



# LIFT & 電梯通訊 ESCALATOR NEWSLETTER

## Feature Article

## Solutions to Mitigate the Impact of Voltage Dips on Lifts

A voltage dip refers to a drop in voltage to below 90% of the rated value, typically lasting around 0.1 seconds before the normal power supply voltage is restored. Voltage dips are often attributed to external factors, such as adverse weather or fallen trees. A voltage dip may trigger the activation of the safety protection system of some lifts, resulting in service suspension and passenger entrapment. In recent years, Hong Kong has experienced several lift entrapment cases due to voltage dips, bringing renewed public attention to this issue and the associated protection devices.

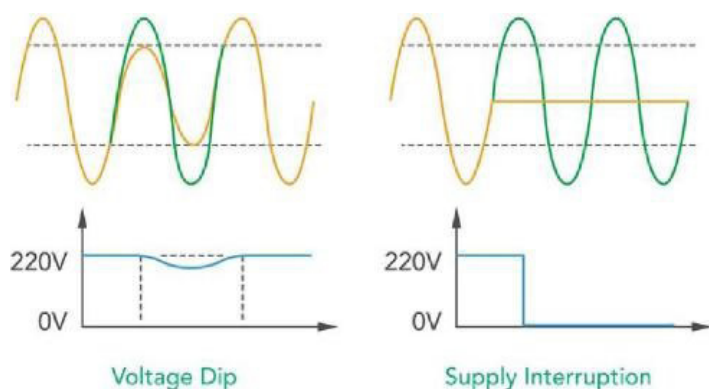


Figure 1 – voltage dip (left) and power outage (right)

To address the problem of lift service suspension caused by voltage dips, the Electrical and Mechanical Services Department (EMSD), power companies and the lift industry held multiple rounds of discussions, and ultimately introduced the post-voltage-dip-operation (PVDO) means as a mitigation measure in 2009, which has been implemented on all new lifts. When lift service is suspended after a voltage dip, the PVDO device will automatically check the lift's safety system after the power supply is restored. If the safety system is found to be normal, the control system will release the trapped passengers or directly resume normal lift operation, thereby minimising the impact of voltage dips on lift service.

From a technical perspective, lifts installed before 2009 typically require control system replacement before they can be equipped with the PVDO means. This is because the lift control system may initiate immediate protective shutdowns in

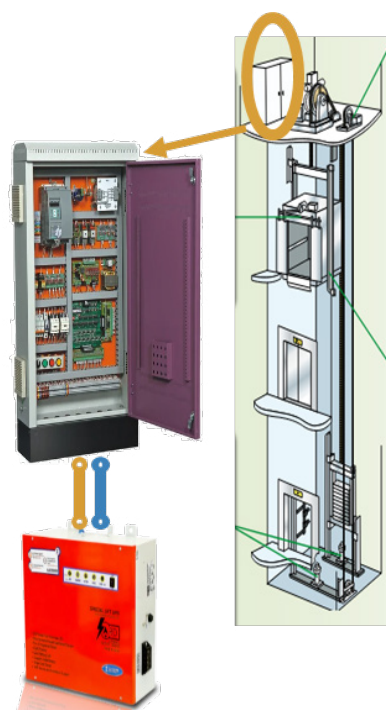


Figure 2 – PVDO means

response to overcurrent caused by the voltage dip, resulting in suspension of lift service. Besides, some lifts fitted with third-party automatic rescue device may not have PVDO function. As such, replacement of the lift control system may be necessary in order to prevent lift service interruption following a voltage dip. In this connection, the EMSD revised the Code of Practice on the Design and Construction of Lifts and Escalators (CoP) in 2019 to mandate the inclusion of the PVDO function in the automatic rescue device for new lifts.

