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Panel on Transport

Subcommittee on Matters Relating to Railways
Meeting on 4 July 2014

Background brief on safety management measures for trains of
Guangzhou-Shenzhen-Hong Kong Express Rail Link

Purpose

This paper provides background information on the safety management measures for trains of Guangzhou-Shenzhen-Hong Kong Express Rail Link ("XRL"). It also summarizes the major views and concerns expressed by Members during previous discussions relevant to this subject.

Background

Regulation of railway safety in Hong Kong

2. According to the Administration¹ in March 2014, the Electrical and Mechanical Services Department ("EMSD") is responsible for the monitoring of the railway safety to ensure that the MTR Corporation Limited ("MTRCL") will fully consider the safety requirements in its system design, operation and maintenance of railway networks and adopt appropriate precautionary measures to ensure railway safety.

3. The regulation of railway safety in Hong Kong is based on relevant international standards, including EN15227 (the European Union standard on crashworthiness for trains) or equivalent safety standards, and other related safety standards on trains. MTRCL shall submit relevant information to EMSD to prove that when the train is operating in actual

¹ Source: The Administration's press release on "EMSD's requirements for train safety in Hong Kong" issued on 4 March 2014

conditions, its safety performance can achieve the safety level of international standards.

XRL trains

4. According to the information provided by the Administration², the trains of the Hong Kong section ("HKS") of XRL are manufactured by CSR Qingdao Sifang Co., Ltd. MTRCL has been supervising closely the design and manufacturing process of the trains and signalling system; and has introduced monitoring measures and independent expert assessments throughout the various processes so as to ensure compliance with international safety standards and Mainland railway safety requirements.

5. Prior to the opening of HKS of the XRL, new trains will have to pass multiple testing, including factory acceptance test, system integration test and on-site test, to ensure that the trains have achieved the required safety level in accordance with international standards. EMSD will assess the test reports submitted by MTRCL and take part in the on-site test in Hong Kong before approving the operation of the new trains.

6. As at April 2014, the first XRL train has been assembled and is undergoing testing in the Mainland. The main-frame assembly of the second and third XRL trains commenced in the fourth quarter of 2013 and is in progress.

Major concerns raised by the Legislative Council Members

7. Members have expressed views on train safety at the Council meetings and the Subcommittee on Matters Relating to Railways ("the Subcommittee") meetings in the Fourth and Fifth Legislative Councils. Their major concerns on this subject are summarized in the ensuing paragraphs.

Train design and systems

8. At the meeting on 13 January 2012, some Subcommittee members expressed concern about the media reports on the uneven leveling of train floor of the new trains and the need to operate the emergency stop manually by the MTR train captains of the new trains. The Subcommittee expressed concern about the safety of the new trains and asked why such technical problems had not been detected during the testing stages.

² Source: The Administration's press release on "LCQ4: Railway safety" issued on 9 April 2014

Besides, the Subcommittee also urged MTRCL to ensure good integration of the various systems and facilities of the new trains, which were purchased from suppliers of different countries such as France, Germany and Japan.

9. A Subcommittee member at the meeting on 22 November 2013 showed concern about the differences of high speed rail train between HKS and the Mainland section in terms of functions and operational safety; and compatibility of the signalling systems between HKS and the Mainland section. The Chairman further cited the Wenzhou incident in China and expressed his concern over the control of the quality of the signalling systems in HKS and the Mainland section of XRL. In response, the Administration assured members that they would make reference to the Wenzhou incident and request MTRCL to meet and maintain high standard of operation of HKS of XRL, including its signalling system; train design; and track work design.

Materials contained in trains

10. In early 2014, several Members were worried about train safety as it was reported that some of the newly procured MTR trains might contain materials harmful to the human body. In this connection, two Members jointly wrote a letter³ to the Subcommittee on 4 March 2014 and another Member raised a Council question on 9 April 2014 to express their concern on train safety.

11. In response, the Administration² explained that regarding the news reports on possible asbestos content on MTR trains, it was specifically stated in MTRCL's procurement contracts that no material containing asbestos could be used in the manufacture of trains. To ease public concerns, MTRCL had followed the Environmental Protection Department's guidelines on asbestos testing and arranged a Hong Kong laboratory to conduct tests on 22 trains newly purchased from the Changchun Railway Vehicles Co., Ltd. and 10 trains to be operated along the future South Island Line (East). The test results confirmed that the trains were asbestos-free. MTRCL would continue to ensure compliance of the contractual requirement of no asbestos content on trains. The factory-based MTR personnel would also from time to time remind the manufacturers to adhere strictly to such requirement.

