Ngong Ping 360
Cause of Suspension of Service on 19 March 2008

The Incident

The Ngong Ping 360 ropeway service was suspended intermittently for 55 minutes on 19 March 2008. The operating company has completed their investigation and submitted their investigation report to EMSD. The cause of the incident together with the remedial actions are given in the following paragraphs.

Cable car system

Ngong Ping 360 ropeway is a bi-cable type ropeway system. Figure A shows a typical cabin of Ngong Ping ropeway.

Figure A A cabin of the Ngong Ping ropeway

When a cabin enters a terminal, it will move in a conveying system inside the

terminal by a series of belt/pulley assemblies. To ensure all the cabins are being transferred smoothly in the conveying system, the positions of cabins are monitored continuously by a computer which will initiate an alarm and trigger stoppage of both the conveying system and the cable car system whenever an incorrect separation of cabins is detected.

Findings

A set of driving belts at one of the belt/pulley assemblies at the Ngong Ping Terminal dislodged from their normal position, resulting in incorrect cabin separation within the terminal passenger disembarkation area. The incorrect cabin separation activated an alarm and stopped the ropeway.

Investigation revealed that the cause leading to the belt dislodgement was the offset positioning of the 2 pulleys at both ends of the belts. The pulleys were located at a curved section of the conveyor system and therefore not aligned in a straight line, and one of the pulleys was found in a slightly tilted up position. The tilting of this pulley, together with the non-linear alignment of the 2 pulleys, contributed to the belts dislodgement from the pulleys.

System Safety

Although the dislodgement of belts from the belt/pulley assembly has caused suspension of cable car service, currently the cable car system is in a state that is safe for operation.

Remedial Actions

Actions taken by the operating company to prevent recurrence of similar incident and enhance system reliability include :-

a) tightening the belt of the affected belt/pulley assembly to provide the proper tension required and adjusting the tilted position of the pulley to reduce the tendency of belt dislodgement (already completed);

b) installing an additional tensioner to the belt/pulley assembly to maintain the belt tension (to be completed by end April 2008); and

c) checking the cable car system for similar assemblies with pulleys not aligned in a straight line and carrying out the necessary improvement work.

EMSD
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