Managing Lift and Escalator Incidents - Misconceptions about Lift Plunge

MC VO : In Hong Kong, lifts and escalators have become part of our daily lives. Most residents use them everyday to travel between floors within a building when going for school, work, home or even shopping.
MC Tag : Since we frequently use lifts and escalators, their safety issues are indeed worthy of our attention. MC Tag : Proper maintenance and repair can indeed reduce lift and escalator incidents. But according to recent reported incident statistic, over 90% of the total number of reported lift and escalator incidents were caused by passenger behaviors, for example, fingers putting too close to and trapped in the gap between lift door and door frame when traveling on a lift , and falling by loss of balance when walking on an escalator. This shows that passenger behaviors in using lifts and escalators are indeed worthy of our attention.
MC Tag : Therefore, the Electrical and Mechanical Services Department has established relevant guidelines on safe use, maintenance and management of lifts and escalators for the responsible persons and users of lifts and escalators. MC Tag : Now let' s explain on what safety devices do a lift have.
MC VO : A lift should have five basic safety devices to guarantee safety. These include suspension ropes with sufficient safety factor, door locking device, overspeed governor, safety gear, and buffer. MC VO : A lift is generally suspended with two or more suspension ropes. The minimum breaking loads of these suspension ropes should be twelve times or above of the rated load of the lift. Hence, if one rope has failed, the others will still have sufficient capacity to suspend the lift for ensuring passenger safety. The car door locking device and landing door locking device of a lift ensure that both the car door and landing door must be closed and locked when a lift is traveling in order to prevent passengers falling in the lift well.

MC VO : Both the overspeed governor and safety gear are the safety devices to prevent a descending lift from overspeed. When a descending lift exceeds a specified speed, the overspeed governor will lock the governor rope and actuate the safety gear to stop the lift.

MC VO : After the overspeed governor has locked the governor rope, the safety gear will then be actuated to grip the guide rails firmly and stop the lift safely.

MC VO : The buffer acts as another safety protection. When a descending lift exceeds its limit of travel in a failure, the buffer can reduce the impact of the lift car.

MC VO : Hence, if these five safety devices are working properly, the lift is considered to be safe.

MC VO : Besides these basic safety devices, a lift also has a self-monitoring system which, on detecting a fault, will actuate the safety protection system to stop the lift, preventing occurrence of accident. On detecting a fault, some newer models of lift can further send the passengers to the designated floor under safe circumstance and open the lift doors to release them before suspending the lift service for repair.

MC Tag : Lifts are indeed safer and more reliable with these safety devices. However, it is most important to use the lifts properly in order to prevent accidents. Now let's see what happened to the youngsters who didn't follow the guidelines on safe use of lifts.

Scene 1

Female Youth A: (Panic) Wow, did the lift just plunge?

Male Youth: (Panic) Are you serious? I don't want to die yet…

Female Youth B: Calm down. The lift has just stopped!

Female Youth A: Yes, the lift has stopped!

Male Youth: (Panic) So what shall we do now? Female Youth B: Let me call someone for help by the emergency alarm! Property Management Officer: Hello, is everyone inside okay? Youth B: We are all okay! Please help us out! Property Management Officer: Calm down and don’ t be scared. Someone will come save you guys soon. Remember, don’ t move around. Don’ t try to open the doors and don’ t go near the doors, understood? Female Youth B: Okay! Property Management Officer: Fault call center, some people are trapped inside a lift. Location is On Sum Building. There are three passengers, and no one is injured. Please come as soon as possible. Thank you!
Scene 2 Worker: No worry guys, I am a registered lift worker. I will now open the lift doors to let you out. While opening the lift doors, the lift may have a little movement. That’ s normal and don’ t be scared. Female Youth B: Okay. Thanks! Worker Assistant: Fai, I’ m going to the lift machine room to release the lift. Worker: Okay!
Scene 3 Worker: Please come out... Property Management Officer: Be careful... Youth B: So lucky! We are finally out.

Female Youth A: It must be you! You were dancing inside the lift and the lift stopped! Property Management Officer: You guys should not have jumped inside the lift! Female Youth A: But the lift was malfunctioned and it just plunged! Worker: It wasn’t a lift plunge actually. It was rather due to your dance inside the lift which actuated the safety protection system to stop the lift abruptly and hence you all mistaken it as a lift plunge. Female Youth B: But the floor indicator displayed that the lift traveled a few floors downward! Worker: It’s because according to the design of the lift, the safety protection system was actuated and hence the lift stopped. When you stopped dancing, the safety devices resumed normal. After the self-monitoring system confirmed that the fault was cleared, the lift would automatically send you to the designated floor to release you. However, it stopped abruptly once again in the course of travel because someone tried to force the lift car doors open. Male Youth: Oh! So it’s how it was. It really scared me to death! Property Management Officer: So don’t dance inside a lift and don’t try to force the lift car doors open in the future! Got it? All Youths: Ok!
MC Tag : The above-mentioned is one of the examples which causes passengers to mistake the situation as lift plunge and hence in a panic. So what are factors causing the misconception of lift plunge? Let’s have an expert to tell you now.
Wong Sir : Why would the safety protection system of a lift cause the misconception of lift plunge in passengers? Wong Sir : There are self-monitoring systems in the lifts. When a situation which may potentially cause a fault, such as loosening of car door locking device due to a naughty child jumping inside the lift, is detected by the self-monitoring system, the safety protection system would be actuated automatically to stop the traveling lift to prevent accident. Wong Sir : When a lift is traveling upward, the passengers’ inertia is upward as well. When the lift stops abruptly, the passengers would perceive as they were weightless, and hence a feeling of lift plunge.

