

立法會

Legislative Council

LC Paper No. CB(1)462/02-03

(These minutes have been seen
by the Administration)

Ref : CB1/PL/TP/1

Panel on Transport

**Minutes of special meeting held on
Thursday, 17 October 2002, at 4:30 pm
in the Chamber of the Legislative Council Building**

Members present : Hon Miriam LAU Kin-yee, JP (Chairman)
Hon Abraham SHEK Lai-him, JP (Deputy Chairman)
Ir Dr Hon Raymond HO Chung-tai, JP
Hon CHAN Kwok-keung
Hon LAU Kong-wah
Hon Andrew CHENG Kar-foo
Hon TAM Yiu-chung, GBS, JP
Hon Tommy CHEUNG Yu-yan, JP
Hon Albert CHAN Wai-yip
Hon LEUNG Fu-wah, MH, JP

Non-Panel Member : Hon Fred LI Wah-ming, JP
attending

Members absent : Dr Hon David CHU Yu-lin, JP
Hon Albert HO Chun-yan
Hon Mrs Selina CHOW LIANG Shuk-ye, GBS, JP
Hon Andrew WONG Wang-fat, JP
Hon LAU Chin-shek, JP
Dr Hon TANG Siu-tong, JP
Hon WONG Sing-chi
Hon LAU Ping-cheung

Public Officers attending : Environment, Transport and Works Bureau

Mrs Rita LAU
Permanent Secretary for the Environment,
Transport and Works (Environment)

Mr Arthur HO
Deputy Secretary for the Environment,
Transport and Works (Transport and Works)

Mr K M WOO
Chief Inspecting Officer (Railways),
Hong Kong Railway Inspectorate

Transport Department

Ms Carolina YIP
Assistant Commissioner for Transport/Bus and Railway

Attendance by invitation : MTR Corporation Limited

Mr Jack C K SO
Chairman & Chief Executive

Mr Phil GAFFNEY
Operations Director

Mr Eric HUI
Head of Operations

Mrs Miranda LEUNG
Corporate Relations Manager

Clerk in attendance : Mr Andy LAU
Chief Assistant Secretary (1)2

Staff in attendance : Ms Alice AU
Senior Assistant Secretary (1)5

Mr Joey LO
Assistant Secretary(1)1

Action

I Review of MTR service

- | | |
|------------------------------------|---|
| (LC Paper No. CB(1)54/02-03(01) - | Information paper on "Review of Mass Transit Railway service and incidents" provided by the Administration; |
| LC Paper No. CB(1)54/02-03(02) - | Final report of the investigation into the incident that occurred on 5 September 2002 at North Point Station of the Tseung Kwan O Line provided by MTR Corporation Limited; |
| LC Paper No. CB(1)2617/01-02(01) - | Supplementary information on "Review of MTR service" provided by MTR Corporation Limited; |
| LC Paper No. CB(1)2495/01-02(02) - | Letter dated 6 September 2002 from Hon CHENG Kar-foo; and |
| LC Paper No. CB(1)2495/01-02(03) - | Information paper on "Review of MTR train service incidents" provided by MTR Corporation Limited) |

The Chairman remarked that subsequent to the meeting on 10 September 2002, the MTR Corporation Limited (MTRCL) had provided further information on its investigation into the incident that occurred on 5 September 2002 at North Point Station of the Tseung Kwan O Line (TKL) and various issues raised by members at the meeting on 10 September 2002. The papers were circulated to members vide LC Paper Nos. CB(1)54/02-03(02) and CB(1)2617/01-02(01). The Administration also provided a paper vide LC Paper No. CB(1)54/02-03(01) setting out the findings of its review on the service performance of the Mass Transit Railway (MTR) system in the light of recent MTR incidents.

2. The Chairman drew members' attention to the list of questions raised by Mr CHENG Kar-foo which was tabled at the meeting. The Administration and MTRCL were requested to provide a written response to the questions raised by Mr CHENG after the meeting.

