

Legislative Council Panel on Transport

Review of Incidents relating to the Airport Railway

Purpose

This paper provides information on disruptions to train service which have occurred since the Airport Railway (comprising Tung Chung Line and Airport Express Line) came into operation in July 1998 and the remedial measures taken by MTR Corporation.

Airport Railway Performance

2. Since the Airport Railway commenced service in July 1998, its service performance has been maintained at very high standards. During the first eleven months of 2001, the key performance indicator of 'Passengers journeys on time' for Airport Express Line was maintained at 99.8% while another critical performance indicator 'train punctuality' was maintained at 99.9%.

3. Notwithstanding the comprehensive maintenance regime and detailed operational planning of the Corporation, unexpected incidents did occur which caused disruptions to train service. Since the commissioning of the Airport Railway in July 1998 up to end November 2001, we have operated more than 270,000 train trips and there were eight significant disruptions. Of these six were in the first 18 months of operation and two occurred in 2001. A summary of these service interruptions together with the remedial measures taken, is at **Annex**.

Contingency Arrangement

4. Prior to the commencement of service of the Airport Railway, the Corporation has established contingency procedures, which have proved to be effective in incident handling.

5. For any disruption on the Airport Express Line that is unlikely to be recovered within 20 minutes, emergency shuttle buses are provided for passengers going to and coming from the Airport. The Corporation will advise passengers through its station broadcasting system to take alternative modes of transport in the event of disruption of Tung Chung Line which can be recovered within a short period of time. For any disruption which is not anticipated to be recovered in one hour, emergency bus services are called upon.

6. Under these circumstances, the Corporation notifies Transport Department, other transport operators and electronic media on train service and alternative transport arrangements.

Recovery and Remedial Measures

7. During any train service interruption, the Corporation provides information on train service to passengers on board trains and at stations. Information is also disseminated through the electronic media to inform passengers who are planning to or on their way to the stations.

8. During such incidents, priority is given to the recovery of the train service in the shortest period of time. All staff have been trained and qualified to handle such recoveries in a safe, speedy and effective manner.

9. Detailed investigation into the cause of the incident is carried out immediately after any incident, with the objective of establishing the root cause of the incident and any improvement which can be made to prevent similar incidents in the future. This information is shared with the Government's Railway Inspectorate.

10. None of these incidents have had any safety implications to passengers. Remedial and improvement measures have been developed and implemented accordingly with a view to further improving the performance of train service and customer service.

Conclusion

11. Members are requested to note the above information.

MTR Corporation
January 2002

Disruption of Service on the Airport Railway

Date and Location	Summary of Incident	Cause / Recovery / Remedial Measures
<p>6 Nov 2001 at 0528 hrs, near Tsing Yi Station, inside the tunnel leading up to the direction of Lantau</p>	<p>Airport Express Line and Tung Chung Line train services to the west of Tsing Yi was suspended for 3 hours.</p> <p>During the incident, emergency bus services were operated direct from Hong Kong, Kowloon and Tsing Yi stations to the airport at 10 to 12 minutes intervals and between Tung Chung and Tsing Yi at 4 to 6 minutes intervals.</p>	<p>The event occurred prior to the start of the morning service. Some strands of tunnel repair material had detached from the tunnel roof and dropped onto the pantograph of an Engineer's Works Train and the overhead line, leading to flashover of the overhead line and tripping of the power supply circuit breakers. This power cable was broken during the flashover.</p> <p>The repair work commenced at 0624 hrs. The detached materials were removed and the broken wires were temporarily repaired and completed at 0719 hrs. The spreading of dropped repair material by the running of the Engineer's Works Train caused subsequent tripping of trains used for checking prior to the restoration of service. After removal of all repair material from the overhead line, train service to Tung Chung and Airport stations resumed.</p> <p>Results of the technical investigations showed that the repair material applied a few hours earlier, had not been properly 'bedded' into the epoxy resin as the surface of the tunnel was particularly rough and the relatively low temperatures that night affected the curing time. As a precautionary measure, all of these repair materials have been removed from tunnels.</p>
<p>25 June 2001 at 1644 hrs, in the open section on the track towards Hong Kong near Tai Ho Wan junction</p>	<p>Airport Express Line service and Tung Chung Line service to the west of Tsing Yi were suspended for 4 hours.</p> <p>During the period, emergency bus services were operated from Hong Kong, Kowloon and Tsing Yi stations to the airport at 10 minutes intervals and between Tung Chung and Tsing Yi at 5 minutes intervals.</p>	<p>A copper jumper cable which connected the power supply feeder wires to the messenger wire dropped when the nylon cable ties which hold the jumper cable up to the feeder wires broke. The pantographs of a passing Airport Express train hit the 'loop' of the jumper wire and tore it down. The train's pantographs were deformed, which then caused damage to the overhead line equipment at a number of locations over a distance of 6.5 km.</p> <p>Train service resumed upon the completion of emergency repairs.</p> <p>Detailed investigation showed these standard nylon cable ties used to secure the cable had become brittle as a result of weathering. All nylon cable ties have now been</p>