³ Source: Letter dated 4 March 2014 from Dr Hon Kenneth CHAN Ka-lok and Dr Hon KWOK Ka-ki on safety of MTR train cars manufactured in Mainland China [LC Paper No. CB(1)1130/13-14(01)]

Safety standard

12. In March 2014, a Subcommittee member expressed concern on the safety standard of XRL trains in writing⁴. It was reported that XRL trains might not comply with relevant international standards, such as EN15227, mentioned in paragraph 3 above. In response, the Administration and MTRCL⁵ in April 2014 advised that the structural integrity of XRL train was designed to meet the European EN12663 standard to ensure the structural strength of the train body and its resilience. It should comply with both the Mainland and international standards ensuring the operational safety of trains. In addition, the signalling system of HKS of XRL was designed in accordance with fail-safe principle under which the train would be automatically stopped if there was fault in railway equipment or system so as to ensure safety.

Recent developments

13. According to some press reports on 24 June 2014, XRL trains might not comply with the highest European Union standard on crashworthiness for trains. As such, the Administration is invited to brief members on safety management measures for trains of XRL at the Subcommittee meeting to be held on 4 July 2014.

Relevant papers

14. A list of relevant papers is in **Appendix**.

Council Business Division 1
Legislative Council Secretariat
2 July 2014

⁴ Source: Letter dated 3 March 2014 from Hon Gary FAN Kwok-wai on safety of the high speed train for HKS of XRL project [LC Paper No. CB(1)1129/13-14(01)]

⁵ Source: The Administration's response to the letter from Hon Gary FAN Kwok-wai on safety of the high speed train for HKS of XRL project [LC Paper No. CB(1)1281/13-14(01)]

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**List of relevant papers on safety management measures for trains of
Guangzhou-Shenzhen-Hong Kong Express Rail Link**

Date of meeting	Committee	Minutes/Paper	LC Paper No.
13.1.2012	Subcommittee on Matters Relating to Railways	MTR Corporation Limited's paper on "New trains for MTRCL"	LC Paper No. CB(1)785/11-12(05) http://www.legco.gov.hk/y r11-12/english/panels/tp/tp_rdp/papers/tp_rdp0113cb1-785-5-e.pdf
		Minutes	LC Paper No. CB(1)2461/11-12 http://www.legco.gov.hk/y r11-12/english/panels/tp/tp_rdp/minutes/rdp20120113.pdf
24.5.2013	Subcommittee on Matters Relating to Railways	Administration's paper on "Progress and Financial Situation of Construction of Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link"	LC Paper No. CB(1)1072/12-13(03) http://www.legco.gov.hk/y r12-13/english/panels/tp/tp_rdp/papers/tp_rdp0524cb1-1072-3-e.pdf
		Administration's paper on "Sixth half-yearly report on the construction of the Hong Kong section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link project (for the period between 1 July 2012 and 31 December 2012)"	LC Paper No. CB(1)1108/12-13(01) http://www.legco.gov.hk/y r12-13/english/panels/tp/tp_rdp/papers/tp_rdp0524cb1-1108-1-e.pdf

Date of meeting	Committee	Minutes/Paper	LC Paper No.
		Minutes	LC Paper No. CB(1)1870/12-13 http://www.legco.gov.hk/yr12-13/english/panels/tp/tp_rdp/minutes/rdp20130524.pdf
22.11.2013	Subcommittee on Matters Relating to Railways	Administration's paper on "Seventh half-yearly report on the construction of the Hong Kong section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link project (for the period between 1 January and 30 June 2013)"	LC Paper No. CB(1)81/13-14(01) http://www.legco.gov.hk/yr13-14/english/panels/tp/tp_rdp/papers/tp_rdp112cb1-81-1-e.pdf
		Administration's supplementary information on the progress and financial situation of the construction of the Hong Kong Section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link (follow-up paper)	LC Paper No. CB(1)782/13-14(01) http://www.legco.gov.hk/yr13-14/english/panels/tp/tp_rdp/papers/tp_rdp1112cb1-782-1-e.pdf
		Minutes	LC Paper No. CB(1)1010/13-14 http://www.legco.gov.hk/yr13-14/english/panels/tp/tp_rdp/minutes/rdp20131122.pdf

Date of meeting	Committee	Minutes/Paper	LC Paper No.
5.5.2014	Subcommittee on Matters Relating to Railways	Administration's response to the letter from Dr Hon Kenneth CHAN Ka-lok and Dr Hon KWOK Ka-ki on safety of MTR train cars manufactured in Mainland China as set out in LC Paper No. CB(1)1130/13-14(01)	LC Paper No. CB(1)1245/13-14(01) http://www.legco.gov.hk/yr13-14/chinese/panels/tp/tp_rdp/papers/tp_rdpceb1-1245-1-c.pdf
		Administration's response to the letter from Hon Gary FAN Kwok-wai on safety of the high speed train for the Hong Kong Section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link project as set out in LC Paper No. CB(1)1129/13-14(01)	LC Paper No. CB(1)1281/13-14(01) http://www.legco.gov.hk/yr13-14/english/panels/tp/tp_rdp/papers/tp_rdpceb1-1281-1-e.pdf
9.4.2014	Council meeting	Hon Albert Ho Chun-yan raised a question on railway safety	http://www.info.gov.hk/gi/general/201404/09/P201404090399.htm