015 | to Railways | Administration's paper on creation of two permanent directorate posts in the Railways Branch of the Electrical and Mechanical Services Department ("EMSD") to enhance monitoring of railway safety | https://www.legco.gov.hk/yr14-15/ english/papels/tp/tp_rdp/papers/tp |
| | | The MTR Corporation Limited's final report of stray dog incident on 20 August 2014 (English version only) | https://www.legco.gov.hk/yr14-15/ |
| | | Minutes of meeting | CB(4)1108/14-15 https://www.legco.gov.hk/yr14-15/ english/panels/tp/tp_rdp/minutes/rd p20150306.pdf |
| 29.6.2015 | | Administration's paper on proposed creation of two permanent posts of one Chief Electrical and Mechanical Engineer (D1) and one Chief Electronics Engineer (D1) in the EMSD with immediate effect upon the approval by the Finance Committee to enhance the safety inspection and monitoring of existing railway service and new railway projects | EC(2015-16)7 https://www.legco.gov.hk/yr14-15/ english/fc/esc/papers/e15-07e.pdf |

| Date of meeting | Committee | Minutes/Paper | LC Paper No. |
|--------------------|----------------------|--|--|
| | | Minutes of meeting | ESC114/14-15 https://www.legco.gov.hk/yr14-15/ english/fc/esc/minutes/esc2015062 9.pdf |
| 27.11.2015 | Finance Committee | Recommendations of the Establishment Subcommittee made on 29 June 2015 | FCR(2015-16)31 https://www.legco.gov.hk/yr15-16/ english/fc/fc/papers/f15-31e.pdf |
| | | Minutes of meetings | FC215/15-16 https://www.legco.gov.hk/yr15-16/ english/fc/fc/minutes/fc20151127.p df |
| | | | FC216/15-16 https://www.legco.gov.hk/yr15-16/ english/fc/fc/minutes/fc20151127a. pdf |
| 2.12.2015 | | Hon WONG Yuk-man raised a question on monitoring service performance of MTRCL | 1/201512/02/D201512020402 htm |
| 9.12.2015 | | Hon Michael TIEN raised a question on train services | https://www.info.gov.hk/gia/genera 1/201512/09/P201512090545.htm |
| 23.11.2016 | | Hon LUK Chung-hung raised a question on upgrade of signalling systems for railway lines | https://www.info.gov.hk/gia/genera 1/201611/23/P2016112300399.htm |
| 17.1.2017 | to Kanways | MTR Corporation Limited's paper on the power outage incident and other minor incidents involving station facilities occurred at the South Island Line | CB(4)416/16-17(01) https://www.legco.gov.hk/yr16-17/ english/panels/tp/tp_rdp/papers/tp_ rdp20170117cb4-416-1-e.pdf |

| Date of meeting | Committee | Minutes/Paper | LC Paper No. |
|--------------------|--|--|--|
| | | Administration's paper on the power outage incident and other incidents involving station facilities occurred at the South Island Line (East) and the progress update of the construction of the South Island Line (East) (follow-up paper) (Chinese version only) | https://www.legco.gov.hk/yr16-17/ chinese/panels/tp/tp_rdp/papers/tp |
| | | Minutes of meeting | CB(4)864/16-17 https://www.legco.gov.hk/yr16-17/ english/panels/tp/tp_rdp/minutes/rd p20170117.pdf |
| 28.4.2017 | Subcommittee on Matters Relating to Railways | MTR Corporation Limited's paper on the overhead line incident on MTR Kwun Tong Line on 10 April 2017 | CB(4)890/16-17(03) https://www.legco.gov.hk/yr16-17/ english/panels/tp/tp_rdp/papers/tp_ rdp20170428cb4-890-3-e.pdf |
| | | Administration's response to the letter from Hon Tanya CHAN on issues relating to the contingency arrangements for major railway incidents as set out in LC Paper No. CB(4)583/16-17(02) | https://www.legco.gov.hk/yr16-17/ english/panels/tp/tp_rdp/papers/tp_ rdpcb4-847-1-e.pdf |
| | | Administration's response to (a) the letter from Hon LUK Chung-hung on the fire incident at MTR train on 10 February 2017 as set out in LC Paper No. CB(4)556/16-17(01); and (b) the letter from Dr Hon Elizabeth QUAT on issues relating to the contingency | https://www.legco.gov.hk/yr16-17/ english/papels/tp/tp_rdp/papers/tp |

| Date of meeting | Committee | Minutes/Paper | LC Paper No. |
|-----------------|------------|---|--|
| | | incidents as set out in LC Paper No. CB(4)583/16-17(01) | |
| | | Administration's response to the letter from Hon YUNG Hoi-yan on the service disruption of the East Rail Line on 21 February 2017 as set out in LC Paper No. CB(4)618/16-17(01) (Chinese version only) | |
| | | Administration's paper on the service disruption of Kwun Tong Line on 10 April 2017 and progress update on enhancement of MTR station facilities (follow-up paper) (Chinese version only) | https://www.lesse.com/hls/wel6 17/ |
| | | Minutes of meeting | CB(4)119/17-18 https://www.legco.gov.hk/yr16-17/ english/panels/tp/tp_rdp/minutes/rd p20170428.pdf |
| 2.6.2017 | to Kanways | MTR Corporation Limited's paper on the overhead line incident on MTR East Rail Line on 18 May 2017 | CB(4)1099/16-17(01) https://www.legco.gov.hk/yr16-17/ english/panels/tp/tp_rdp/papers/tp_ rdp20170602cb4-1099-1-e.pdf |
| | | Administration's supplementary information on the overhead line incident of MTR East Rail Line on 18 May 2017 (follow-up paper) (Chinese version only) | CB(4)169/17-18(01) https://www.legco.gov.hk/yr16-17/ chinese/panels/tp/tp_rdp/papers/tp_ rdp20170602cb4-169-1-c.pdf |

