

**Executive Review Panel Report on Arson Incident**

Further to the completion of the investigation carried out by the Executive Review Panel on the arson incident which occurred on 10 February 2017, the MTR Corporation submitted a report to the Government yesterday (25 April 2017).

The report includes the results of the investigation into the incident handling and emergency response, with the conclusion that incident handling by MTR staff and emergency services was robust, orderly, speedy and effective. The Panel also considered that the dissemination of information to passengers and the public was adequate and effective throughout and after the incident. A number of initiatives were put forward in the report to raise public awareness and to enhance risk management. An executive summary of the report is attached.

The MTR Corporation is committed to adopting the recommendations set out in the Panel's report in order to uphold our safety standards in the railway network and to enhance risk management, which is in line with our continuous improvement culture.

- End -

**About MTR Corporation**

MTR Corporation is regarded as one of the world's leading railway operators for safety, reliability, customer service and cost efficiency. In its home base of Hong Kong, the Corporation operates ten commuter railway lines, a Light Rail network and a high-speed Airport Express link on which about 5.6 million passenger trips are made on a normal week day. Another 5.6 million passenger trips are made on the rail services it operates outside Hong Kong in the Mainland of China, the United Kingdom, Sweden and Australia. In addition, the Corporation is involved in a range of railway construction projects as well as railway consultancy and contracting services around the world. Leveraging on its railway expertise, the Corporation is involved in the development of transit-related residential and commercial property projects, property management, shopping malls leasing and management, advertising media and telecommunication services.

For more information about MTR Corporation, please visit [www.mtr.com.hk](http://www.mtr.com.hk).

## **1. Executive Summary**

- 1.1 On the evening of 10 February 2017 (Friday) at 1911 hrs., an arson attack occurred on a train running from Admiralty Station (ADM) to Tsim Sha Tsui Station (TST) on Tsuen Wan Line (TWL) Up Line. The incident caused 19 injuries and minor damage to the train floor. TST was closed until the end of traffic hours on that day.

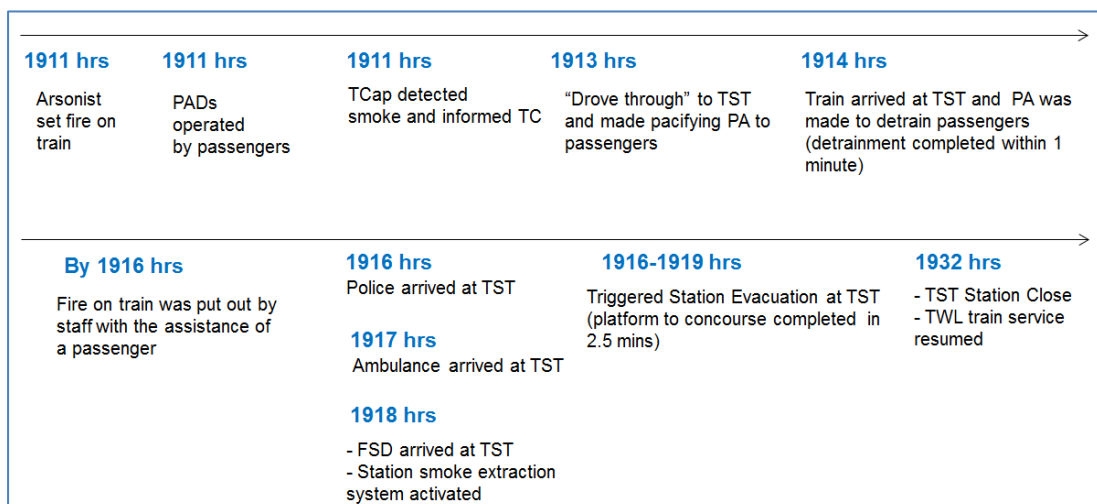
### **The Executive Review Panel**

- 1.2 On 13 February 2017, MTR Corporation (the Corporation) set up the Executive Review Panel (the Panel) to investigate into the incident and identify areas for continuous improvement.
- 1.3 The Corporation appointed Operations Director Ir Adi Lau and Engineering Director Dr Peter Ewen to jointly chair the Panel, with another six senior members from Operations, Engineering and Projects Divisions of the Corporation. At the same time, Professor S.L. Ho who is the Associate Vice President (Academic Support), Academic Secretary and Chair Professor of Electricity Utilization of The Hong Kong Polytechnic University and Mr. Peter Bressington, who is a specialist in fire safety in transport infrastructure, were appointed as external consultants to provide expert advice to the Panel.
- 1.4 The Panel was given the following Terms of Reference:
- To establish the facts and circumstances surrounding the incident and its immediate aftermath;
  - To identify the root cause(s) and other contributory factors leading to the incident;
  - To review the timeliness and effectiveness of the incident response and recovery processes including the initial actions taken at site and the adequacy of the relevant procedures, to recommend areas for improvement;

- To conduct an overall review of the risk and make recommendations (both technical and procedural) with the aim of reducing the probability of recurrence and improving the effectiveness of handling such incidents;
- To assess the timeliness and adequacy of the information provided to the passengers and the public in relation to the incident and the arrangement of shuttle bus services, to recommend areas for enhancement; and
- To review the information and instruction generally provided to the public in relation to safety on and evacuation from the MTR and assess whether any enhancements are required.