MTRCL/
Admin

(Post-meeting note: The list of questions was subsequently issued to members vide LC Paper No. CB(1)87/02-03.)

Action

Statement made by the Chairman of MTRCL

3. The Chairman of MTRCL relayed his apology to members for not being able to attend the last meeting held on 10 September 2002 due to prior engagement. He then briefed members on the findings of the investigation into the spate of incidents involving MTR train services. He said that the causes of the recent railway incidents varied and did not have a common cause, but were mostly associated with the opening of TKL. In general, passenger safety had not been compromised and the safety system performed as designed. As with the opening of any new railway lines anywhere in the world, during the initial phase of operation, some teething problems were encountered resulting in service disruption. The situation had now been improved. The number of delays of up to five minutes had been reduced from the average of two incidents a day in August to one incident every two days over the past two weeks. Service reliability of TKL was already 99.4%. He assured members that MTRCL would not rest on its laurels and would strive for continuous improvement in train service.

4. Recognizing that it would take some time for passengers to adapt to the design of the new sliding plug train doors, the Chairman of MTRCL remarked that the new design had been put in use for the Tung Chung Line and the Airport Express Line. Other metro systems in America and Europe, including the new metro line in Paris also adopted such a design as it provided a quieter and, in turn, more comfortable train environment.

5. The Chairman of MTRCL said that MTRCL had put in place a comprehensive Quality Management System for maintenance management. It made regular financial provision for asset renewal, modification and upgrading. Life cycle analysis was used to plan maintenance and assets renewal requirements. Preventive maintenance of trains was also carried out according to an established and structured programme. The safety management system was reviewed by a panel of independent international experts every three years. He emphasized that MTRCL had in place a comprehensive programme of maintenance and repair. The Corporation attached paramount importance to safety, maintenance and repair under all circumstances and achieved world-class levels of safety and reliability. He assured members that MTRCL would continue to make every effort to ensure that all established standards would be met, regardless of whether such work was done by the Corporation itself or by its contractors.

Presentation by the Operations Director of MTRCL

6. At the invitation of the Chairman, the Operations Director/MTRCL (OD/MTRCL) briefed members on the findings of the Corporation's investigation into the incident that occurred on 5 September 2002 at North Point Station of the TKL. He reported that on 5 September 2002, a modernized train became immobilized at 8:38 am whilst entering the North Point platform en route from Tseung Kwan O (TKO). There was a false "train divided indication" alarm which had activated a safety device and prevented the train from making any movement. The failure was caused by the conduit

Action

to the switchbox being damaged and the exposed wires short-circuiting. Arrangements were made for the train behind to push out the failed train and in light of the potential delay to service, a "Red Alert" was issued by the Control Centre at 8:52 am. He emphasized that the correct incident handling procedures were followed by every staff member involved. Nonetheless, the Corporation had made improvements to its procedures for information dissemination to passengers in the aftermath of the incident.

7. OD/MTRCL advised that the 13 new Korean trains had undergone a comprehensive testing programme and had completed 10 000 km of test runs before entering service. Specific tests were attended by Hong Kong Railway Inspectorate (HKRI). He also drew members' attention to the Corporation's three-fold maintenance programme encompassing preventive maintenance, condition-based maintenance and reliability-centred maintenance, which was underpinned by an ISO 9001 Quality Management Programme. This approach to maintenance and asset management had been recognized by the international metro railway benchmarking group "COMET" as best practice.

