LCQ12: Railway safety
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Following is a question by the Hon Wong Kwok-hing and a written reply by the Secretary for Transport and Housing, Ms Eva Cheng, at the Legislative Council meeting today (March 9):

Question:

It has been reported recently that among the 12 MTR rail breakage incidents since 2008, eight of them had not been disclosed to the public. On January 19 and February 10 this year, cracks were identified respectively at a section of the track at Sunny Bay Station and at a section of the track between Admiralty Station and Tsim Sha Tsui Station. Some experts have commented that these incidents were unusual and urged the MTR Corporation Limited ("MTRCL") to thoroughly inspect the quality of rail tracks. In this connection, will the Government inform this Council:

(a) given that serious incidents are involved when a "Red Alert" is issued by MTRCL under the current notification mechanism, how the authorities and MTRCL define serious incidents, and of the criteria adopted;

(b) since MTRCL has used the words "裂紋" and "裂縫" as the Chinese renditions of "cracks", how the authorities and MTRCL define these words;

(c) whether it knows the total length of all rail tracks (including the Light Rail) in Hong Kong in the past decade and the changes in the number of staff members responsible for railway maintenance; whether MTRCL will increase the number of maintenance staff to cope with future demand; if it will, of the details; of the ratio between the total length of rail tracks (including the Light Rail) and the number of maintenance staff;

(d) whether it knows the MTR extensions in respect of which the maintenance work has been outsourced at present; of the number of contracts involved, the relevant contract sums and the number of staff of outsourced services involved;

(e) whether it knows the criteria adopted by MTRCL in determining the use of outsourced services; whether MTRCL can terminate the existing outsourced services gradually and take over the management and maintenance work (such as

telecommunications equipment, equipment for power supply switching and infrastructure equipment, etc.); if it cannot, of the reasons for that; and

(f) of the number of civil servants who are dedicated to monitoring the operation and maintenance of MTR at present, and whether the authorities will expand the existing scale and organisational structure in this respect in order to cope with increasingly heavy workload relating to railway matters; if the authorities will, of the details; if not, the reasons for that?

Reply:

President,

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

(a) At present, the MTR Corporation Limited (MTRCL) will notify the public of serious railway incidents. Regarding incidents causing serious service disruptions or emergencies (including those requiring the issuance of "Red Alert") whereby the Transport Department must be notified, MTRCL will also notify the public if such notification will be of assistance to passengers likely to be affected in planning their journeys. In addition, MTRCL will notify the public should there be incidents involving safety, such as those related to train operation and are of public concern and those which have resulted in or could potentially result in injuries or deaths.

(b) Generally speaking, "breakage" (i.e. "裂縫") refers to the gap formed as a result of the breakage through the whole cross-section of a rail while "crack"(i.e. "裂紋") refers to the situation where a crack has appeared on a rail surface. According to MTRCL, in respect of the usage of "cracks"/"breakages" (i.e. "裂紋"/"裂縫" in Chinese), the corporation has been using the English term "crack" to describe the phenomenon, and it used the Chinese term "裂紋" but not "裂縫" in describing the recent rail breakage incidents in public. MTRCL has since noted comments that the use of the term "裂紋" could have caused misunderstanding among the public. In the interest of clearer communication, MTRCL has now adopted the term "裂縫" to describe rail breakages from top to bottom and the term "裂紋" to describe cracks detected without breakage in the rail.

MTRCL has clarified its use of the terms and has apologised for any misunderstanding caused. The Government has asked MTRCL to state clearly when

making announcements about similar incidents in future whether they involve "cracks" (i.e. "裂紋") or "breakages" (i.e. "裂縫").

(c) According to MTRCL, railway maintenance involves many aspects including rolling stock, tracks, overhead lines, signalling systems, station facilities etc. Generally speaking, with an extension of a railway line in length, there will be a need to increase the number of maintenance staff. Nevertheless, the actual increase in the number of staff depends on various factors including the nature of the maintenance work and operational needs etc. For example, after a railway line is extended, as the same signalling system is used, the increase in the number of maintenance staff for signalling system will be relatively small. Similarly, after a railway line is extended, train service can be enhanced through adjusting the train service timetable and there is no immediate need to increase the train fleet size. Under such circumstances, the number of rolling stock maintenance staff may not need to be increased.

In addition, with the advancement of technology, the reliability of railway operations has been enhanced, leading to reduction of railway maintenance procedures which require manual operation. For example, in the past, the inspection of train wheels used to be conducted manually. Today, it is conducted through laser monitoring technology, which has enhanced the effectiveness and efficiency of inspections. As a result, staff members are given more training opportunities to upgrade their skills.