Wong Sir : When the passengers stop jumping, the car door locking device would resume normal. After the self-monitoring system confirmed that the fault was cleared, the lift would automatically travel to the designated floor to release the passengers and subsequently suspend its service for repair. If the lift is traveling downward, the floor indicator would display concurrently from higher floor level to lower floor level, the whole course of which would lead to misperception of a lift plunge by the passengers. Wong Sir : Besides, some lifts only stop on certain floors. Take a lift which only stops on G/F, 10/F, 14/F, and 18/F for example. While it is traveling from 10/F to 14/F, the floor indicator may instantly change its display from 10/F to 14/F, but the lift is in fact still near 10/F. If a fault occurs in the lift in the meanwhile, the lift would stop and the floor indicator would reset its display to 10/F. Together with the perception of plunge when the lift stops abruptly, the passengers may mistake the case as if the lift plunged for 4 floors from 14/F to 10/F. Wong Sir : So don’ t worry everyone. Lift plunge is in fact a misconception. The situation encountered by the passengers is just owing to the action of the safety devices of the lift. With various safety devices, a lift is indeed a very safe equipment.
MC VO : There are other factors that would also cause a lift to stop abruptly. For example, when someone attempts to force the lift landing doors open, causing a fault in the landing door lock signal, or even loosen the landing door lock, the lift would stop abruptly. MC VO : Another factor is the weather. When the ambient temperature drops abruptly, the suspension ropes would elongate due to contraction. When the suspension ropes become too long, the suspension rope safety device would be actuated to stop the lift. Therefore, the maintenance workers would often check and adjust the lengths of the suspension ropes when the weather changes abruptly. MC VO : Also, the lift would stop abruptly when there is a power failure or unstable power supply in the building.
MC Tag : There are several points for passengers and property management officers to pay attention to when there are passengers trapped inside a lift due to lift failure.

MC VO : If trapped in the lift, passengers should not be panic and should stay calm. Press the emergency alarm push button for help or use the intercom inside the lift to contact a property management officer of the building. Follow the instructions, and wait inside the lift for rescue. MC VO : Since the lift may resume service in a sudden, passengers should not attempt to force the lift car doors open or open the emergency trap door to avoid more serious incident. MC VO : The safety design, emergency lighting and communication devices as well as ventilation system of a lift can guarantee passengers' safety. MC VO : There is an emergency contact number of the registered lift contractor in some lifts. If necessary, passengers can call for assistance. MC VO : It is the safest to follow instructions, stay calm, stay in contact and wait for rescue inside the lift.
MC VO : As for property management officers for lifts, when there is a lift incident and passengers are trapped, he/she should contact the fault call center of the registered lift contractor as soon as possible for the contractor to immediately send their staff to rescue the trapped passengers and examine the lift. MC VO : Since the lift may resume service in a sudden, the property management officer for the lift should not attempt to rescue the trapped passengers by forcing the lift landing door open. This could avoid more serious incident. MC VO : The property management officer for the lift should observe the situation of the trapped passengers and communicate with them through CCTV and intercom of the lift respectively. He/she should appeal for calm of the trapped passengers and explain to them that staying inside the lift to wait for rescue is safe, such that they could relieve their anxiety.
Scene 4

Property Management Officer: Hello?

Woman: Are you the security guard?

Property Management Officer: Yes!

Woman: I am trapped in the lift. What should I do?

Property Management Officer: Stay calm. How’ s your situation? Did you get hurt?

Woman: I’ m the only one here. I didn’ t get hurt.

Property Management Officer: It’ s okay. I will find someone to rescue you now. Remember, don’ t press the buttons mischievously. Wait there quietly and don’ t move around. Someone will be there to rescue you soon.

Property Management Officer: I have already called someone to come. They will be here soon. Don’ t be scared. I’ ll be here with you.

Woman: Okay. Thanks!

MC Tag : When responsible person for lift contacts the fault call center of registered lift contractor to report incidents of trapped passengers, the following items should be mentioned in detail:

(1) Name and address of the building;

(2) Lift number of the lift that is out of order;

(3) Conditions of the lift, e.g. the lift car doors are partly open, the lift car and landing doors are open but the lift car is not level with the floor landing, etc.;

(4) Floor on which the lift stops;

(5) Conditions of the trapped passengers; and

(6) Name and telephone number of the contact person.