8. On concerns about compromised standards due to outsourcing, OD/MTRCL explained that the maintenance of MTR's critical systems, for example, escalators and fire systems had been outsourced since MTR commenced operations in 1979. He emphasized that the contractor responsible for the maintenance of trains at TKO depot had extensive experience in train maintenance and depot management in Australia. He echoed the Chairman of MTRCL's view that whether maintenance was carried out by MTRCL staff or by contractors made no difference to the standard of maintenance and inspections required. He maintained that when maintenance was outsourced, MTR retained the necessary inspection and performance-checking staff to ensure that standards were met and the responsibility for overhaul and technical investigation of problems remained with MTRCL. OD/MTRCL explained that the decision to outsource was based on the contractors' ability to provide the necessary skills, expertise and resources at costs levels below those of MTR. He remarked that the involvement of contractors in maintenance formed a virtuous cycle in that the contractors could feed back maintenance and performance issues into the design of new trains leading to improved reliability.

Maintenance

9. Referring to Appendix B of the Administration's paper (LC Paper No. CB(1)54/02-03(01)), Mr Fred LI pointed out that there was a marked increase in the number of incidents with delays of 5 to 9 minutes involving train-borne signalling systems from 22 incidents in 1999 to 70 incidents in 2001 and 117 incidents in 2002 (up to August). He was worried that the repeated and rising failure of the signalling system might have caused by the ageing of the trains and poor maintenance of the MTR rather than the commissioning of the TKL as it only commenced operation in August 2002.

Action

10. The Chairman of MTRCL said that notwithstanding the commissioning of the TKL in August 2002, new signalling system was required in other projects which gave rise to the problem of signalling failures. He said that as part of the TKL, a new interchange was provided at North Point in September 2001 for MTR passengers travelling between the Kwun Tong Line and stations from North Point to Sheung Wan on the Island Line. To cater for the new service, a new signalling system was required between North Point Station and Quarry Bay Station. Some teething problems were observed upon introducing of the new signalling system and fine-tuning work was required accordingly. This explained why the number of incidents in 2001 had increased. Likewise, the introduction of the new Korean trains in April 2002 with new train-borne equipment had caused a number of signalling problems. The Corporation had already taken measures to fine-tune the train-borne equipment with the trackside equipment. He stressed that the service disruptions were mostly related to the teething problems of the new signalling system. Train maintenance was implemented regularly with high standard by both MTR staff and contractors.

11. OD/MTRCL added that in September 2001, a new trackside signalling system was installed between North Point Station and Quarry Bay Station. The difficulties encountered in fine-tuning the new trackside signalling system with the old train-borne signalling system had led to higher number of service disruptions in 2001. In 2002, as new trains were gradually introduced, there were also problems associated with the interfacing between the new train-borne signalling system and the trackside signalling system which required a lot of fine-tuning. Based on their previous experience, fine-tuning to this kind of signalling problem would take 18 to 24 months to complete.

Outsourcing

12. Noting that the maintenance work at TKO depot was carried out by the contractor who modernized the trains, Mr CHENG Kar-foo was concerned about the outsourcing of maintenance activities on MTR, which might have affected the service performance of MTR leading to an upsurge of railway incidents. He pointed out that the ratio of the number of maintenance staff to the number of trains at TKO depot was approximately 1.4 persons per train which was much lower than that of Tsuen Wan depot and other depots (about 2 persons per train). Moreover, the working hours of contractor staff based at TKO depot and MTRCL staff based at other depots were different. The former were required to work for 54 hours per week whereas the latter 42 hours only. Mr CHENG was worried that MTRCL had compromised service reliability by outsourcing the maintenance work at TKO depot. He also queried the cost-effectiveness of outsourcing the maintenance work as the savings achieved was merely \$60,000 per train per year. He urged MTRCL to reconsider the need for outsourcing the maintenance work at TKO depot.

13. In response, the Chairman of MTRCL explained that as TKL was a new line, there was no such question of lack of maintenance and repair. In his view, there was no

Action

major problem with the present outsourcing arrangement, having regard to the marked decline in the number of incidents in recent weeks. He assured members that the same set of stringent standards would be applied regardless of whether the maintenance work was done by MTRCL staff or by the contractors. The Corporation would closely monitor the situation and take necessary improvement measures. As to the number of maintenance staff deployed and the number of man-hours put in by the contractors to achieve these standards, the Chairman of MTRCL remarked that such deployments were the contractors' own business decisions.