In fact, since the promulgation of the guidelines on lift modernisation in 2011, the EMSD has been vigorously promoting the modernisation of lifts through government funding schemes, such as the Urban Renewal Authority's Lift

Modernisation Subsidy Scheme. The power companies have also launched funding programmes for energy-saving improvement works in buildings, and these funding programmes are eligible for proposals of lift modernisation or replacement that incorporate energy-saving elements. Most subsidised projects involved replacement of the lift control systems to the latest models equipped with the PVDO means. In addition, in view of the public concern over lift entrapment due to power outages, the EMSD has further revised the CoP to mandate the fitting of an automatic rescue device or other backup power supply device (such as backup power supplies) in newly installed lifts. The relevant amendments took effect on 1 June 2025.

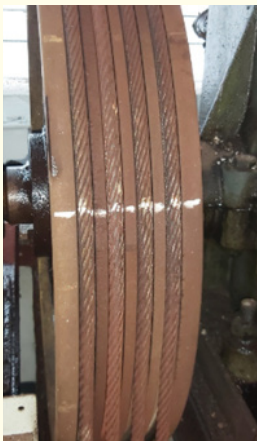
The collaboration among all stakeholders is essential to the effective prevention of lift entrapment caused by voltage dips. Passengers trapped in lifts should keep calm, press the alarm button to notify the building management over the intercom and wait for rescue. After the passengers are released, the building management should promptly inform the other summoned rescue agencies (such as the Fire Services Department or registered lift contractors) to facilitate efficient manpower deployment. Through the collaboration among all parties and modernisation of lift installations, the impact of voltage dips can be minimised.

*(Contributed by the Lift and Escalator Contractors Association)*

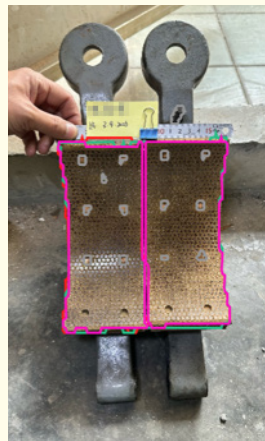
## News **-in-** Brief

### Latest Development of the Lift and Escalator Condition Analysis System

The EMSD officially launched the Lift and Escalator Condition Analysis System (LECAS) on 25 November 2024. When photos of lift/escalator components are uploaded via the Digital Log-books by lift and escalator trade practitioners (including registered lift/escalator engineers and registered lift/escalator workers) or responsible persons for lifts/escalators (RPs), the LECAS will automatically assess the condition of the components (currently focusing on suspension ropes and brake pads) using artificial intelligence (AI) and image analysis technology.



**Figure 3 – A suspension rope with potential anomalies detected by the LECAS**

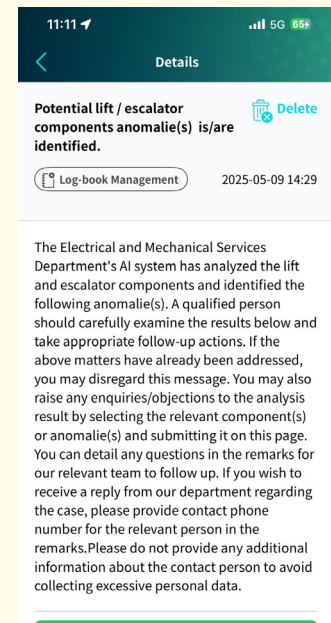


**Figure 4 – Brake pads with potential anomalies detected by the LECAS**

If the analysis results indicate potential component anomalies, the user who uploaded the photos will receive a notification via the Digital Log-books to facilitate timely arrangement of targeted inspections and repairs. Users can upload the latest photos of the components after follow-up actions have been taken, or raise objections with explanations in the message field. The EMSD will continue to enhance the analysis accuracy of the AI system based on user inputs.

The LECAS, since its launch, has successfully analysed over 100 000 photos and identified potential anomalies from more than 7 800 photos, followed by notifications sent to the uploading users to facilitate arrangement of targeted checks and repairs in a timely manner, thereby preventing incidents caused by component failure. While the EMSD encourages wider adoption of the LECAS by RPs and the trade, RPs may also include provisions in the maintenance contracts requiring contractors to utilise the LECAS for targeted checks and repairs.