Over the past decade, the rail network in Hong Kong has seen continuous expansion. The total rail length of the running lines (note 1) has increased from about 650 km (including Light Rail) in 2001 to about 980 km (including Light Rail) today. With the commissioning of new railway lines and extensions, MTRCL has increased the number of railway maintenance staff based on operational needs, i.e. from 3,426 in 2001 to 3,828 in 2010. In accordance with development of new railway lines, MTRCL will continue to increase the number of maintenance staff based on operational needs. However, as stated above, the actual increase in number of maintenance staff is not determined by the extent of the extension of railway lines.

(d) The outsourced maintenance work of MTRCL's train operations includes:
- passenger information display equipment;
- closed circuit television equipment;
- station lifts and escalators;
- platform screen doors and automatic platform gates;

- fire services equipment;
- telecommunications equipment;
- gondola and gantries;
- building services equipment;
- waste water treatment, plumbing and drainage;
- backup power supply equipment;
- general station lighting;
- baggage handling equipment for the Airport Express;
- centralised control equipment for power supply switching for the West Rail Line and East Rail Line;
- infrastructure equipment (tracks (note 2), signalling, power distribution and overhead line) of the Tseung Kwan O Line and trains which were originally operated on the Tseung Kwan O Line and deployed to the Kwun Tong Line since mid-2010; and
- automatic fare collection equipment of the West Rail Line, Tseung Kwan O Line, Tung Chung Line, Disneyland Resort Line, Airport Express and Light Rail.

The contracts for the outsourced maintenance works above amounted to about HK$380 million in 2010. A total of 65 contracts are involved. According to MTRCL, the requirements and standards of the service are stipulated in the outsourcing contracts. MTR engineers are responsible for monitoring and supervising work quality to ensure they comply with the standards. In addition, contractor staff working on MTR trains and operations equipment are required to possess the proper qualifications. They must be certified to ensure that they are equipped with the skills and competencies similar to MTR staff doing the same jobs, and these requirements are specified in the contracts.

MTRCL follows up the training of contractor staff through working meetings. While the contractors are responsible for training their staff on work-related skills and safety, MTRCL also helps brief contractor staff on MTRCL's operation and safety procedures.

(e) According to MTRCL, outsourcing of maintenance works is common among railway operations internationally. More efficient and effective services can be provided to passengers through making good use of the contractors' specialised skills. For some of the maintenance work such as that for fire services equipment, MTRCL must employ registered maintenance contractors in accordance with the statutory requirements.

In making any decision on outsourcing, MTRCL will take into account operational safety, reliability, service quality and implications to staff. All outsourced work must comply with MTRCL's requirements and service level to ensure service quality.

MTRCL has put in place a detailed monitoring system to ensure its maintenance work, including the outsourced maintenance work, meet the standards it adopts.

In fact, MTRCL applies the same standards and requirements to maintenance tasks carried out both by MTR in-house staff and staff of contractors. These standards are in line with good international practices and MTR engineers are responsible for monitoring and supervising work quality to ensure their compliance with standards. Outsourced maintenance work is also subject to the same regular checks as MTR in-house maintenance work. There are daily/weekly and monthly performance reviews, annual asset surveys and three-yearly asset condition assessments. On top of the above, outsourced maintenance work is subject to additional scheduled and random inspections and checks by dedicated MTR staff at supervisory level.

MTRCL conducts reviews of the performance and benefits of its outsourced work from time to time. Currently, it has no plan to terminate any outsourced work.

(f) The Government attaches a great deal of importance to railway safety. The Transport and Housing Bureau is responsible for overseeing the overall policy on monitoring railway safety and regulating railway services.

Electrical and Mechanical Services Department (EMSD) is responsible for monitoring the safe operation of railways. Its functions include investigating into railway incidents, ensuring the adoption of safety practices by the railway corporation, assessing and approving new railways and major modifications, assessing and following up the railway corporation's improvement measures, and ensuring that MTRCL fully complies with all safety requirements in the design, construction, operation and maintenance of the railway systems.

At present, there are nine professional grade staff in EMSD engaged in the regulatory functions of railway safety, including one Government Electrical and Mechanical Engineer, four Senior Engineers and four Engineers/Assistant Engineers.

These professional staff are from different engineering disciplines including civil engineering, electrical and mechanical engineering and electronic engineering.

In addition to the above nine professional staff, the Director of Electrical and Mechanical Services and the Deputy Director of Electrical and Mechanical Services (Regulatory Services) are also appointed as Inspectors for monitoring railway safety under the Mass Transit Railway Ordinance. If necessary, EMSD will also engage experts to offer assistance.

EMSD will create two posts of professional staff with effect from April 1, 2011 to undertake the influx of workload on assessing and approving new railway projects.

We would continue to monitor the work effectiveness in respect of regulation of railway safety and review the human resources when appropriate.

Note 1: There are two tracks on a railway line. Each track has two rails.

Note 2: Contractor staff are responsible for regular visual inspections; dye penetration tests and small scale preventive maintenance work, and track cleaning. Tasks such as replacement of rails, ultrasonic testing and rail grinding etc are carried out by MTR in-house staff.

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