14. OD/MTRCL supplemented that the trains maintained at TKO depot were not new ones, but the same ones that had been in use in urban lines for years. There was no evidence to suggest that the failure rate of such trains was higher than those maintained at other depots. In fact, the recent incidents were almost exclusively due to problems with the signalling systems, but not problems with the trains. OD/MTRCL reiterated that the recent incidents had nothing to do with the outsourcing of maintenance work at TKO depot.

15. Mr LEUNG Fu-wah referred members to Annex III of the paper provided by MTRCL (LC Paper No. CB(1)2617/01-02(01)) and remarked that savings from outsourcing train maintenance at TKO depot amounted to only \$0.9 million per year. He enquired if such savings were sufficient to recover the cost involved in supervising the works of the contractors concerned. He was concerned that the maintenance staff employed by the contractors were required to work for long hours, thereby affecting the quality and safety standard of MTR.

16. The Chairman of MTRCL advised that the management should do everything possible in respect of cost control. He advised that the savings were sufficient to recover the cost of supervision. He did not agree that the working hours by the maintenance staff concerned was too long. He clarified that MTRCL's supervision of the contractors was focused on the contractors' compliance with established procedures and on the end result, not the means by which the end was achieved, which was the business decision of the contractors.

Testing and commissioning of MTR trains

17. Mr LAU Kong-wah expressed grave concern about the possible safety risks associated with the damage of train-borne components. He also considered it not acceptable for the repeated occurrence of railway incidents upon the commissioning of TKL. He was worried that MTRCL might have overlooked the seriousness of the incidents and had not taken appropriate measures to address the problem. He pointed out that notwithstanding a longer trial running periods of eight weeks for TKL as compared to about two weeks for Tsuen Wan Line and Island Line phases I and II, the number of incidents on TKL upon commissioning was greater than that of the other lines. He

Action

enquired whether the problems of the new Korean trains were the results of negligence on the part of the personnel responsible for the trial runs.

18. On the duration of the trial running periods, OD/MTRCL explained that the MTR system on the Island Line was relatively simple back in 1985, with only one type of signalling system and one type of train. In the present case, there were two signalling systems and two types of trains in operation. There was a matrix of four variables to be tested. The need for system flexibility and inter-operability between TKL and Kwun Tong Line had necessitated a longer trial running period. Before entering service, the new train underwent a six-month testing and trial running at Kowloon Bay Depot and on Kwun Tong Line without passenger to prove compatibility with the existing railway systems. This would then be followed by a period of trial running to test the compatibility of the trains with the existing systems. He stressed that the railway incidents were mostly associated with the fine-tuning of the signalling system and were not in any way associated with the performance of the Korean trains.

19. The Chairman of MTRCL added that the need for more frequent headways (105 seconds/headway) had also increased the level of complexity of the system, hence the need for a longer trial running period. It was accepted internationally that with modern complex train control systems, a period of fine-tuning was required in service in order to cover the full range of the dynamic characteristics of the train and trackside systems. He however pointed out that no incident had posed safety risk to passengers. All trains movements were protected by the Automatic Train Protection system.

20. The Chairman requested MTRCL to provide comparative information on the number of incidents which happened during the initial commissioning of the Tsuen Wan Line Extension and TKL.

MTRCL

21. Referring to paragraphs 11 and 13 of LC Paper No. CB(1)54/02-03(01), Mr Tommy CHEUNG enquired if the deployment of an additional staff member on board Korean trains and the need for upgrading of the train-borne software were signs of deficiencies of the design or manufacture of the Korean trains. If so, he asked if MTRCL would claim any compensation from the manufacturer. He also asked about the estimated time for completing the software upgrading.