Looking forward, the EMSD plans to further upgrade the functionality of the LECAS to analyse a broader range of lift and escalator components, and will continue to improve the accuracy of AI analysis to support the trade in delivering safer and more reliable lift/escalator services for the Hong Kong community.



**Figure 5 – A notification on potential component anomalies**

## Latest Development of the Digital Log-books System

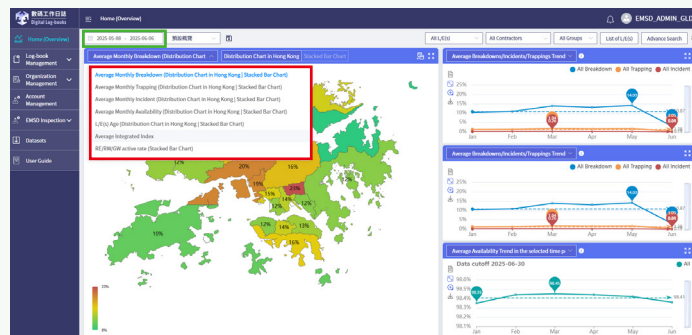
The EMSD has rolled out the Digital Log-books for Lifts and Escalators (the Digital Log-books) to digitalise the maintenance records of lifts and escalators and replace conventional paperbound log-books. The Digital Log-books enable responsible persons for lifts/escalators (RPs), registered lift/escalator contractors (RCs), trade practitioners and the EMSD to monitor, record, manage and analyse the maintenance records of lifts/escalators in real time through a mobile app or web portal. It facilitates joint monitoring of the relevant works by various stakeholders, thereby uplifting the management and safety standards of lifts and escalators.

Since its official roll-out in November 2022, the Digital Log-books has received high acclaim from the lift and escalator trade, property management sector and RPs, and its adoption rate has been increasing steadily. As at June 2025, more than 65 000 lifts and escalators have adopted the Digital Log-books, accounting for about 80% of the total number of lifts and escalators in Hong Kong. The Digital Log-books will be fully adopted to replace the existing paperbound log-books in the long run. Besides, the EMSD added new functions to the Digital Log-books progressively in the first half of 2025 to facilitate users' management of lifts and escalators:

### New function 1

#### Enhanced dashboard

The dashboard function on the web portal of the Digital Log-books has been enhanced, allowing users to customise the data and time period to be displayed in the dashboard (Figure 6) for easier monitoring of the condition of lifts and escalators.

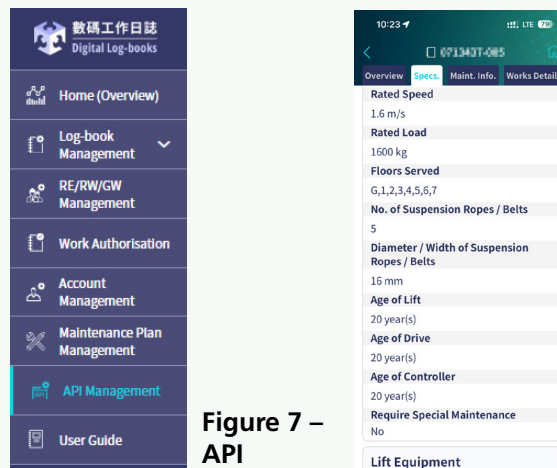


**Figure 6 – Customising the data (red box) and time period (green box) to be displayed in the dashboard**

### New function 2

#### Retrieving lift and escalator specifications via Application Programming Interface (API)

A new function that allows the retrieval of lift and escalator specifications (Figure 8) via the Application Programming Interface (API) (Figure 7) has also been added to the web portal of the Digital Log-books. This function enables the computer systems of RCs and RPs to automatically retrieve the specifications of their lifts and escalators from the Digital Log-books, thereby improving the efficiency of data analysis.