| Date of meeting | Committee | Minutes/Paper | LC Paper No. |
|--------------------|--|---|---|
| | | Minutes of meeting | CB(4)132/17-18 https://www.legco.gov.hk/yr16-17/ english/panels/tp/tp_rdp/minutes/rd p20170602.pdf |
| 13.7.2017* | | Administration's response to the letters from Hon Nathan LAW Kwun-chung and Hon Tanya CHAN on the railway incident of MTR South Island Line (East) on 21 June 2017 as set out in LC Paper Nos. CB(4)1314/16-17(01) and (02) respectively (Chinese version only) | https://www.legco.gov.hk/yr16-17/ chinese/panels/tp/tp_rdp/papers/tp_ rdpcb4-1408-1-c.pdf |
| 24.8.2017* | Subcommittee on Matters Relating to Railways | Administration's response to (a) the letter from Hon LAU Kwok-fan on recent railway incidents as set out in LC Paper No. CB(4)1520/16-17(01); and (b) the joint letter from Hon Alvin YEUNG, Hon Tanya CHAN and Hon Jeremy TAM Man-ho on recent railway incidents as set out in LC Paper No. CB(4)1520/16-17(02) | https://www.legco.gov.hk/yr16-17/ english/panels/tp/tp_rdp/papers/tp_ rdpcb4-1533-1-e.pdf |
| 1.12.2017 | Subcommittee on Matters Relating to Railways | | 1 + 4 + 2 + 1/2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + |
| | | Minutes of meeting | CB(4)355/18-19 https://www.legco.gov.hk/yr17-18/ english/panels/tp/tp_rdp/minutes/rd p20171201.pdf |

| Date of meeting | Committee | Minutes/Paper | LC Paper No. |
|--------------------|--|--|--|
| 31.1.2018 | Council Meeting | Dr Hon Elizabeth QUAT raised a question on railway service disruption | 1/201001/21/D2010012100(222) |
| 2.2.2018 | Matters Relating to Railways | Administration's response to the joint letter from Dr Hon KWOK Ka-ki, Hon Jeremy TAM Man-ho, Hon Tanya CHAN and Hon Alvin YEUNG and the letter from Hon LAM Cheuk-ting on the signalling fault of the East Rail Line on 11 January 2018 (English version to follow) | https://www.legco.gov.hk/yr17-18/ chinese/panels/tp/tp_rdp/papers/tp_ rdp20180202cb4-554-1-c.pdf |
| 6.2.2018* | Subcommittee on Matters Relating to Railways | Administration's response to the letter from Hon Alvin YEUNG on the alleged arson incident at MTR train on 10 February 2017 | https://www.legco.gov.hk/yr17-18/ english/panels/tp/tp_rdp/papers/tp_ rdpcb4-573-1-e.pdf |
| 10.4.2018 | to Railways | | CB(4)837/17-18(05) https://www.legco.gov.hk/yr17-18/ english/panels/tp/tp_rdp/papers/tp_ rdp20180410cb4-837-5-e.pdf |
| | | Minutes of meeting | CB(4)1459/17-18 https://www.legco.gov.hk/yr17-18/ english/panels/tp/tp_rdp/minutes/rd p20180410.pdf |
| 9.10.2018* | Subcommittee on Matters Relating to Railways | Letter dated 9 October 2018 from the Administration on "Progress of MTR Railway Services" (English version to follow) | CB(4)1612/17-18(01) https://www.legco.gov.hk/yr17-18/ chinese/panels/tp/tp_rdp/papers/tp_ rdpcb4-1612-1-c.pdf |

*Issue date

| Date of meeting | Committee | Minutes/Paper | LC Paper No. |
|--------------------|-----------------|---|--|
| 24.10.2018 | Council Meeting | Hon Gary FAN raised an urgent question on disruptions of railway services | https://www.info.gov.hk/gia/genera 1/201810/24/P2018102400409.htm |
| 29.10.2018 | | Administration paper on service disruption of four MTR lines on 16 October 2018 | CB(4)110/18-19(03) https://www.legco.gov.hk/yr18-19/ english/panels/tp/tp_rdp/papers/tp_ rdp20181029cb4-110-3-e.pdf |
| | | Administration's response to the three motions relating to "Service disruption of four MTR lines on 16 October 2018" passed at the meeting on 7 December 2018 as set out in LC Paper Nos. CB(4)326/18-19(01)-(03) (English version to follow) | $h_{t} = \frac{1}{2} \frac{1}$ |
| 29.3.2019 | to Kanways | Administration's paper on Incident of the new signalling system testing on Tsuen Wan Line on 18 March 2019 | CB(4)687/18-19(03) https://www.legco.gov.hk/yr18-19/ english/panels/tp/tp_rdp/papers/tp_ rdp20190329cb4-687-3-e.pdf |

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