Date and Location	Summary of Incident	Cause / Recovery / Remedial Measures
		changed to metal ties.
<p>12 Nov 1999 at 1337 hrs, near Airport Station Servicing Platform</p>	<p>The Airport Express Line service was suspended for 2 hours and the Tung Chung Line service was not affected.</p> <p>During the incident emergency buses were operated direct from Hong Kong, Kowloon and Tsing Yi stations to the airport at 4 to 10 minutes intervals.</p>	<p>A copper alloy ferrule connecting a power supply cable to an insulator became detached and the overhead line cable dropped.</p> <p>Normal train service resumed after the repair.</p> <p>After detailed technical investigation, all connectors were changed to stainless steel.</p>
<p>5 Nov 1999 at 1220 hrs, between Olympic and Lai King Stations in both directions</p>	<p>Train service between Hong Kong and Tsing Yi Stations of both Airport Express Line & Tung Chung Line were suspended for 2 hours. Train services between Airport and Tsing Yi and Tsing Yi to Tung Chung stations on both lines were maintained at 15 minutes intervals.</p> <p>During the incident, emergency bus services for Airport Express Line were operated direct from Hong Kong and Kowloon Stations to the airport at 2 to 5 minutes intervals and for Tung Chung Line between Tsing Yi and Cheung Sha Wan Stations at 5 to 10 minutes intervals.</p>	<p>There was a loss of centralised signalling control function in the Operations Control Centre, control was transferred to local Station Control except for Lai King and Olympic Stations, causing a disruption to service.</p> <p>A defective telecom network switch was identified. To prevent recurrence, the system was upgraded to enhance its performance.</p>
<p>22 Aug 1999 at 1948 hrs, near Airport Station in the direction towards Hong Kong</p>	<p>Airport Express Line service was suspended from Tsing Yi to Airport by 2¾ hours while Tung Chung Line was not affected.</p> <p>During the incident, emergency bus services were operated from Hong Kong, Kowloon and Tsing Yi Stations to the airport at 10 minutes intervals.</p>	<p>A clamp holding the traction supply feeder cable became detached during typhoon. The feeder cable dropped, causing a dead short to the overhead line mast and power supply for the section near Airport and Tung Chung Station was discharged and could not be restored. The recovery works were completed and train service resumed.</p> <p>At the time of the incident, Tropical Cyclone Signal No. 8 was hoisted. The feeder wire clamp of the overhead line insulator was detached by severe vibration resulting from the strong wind.</p> <p>A system wide check of all similar clamps was conducted after the incident to ensure all were secure and this has been emphasised in the maintenance procedures.</p>

Date and Location	Summary of Incident	Cause / Recovery / Remedial Measures
<p>16 Mar 1999 at 1602 hrs, near Airport Station Servicing Platform in the direction towards Hong Kong</p>	<p>Airport Express Line service between Tsing Yi and Airport Station was suspended for 7 hours, whereas the Tung Chung Line service was not affected.</p> <p>During the incident emergency bus services were operated direct from Hong Kong, Kowloon and Tsing Yi stations to the airport at 5 to 10 minutes intervals.</p>	<p>An empty train running from the Departure Platform experienced an emergency stop before entering the Arrival Platform. Its rear pantograph happened to rest beneath a section insulator. Because of the voltage difference between the two traction supply sections, excessive arcing developed over the pantograph and the contact wire of the overhead line was broken. When the following train passed through the location, its pantographs were deformed and the overhead line wires were torn down.</p> <p>Remedial measures were taken to adjust the setting of insulators to avoid possible excessive arching. Improved train operating procedures were developed to prevent reoccurrence of similar incidents.</p>
<p>3 Feb 1999 at 1747 hrs, near Tung Chung</p>	<p>Tung Chung Line was suspended between Tsing Yi and Tung Chung for 2½ hours, whereas the Airport Express Line was not affected.</p> <p>During the incident emergency bus services were operated between Tsing Yi and Tung Chung at 8 to 10 minutes intervals.</p>	<p>Excessive arcing developed at the overhead line section insulator over pantograph of a train while it stopped in the section to reset a fault. The overhead line contact wire was damaged.</p> <p>Upon completion of the contact wire reconnection, normal train service resumed.</p> <p>A technical Investigation was conducted to identify the cause of the excessive arcing.</p> <p>As a remedial measure, improved operational procedures were adopted.</p>
<p>23 July 1998 at 0945 hrs, near Tsing Yi in the direction towards Tung Chung</p>	<p>While service of Airport Express Line was maintained throughout the period, Tung Chung Line service was suspended between Tung Chung and Tsing Yi for 2½ hours.</p> <p>During the period, emergency bus services were operated from Hong Kong, Kowloon and Tsing Yi to Tung Chung at 10 to 18 minutes intervals.</p>	<p>An Airport Express train passed through a set of points as the train operator failed to observe the signal indicated and caused damage to the track.</p> <p>Repair works took 2½ hours to complete and train service was then resumed.</p> <p>Although this was an isolated case soon after opening, the incident has been included in internal training studies.</p>

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