MC VO : The responsible person of the lift and the trapped passengers should collaborate with the technicians of the contractor so as to facilitate a prompt and safe rescue. In case of more serious circumstances, e.g. passengers feeling sick or being injured, or a fire has broken out, the responsible person for the lift should dial 999 to seek rescue from the Fire Services Department.

Mc Tag : The responsible person must, within 24 hours after the specified incident comes to the person’ s knowledge, notify in writing the Electrical and Mechanical Services Department of the incident..
MC VO : In accordance with section 40 of the Lifts and Escalators Ordinance (Cap. 618), the responsible person for the lift must, within 24 hours after the following incident comes to the person’ s knowledge, notify in writing (using the specified form LE27) the Electrical and Mechanical Services Department and relevant registered lift contractors of the incident.: (1) The death of, or injury to, any person involving any part of the lift; (2) Failure of the main drive system; (3) Breakage of any suspension rope; (4) Failure of a brake, overload device or safety equipment; or (5) Failure of the lift door interlocking devices. MC VO : In accordance with section 70 of the Lifts and Escalators Ordinance (Cap. 618), the responsible person for the escalator must, within 24 hours after the following incident comes to the person’ s knowledge, notify in writing (using the specified form LE27) the Electrical and Mechanical Services Department and relevant registered escalator contractors of the incident. (1) The death of, or injury to, any person involving any part of the escalator; (2) Failure of the main drive system; or (3) Failure of a brake, step chain, drive chain or safety equipment. MC VO : Besides, the registered lift or escalator contractor must submit a full report within 7 days after the date on which the contractor is notified of the incident, or within 3 days and 14 days (or a longer period the Director may approve) after the notification submit a preliminary report and full report respectively to the Electrical and Mechanical Services Department. MC VO : The registered lift and escalator contractors are able to offer assistance in this respect. Under mutual agreement, the contractor may, on behalf of the responsible person for the lift and escalator, notify the Electrical and Mechanical Services Department of the incidents as well as investigate the incidents, so as to comply with the requirements of Sections 40 and 70 of the Lifts and Escalators Ordinance (Cap. 618). However, the responsible person must ensure the contractor has fulfilled relevant responsibilities.

MC VO : Besides, according to Sections 41 and 71 of the Lifts and Escalators Ordinance (Cap. 618), the responsible person has the duty to offer assistance in investigating incidents with regard to his/her lifts and escalators. Enforcement officer may request the responsible person for the lift and escalator concerned, and the responsible registered lift and escalator contractors, to provide without charge any assistance or information that the officer may reasonably require for carrying out the investigation.
MC Tag: To prevents accidents, we need to pay attention to safety and use the lifts and escalators properly. The Electrical and Mechanical Services Department has established relevant guidelines.
MC VO: When using lifts… (1) Do not overload the lift; (2) Do not interfere with the lift door and the lift equipment; (3) Do not play or jump inside the lift car; (4) Stay clear of the lift door, especially when it is opening or closing; (5) Do not use the lift in case of fire; (6) Children must be accompanied by adults when using the lift; (7) When trapped inside a lift, keep calm and seek help by using the alarm bell and intercom. Wait for rescue and do not try to open the lift door by yourself; (8) To avoid interference to lift operation, do not press the buttons inside and outside of the lift mischievously; (9) To avoid causing any damage to the lift buttons, do not press the buttons with any objects other than your fingers; (10) When you are walking into or out of the lift, beware of the leveling of the lift and the floor landing to avoid tripping.
MC VO : When using escalators… (1) Do not overload the escalator; (2) Do not interfere with the escalator equipment; (3) Hold the handrail and do not walk on the escalator to avoid accidents;

(4) Do not play or run on the escalator;

(5) Do not extend your body outside the handrail;

(6) Keep your feet away from the skirting or yellow stripes;

(7) Keep trolleys, prams, bicycles or wheelchairs off the escalators

(8) Do not play with the emergency button which is to be used only in an emergency;

(9) Children must be accompanied by adults when using the escalator;

(10) Lift your foot when stepping on and off the escalator to avoid losing balance and getting the front of your shoes trapped;

(11) Assist the elderly and those in need. People with mobility problems or carrying large items are advised to use the lifts;

(12) Do not go beyond or vandalize the obstruction guards;

(13) When wearing open-toe footwear such as slippers or sandals, be careful of the gaps between the steps or between the steps and the skirting. Keep clear of the deflector;

(14) Pay attention to the gaps between the steps or between the steps and the skirting when wearing long dresses;

(15) Lift the umbrella up when carrying one. Don’ t place the tip of the umbrella into the slots or in between the steps;

(16) Pet owners must hold their pets firmly;

(17) Do not go in the opposite direction as the escalator;

(18) Do not sit on the escalator;

(19) Do not climb on the handrail.

MC Tag : The above-mentioned provides guidance to passengers on how to use lifts and escalators properly.

MC Tag : Both the lifts and escalators in Hong Kong have various comprehensive safety protection systems. Faults and accidents of lifts and escalators can indeed be reduced with safe and proper use.