## The Incident

1.5 Based on the evidences gathered during and after the incident, the Panel was able to establish the facts and circumstances surrounding the incident and its immediate aftermath by reconstructing the Sequence of Events. The key events are summarised in the timelines below:-



## Root Cause of the Incident

1.6 The Panel finds that the incident was caused by the deliberate act of a suspected arsonist and could not reasonably have been avoided.

## **Timeliness and effectiveness of the incident response and recovery**

- 1.7 The Panel conducted a comprehensive review on the 5 Critical Moments during the incident which included staff response to train on fire; command and communication; detrainment; fire fighting and station evacuation.
- 1.8 The Panel opines that the incident handling and safety procedures by the staff and emergency services were robust, orderly, speedy and effective which successfully contained the number of injured passengers as described below:-
- (a) **Robust.** The train, station and system design, equipment maintenance, emergency procedures, Crisis Management Organisation and staff competence were robust.
  - (b) **Orderly.** The detrainment and evacuation from platform to concourse for thousands of passengers was smooth and orderly.
  - (c) **Speedy.** The detrainment was completed within one minute. The evacuation from platform to concourse was completed within 2.5 minutes. The Police and Fire Service Department (FSD) arrived 2 and 4 minutes respectively after the train arrived at the platform. The fire was extinguished within 2 minutes of the train arrival.
  - (d) **Effective.** The train, station and systems all worked as designed. The Emergency procedures were executed correctly (with some minor deviations) and the incident management, including stakeholder engagement, was effectively controlled by the Crisis Management Team (CMT).

## **Compliance and Adequacy of Procedures**

- 1.9 The critical safety procedures and equipment operations were executed in accordance with procedures and resulted in a smooth and orderly evacuation. However, the Panel identified the following minor deviations, which did not affect the outcome:

- The Automatic Fare Collection (AFC) free wheel function was interrupted due to the inadvertent operation of the Free Wheel Override Switch. Although this was subsequently corrected, some passengers at the concourse used their Octopus cards/tickets to exit the gates or exited through the manual service gates. Having reviewed the Closed Circuit Television (CCTV) footage, the Panel did not observe any blockage at the gates during the incident. The Panel notes that immediate action has been taken to improve the AFC Free-wheel Override Switch labelling and enhance the associated drills and exercises.
- The Smoke Extraction system was activated by the Environmental System Controller (ESC) in the Operations Control Centre (OCC) to relieve the workload of Station Controller (SC). The ESC activated the smoke extraction mode 201, which is specified for a station fire, rather than mode 202 which is the specified mode for a train on fire at the station with doors open. The Panel noted that the smoke around the first 2 cars was effectively extracted by use of mode 201 though mode 202 would have activated additional smoke extraction fans from the trackside.

## **Staff Competence**

- 1.10 The Panel has reviewed the staff training and contingency plan exercises and opines the staff are competent in handling this incident.
- 1.11 The Panel notes that the primary role of the Station Assistant is to assist in platform duties and facilitate crowd control and thus not normally required to be trained in Portable Fire Extinguisher (PFE) operations. However, the Panel notes that the Corporation has started to train station assistants to use PFE and provide supplementary support when required and considers this to be a useful enhancement.

## **Timeliness and adequacy of the information provided to the passengers and the public and shuttle bus services**

- 1.12 The Panel considers that the dissemination of information to passengers and the public was adequate and effective throughout and after the incident.
- 1.13 The post-incident customer service survey held after the incident reflected that customers were in general satisfied with the passenger information disseminated in a timely manner and the sufficient number of staff on-site to support customers. Appreciation was also received regarding staff support and information dissemination.
- 1.14 A free shuttle bus service was provided as per the Contingency Plan.
- 1.15 The Crisis Management Team, which was chaired by the Operations Director, was activated and in session at 2010 hrs. at the OCC to oversee the incident. The CMT arranged the relevant teams to carry out hospital visits to the injured passengers; recover the incident site; and to ensure adequate and communication with internal and external stakeholders in a timely manner.