**Figure 7 – API**

**Figure 8 – Specifications of a lift in the Digital Log-books**

#### Activation of the Digital Log-books

The Digital Log-books has been officially launched for use free of charge. For those who are interested in using the Digital Log-books, please email to [digitallogbooks@emsd.gov.hk](mailto:digitallogbooks@emsd.gov.hk). Designated staff of the EMSD will contact you to activate the relevant Digital Log-books upon receipt of the email.

For further details, please call the hotline for the Digital Log-books on 3741 8880 (for enquiries related to information technology) or 9761 6685 (for enquiries related to the operation) between 9am and 6pm from Monday to Friday (except public holidays). Members of the public may also visit this [website](#) to learn more about the various functions and benefits of the Digital Log-books.



Email



Digital Log-books



## News -in- Brief

### Uplifting the Qualification Requirements for Registration as Lift/Escalator Engineers

To enhance the professional standards of the lift and escalator trade, the Lifts and Escalators Ordinance (the Ordinance) clearly stipulates that the qualification requirements for registered lift/escalator engineers (REs) will ultimately be uplifted to registered professional engineer (RPE) level. Upon extensive consultation with various stakeholders, the Commencement Notice in relation to the uplifting of the qualification requirements for becoming REs was gazetted on 22 March 2024. The new qualification requirements will take effect on **31 December 2027**. In other words, starting from 31 December 2027, only **practitioners possessing RPE qualification in the six specified disciplines with two years of relevant experience are eligible to apply for becoming REs**. The existing registration path through attainment of a bachelor's degree in the five specified disciplines with four years of relevant experience will be repealed.

Between now and 31 December 2027, practitioners holding a bachelor's degree specified under the Ordinance with four years of relevant experience can still apply for becoming REs. Practitioners meeting the above requirements should plan ahead and sit for the dedicated written examination as early as possible to secure the RE qualification with a bachelor's degree specified under the Ordinance plus four years of relevant experience before the repeal of the transitional arrangement takes effect.

In the long run, lift/escalator practitioners and those who intend to join the trade should make detailed plans to obtain the RPE qualification. Meanwhile, registered contractors are also encouraged to offer Scheme "A" Training programmes approved by the Hong Kong Institution of Engineers (HKIE) to help their staff attain the RPE qualification. We believe that the tripartite co-operation among the trade, the HKIE and the EMSD will comprehensively enhance the professional standards of the trade and bring about better lift/escalator services to the Hong Kong community.

## News -in- Brief

### Recent Prosecution Cases

From 1 May 2024 to 30 April 2025, the EMSD issued a total of seven summonses to initiate prosecution against seven persons/companies suspected of having contravened the Lifts and Escalators Ordinance. Below is a summary of some of the completed prosecution cases:

#### Case 1

A lift incident occurred in a commercial building in Tseung Kwan O in December 2023. Upon investigation, it was found that a registered lift engineer had failed to ensure that periodic examinations of lifts with load were carried out properly and safely, resulting in injuries to two workers. The EMSD took prosecution action against the registered lift engineer concerned. The registered lift engineer was convicted and fined HK\$12,000.

#### Case 2

In September 2024, two registered lift workers failed to ensure that adequate safety measures were taken during the maintenance works of a lift in a building in Sham Shui Po. As a result, a member of the public accidentally fell into the lift pit, crushing and injuring a worker working there. The EMSD took prosecution action against the two registered lift workers concerned. The registered lift workers were both convicted and each fined HK\$5,000.

#### Case 3

In September 2024, a registered lift worker entered into the log-book a false or misleading works record, falsely claiming that special maintenance works had been carried out for a lift in a commercial building in Mong Kok. The EMSD instituted prosecution against the registered lift worker after investigation. In pronouncing sentence, the court expressed that entering false or misleading works records was a serious offence and imposed a fine of HK\$20,000 on the registered lift worker.