22. In response, OD/MTRCL did not agree that the deployment of the additional staff member on board was indicative of any problem with the train. He reiterated that it was the signalling software on board the Korean trains which needed to be slightly modified. He maintained that MTRCL was satisfied with the performance of the Korean trains.

23. Referring to MTRCL's moves of deploying an additional staff on board of Korean trains as well as minimizing the number of Korean trains put into passenger service until a higher reliability of the system was achieved, Mr LAU Kong-wah was of

Action

the view that the repeated occurrence of railway incidents might have been caused by the commissioning of the new Korean trains.

24. In reply, the Chief Inspecting Officer (Railways)/Hong Kong Railway Inspectorate advised that it was the signalling equipment on the Korean trains rather than the trains which had problems. The majority of the problems lied in the inter-operability of the new signalling equipment with that on the existing Kwun Tong line which was from a different supplier with different hardware and software.

25. Mr LAU Kong-wah was still unconvinced that the incidents had nothing to do with the commissioning of the new Korean trains. In reply, OD/MTRCL stressed that the signalling system and the new trains should be viewed separately. The majority of the delays involving the new Korean trains were due to train-borne signalling defects, rather than failure of the Korean trains. Most improvements had been made through software upgrading.

26. The Chairman asked if teething problems associated with the introduction of new signalling system was a universal one.

27. In reply, OD/MTRCL said that the issue of increased operational difficulties with modern signalling systems was indeed a major topic of discussion at the international Metro Railway Conference held in 2001.

28. Mr LEUNG Fu-wah enquired whether the repeated occurrence of railway incidents in recent months was due to inadequate testing prior to commissioning of TKL.

29. In response, OD/MTRCL confirmed that similar to the case of Airport Railway, prior to trial running, the new train underwent a six-month testing and trial running at Kowloon Bay Depot and on Kwun Tong Line without passenger. He clarified that as the Kwun Tong line remained in operation throughout the test run period, it was not until MTRCL actually introduced the Korean trains on the Kwun Tong Line that the problems could be detected.

30. Mr CHENG Kar-foo expressed doubts on the performance of the signalling system, which according to his understanding, was manufactured by Siemens.

31. In reply, OD/MTRCL informed members that the signalling system was developed by the Siemens Transportation System (STS) which had extensive experience and expert knowledge in the field. The Chairman of MTRCL supplemented that STS was one of the few companies in the world capable of providing such a system.

Action

Door control circuit

32. Ir Dr Raymond HO was concerned about the reliability of the door control circuit of the new Korean trains. He enquired about the causes of the failure.

MTRCL 33. In reply, OD/MTRCL explained that there were only several train delays caused by the failure of doors. The failures were mainly due to the interfacing problems between the train-borne computer system and the electro-mechanical parts, resulting in doors failing to close or not being detected to be fully closed when the trains were at stations. MTRCL had identified with the train supplier that some components in the train door control circuit had to be changed and the software had to be upgraded. He confirmed that the failure had nothing to do with the wiring/hardware of the trains. He would provide further information on the actual number of train delay incidents caused by failure of doors after the meeting.

34. Mr CHENG Kar-foo said that he had paid a visit to Rotem, the manufacturer of the new trains, in Korea. He was informed by the Rotem executives that six to eight weeks would be required for fine-tuning the new train-borne software to make it compatible with the existing signalling system. As TKL had already commenced operation for two months, he was concerned that the fine-tuning process was still outstanding. He was also doubtful whether the design of the new train doors were suitable for use in Hong Kong as Rotem had advised that the design was not suitable for use in congested train compartments. He suggested that consideration should be given to using the old train doors. He also enquired about the expected completion date of the replacement and software upgrading work in relation to the train door control circuit.