## **External Consultants' Views on Incident Handling**

1.16

***“The incident handling and safety procedures were shown to be effective in dealing with the 10<sup>th</sup> February incident. The evidence for that is compelling. However, it is important not to be complacent but to learn from such an incident and see where enhancements may play a positive role should such a non-conventional threat occur again.***

***- By Consultant Mr. Peter Bressington***

1.17

*“It is unfortunate to have fire incidents. However the outcome is a full testimony of the effectiveness of the mitigation measures in case of a fire outbreak in MTR. The fact that the casualty was only confined to a few victims in the vicinity of the suspect arsonist, even though the latter was trying maliciously to set fire inside a crowded train, is a vivid demonstration that the fire handling procedure of MTR is robust and effective.”*

*- By Consultant Professor S.L. Ho*

## **Risk Review and Potential Areas for Improvement**

1.18 Based on the insights from this incident, the Panel has studied the risk and potential improvement measures to maintain the risk to a level which is reasonably practicable. In doing so, the Panel has given due consideration to the suggestions obtained from various channels including MTR staff, MTR hotline, views expressed by the public, councilors and Government departments. The Panel has also benchmarked other overseas railways to assess whether there are good practices which could be applied to MTR operating environment to further mitigate the risks.

## **Public Education**

1.19 The Panel notes that the Corporation regularly promotes public education of railway safety through various channels and a safety booklet. The Panel observed that most passengers behaved calmly and orderly during the evacuation and followed staff instructions.

1.20 The Panel noted undesirable behaviour by a small minority of passengers who stayed on the platform taking photos and videos of the incident after the train arrived. The Panel considers it important to refresh safety messages and to educate passengers of the emergency equipment and critical safety behaviours on an on-going basis.

## **Security Check of Flammable and Dangerous Goods**

1.21 The Panel notes that the Corporation has an established arrangement with the Police to monitor the security threat level and additional security measures will be escalated as and when required with a view to balancing the risk and operational considerations of our railway system which serves around 5.6 million passengers every weekday. After due consideration, the Panel does not recommend the implementation of security checks on passengers at entry gates.

## **Other Provisions and Study**

1.22 The Panel has reviewed the other potential improvement areas and consulted external consultants' views on the provision of fire extinguishers, fire blankets and in-train CCTV and the study of retrofitting sprinklers in an Urban Lines (URL) station. The Panel recommends enhancements and study as listed in Items 1.31 to 1.35.

## **Conclusions on the Circumstances and Handling of Incident**

1.23 The incident was caused by the deliberate act of a suspected arsonist and could not reasonably have been avoided.

1.24 Passengers were detrained and evacuated in an orderly and speedy manner.

1.25 The train and station equipment functioned properly. The fire retardant train saloon design, drive through strategy, procedures, and fire provisions in station and tunnels all worked as per design to provide a safe environment for the passengers to evacuate.

1.26 In sum, this incident was handled very professionally and met the Robust, Orderly, Speedy and Effective (ROSE) criteria and the staff and emergency services involved should be commended.



## Recommendations

1.27 During the review process, a number of ways to raise public awareness and enhance risk management which could be implemented immediately were identified and as a result some short-term actions have already been initiated by the Panel. In addition, the Panel recommends two medium to long-term measures.

### Short-term

1.28 Staff Fire Safety Training - Station assistants are now being trained to use PFE to provide supplementary support when required. The Corporation will further engage FSD in providing additional fire safety training and local briefing to staff.

1.29 Public Education on Fire Safety on MTR - A new series of passenger safety education is being rolled out to reinforce the fire safety instructions, the ban on flammable / dangerous goods, and the use of emergency equipment. The Corporation will continue to work with Electrical and Mechanical Service Department – Railway Branch (RB) and FSD to jointly promote fire safety through various channels. Regular publicity campaigns will also be arranged to remind passengers not to carry flammable and dangerous goods into the railway premises.

1.30 Drills and Exercises - An increased number of Joint Drills and Exercises with Police and FSD from 12 to over 15 in 2017 with more public participation has been planned.

1.31 Portable Fire Extinguisher - Provide additional PFE inside station Fire Hose Reel Cabinets that currently do not have PFE installed.

1.32 Portable Fire Extinguisher Location Labelling - More prominent PFE labelling to help passengers identify the PFE at stations and on trains is being provided.

1.33 Fire Blankets – Provide a fire blanket at platform level for use by staff.

### Medium to Long-term

- 1.34 In-train CCTV – it is targeted to have CCTV in all heavy rail trains by 2023.
- 1.35 Sprinklers in station – test out the installation constraints and evaluate applicability of retrofitting a sprinkler system.