## Responsibilities of Responsible Persons in Lift/Escalator Modernisation

Modernising lifts/escalators not only enhances their reliability and significantly reduces potential safety risks, but also improves energy efficiency. The core responsibilities of RPs in lift/escalator modernisation include:

- Carrying out comprehensive risk assessments to justify in terms of safety the need for modernisation works;
- Implementing modernisation works based on the risk assessment results; and
- Actively coordinating with the registered lift/escalator contractor (RC) and facilitating communication among all parties to ensure the smooth conduct of modernisation works.

The EMSD has issued the [Guidelines for Modernising Existing Lifts](#) (Figure 9) and the [Guidelines for Modernising Existing Escalators](#) (Figure 10) to encourage RPs to upgrade the safety and energy efficiency of their lifts/escalators to meet the prevailing standards. To further ensure the safety of aged lifts that have yet to undergo modernisation, the EMSD has also implemented special maintenance requirements to strengthen the upkeep of critical safety components of aged lifts, and encourages RPs to conduct independent risk assessments regularly to examine the need for modernisation works.

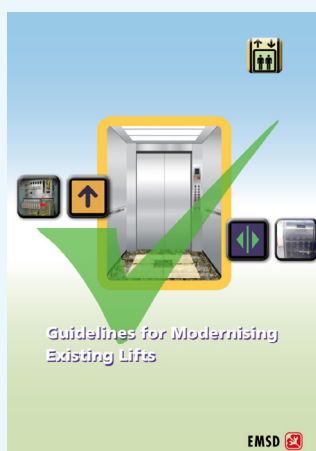


Figure 9 – Guidelines for Modernising Existing Lifts



Figure 10 – Guidelines for Modernising Existing Escalators



### Legal Knowledge



According to the Ordinance, it is the responsibility of RPs to ensure that a lift or an escalator, and all the associated equipment or machinery of the lift or the escalator are kept in a proper state of repair and in safe working order. A person who, without reasonable excuse, contravenes the requirement commits an offence and is liable on conviction to a maximum fine at level 5 (\$50,000).



## News **-in-** Brief

### Safety Measures for Work-at-height



In recent years, the construction industry has seen a number of serious or fatal industrial accidents related to work-at-height. It is noteworthy that many work-at-height accidents involve falls from heights of just 2 metres or less. A considerable number of these accidents involve workers falling from ladders while performing installation, dismantling, maintenance or cleaning tasks, leading to severe injuries or death.

Work-at-height is fairly common in the lift/escalator trade. Before commencing work-at-height, employers/responsible persons of workplaces should eliminate the risk of falling from height, i.e. to conduct task-specific risk assessments for identifying all the related hazards, and to formulate and take all necessary safety precautions/procedures. These precautions/procedures include, but are not limited to, the following:

- 1 Avoiding work-at-height where possible, such as by setting up and using specific tools to allow the work to be done on the ground;**
- 2 Refraining from using ladders for work at any height;**
- 3 Providing and ensuring the use of suitable mobile working platforms when work-at-height cannot be avoided;**
- 4 Providing and ensuring the use of suitable step platforms or hop-up platforms for light-duty work to be carried out in some work environments (e.g. with restrictive space) where mobile working platforms cannot be erected or used; and**
- 5 Taking stringent control measures by conducting comprehensive risk assessment, enforcing a work permit system and implementing safety initiatives for the use of ladders under exceptional circumstances where all of the above measures are not feasible and the use of ladders is unavoidable.**

For further reference, please refer to the newly revised "[Overview of Work-at-Height Safety](#)" issued by the Labour Department.



Overview of Work-at-Height Safety

## Feedback

Your comments and suggestions, whether on editorial style or contents, are most welcome. Tell us how we can improve and make the Lift and Escalator Newsletter a truly informative and interesting publication for you. The Lift and Escalator Newsletter is available on our website at <http://www.emsd.gov.hk>.

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