MTRCL 35. In reply, the Chairman of MTRCL said that Rotem executives had denied making such remarks in an email to MTRCL. He agreed that a copy of the email be provided for members' reference. He inferred that the misunderstanding might have been caused by language barrier. He advised that the door design was also used in trains on Tung Chung Line as well as other major cities of the world. And he saw no reasons for switching back to the old ones when the new ones could provide added comfort and tranquility to passengers. He would provide further information on other metro systems in the world which made use of the new door design for the new Korean trains. On the progress of the fine-tuning work, he emphasized that the teething problems associated with the commissioning of the TKL had largely been reduced but the fine-tuning work would continue because it was an on-going process which was a manifestation of the Corporation's spirit of continuous improvement. He emphasized that the introduction of any new projects such as the automatic turnaround operation and the opening of new lines would inevitably require much fine-tuning of the signalling system.

MTRCL

36. Mr CHENG Kar-foo remarked that the Rotem executives had told him the above in English rather than in Korean. He felt dissatisfied that MTRCL was reluctant to give an expected completion date of the software upgrading work. He sought information on the role played by Rotem in the maintenance system.

Action

37. In reply, OD/MTRCL said that Rotem, like any other TKL suppliers, was required by contract to provide defect liability for 12 months after the handover of the system. Rotem had deployed staff members to the Kowloon Bay Depot to provide technical support to MTR staff and to follow through defects. On the timing of completion of the fine-tuning work, OD/MTRCL said it would take another six to eight weeks.

38. Mr Abraham SHEK opined that the delays caused by the failure of doors was a reflection of the effectiveness of the fail-safe mechanism in protecting the safety of the railway system and passengers. Whilst the safety management system would be reviewed by an independent safety expert every three years, Mr SHEK was concerned about the mechanism for appointment and means to enhance transparency in the selection process. To enhance the credibility of the review, the Administration could consider commissioning HKRI to carry out the safety review.

39. In reply, the Permanent Secretary for the Environment, Transport and Works (Environment) (PS for ETW(E)) remarked that in accordance with the Operating Agreement (OA) signed between the Government and MTRCL, MTRCL was required to meet the stringent service performance and safety requirements stipulated in the OA. MTRCL's maintenance management system was subject to review by an independent external expert every three years and the Quality Management System was subject to audit by an external auditor annually. These reviews were aimed at, in addition to the audits and reviews done by the Administration, further ensuring that maintenance would always be properly managed by MTRCL. She remarked that the experts/auditors were invited through an open process.

40. The Chairman enquired about the reliability of the failsafe design and whether the failure of such device would jeopardize the safety of passengers.

41. OD/MTRCL advised that with the failsafe design, all train movements would be suspended immediately if component or system failures were detected.

42. Referring to the table showing the number of railway incidents from 1999 to August 2002 with delays of 5 minutes or more as set out in Annex B to LC Paper No. CB(1)54/02-03(01), Mr CHENG Kar-foo requested the Administration to provide a breakdown by different MTR lines. He also requested MTRCL to provide a work schedule of Siemens' rectification programme for the new signaling system to members for information after the meeting.

Admin
MTRCL

The Administration's review of MTR train service incidents

43. Mr LAU Kong-wah enquired if the Administration was satisfied with MTRCL's overall performance in light of the recent railway incidents. He also asked if any new

Action

requirements would be imposed for MTRCL to report as soon as possible any major incidents in future. He called on the Administration and MTRCL to introduce measures to improve the information dissemination mechanism in case of possible service disruption.

44. PS for ETW(E) advised that MTRCL had given full cooperation to the Administration in its investigation and was able to identify the causes of every incident and take the necessary remedial actions. She remarked that the recent incidents were a result of problems associated with the signalling system, and that no systemic fault was identified. She added that the Corporation had put in place a comprehensive monitoring system to prevent service failures. The MTR system was in general performing at high safety and service standards with adequate maintenance. On information dissemination, the Administration's view was that there were scopes to strengthen and streamline the communication flow for speedy and better coordinated messages.

II Any other business

45. There being no other business, the meeting ended at 6:40 pm.

Council Business Division 1
Legislative Council Secretariat
17 December 2002