機電工程署 Electrical and Mechanical Services Department
11th issue December 2022

LIFT & ESCALATOR NEWSLETTER 電梯通訊

Feature Article

Digital Log-books System

The Intelligent Housekeeper for Your Lifts and Escalators

Leveraging blockchain technology, the Electrical and Mechanical Services Department (EMSD) has developed a cloud-based digital log-books platform (the Digital Log-books System) to digitalise the works records of lifts/escalators, with a view to replacing conventional paperbound log-books. The Digital Log-books System enables responsible persons for lifts/escalators (RPs), registered contractors (RCs), trade practitioners and the EMSD personnel to view, record, manage and analyse the works details in relation to the lifts/escalators in real time through a mobile app or web portal. It facilitates the joint monitoring of the relevant works by various stakeholders, thereby uplifting the management and safety standards of lifts/escalators. The Digital Log-books System was rolled out officially on 30 November 2022. Below we will explain the functions of the Digital Log-books System one by one and how they help to provide greater convenience and reassurance in managing lifts/escalators:

Login with iAM Smart or biometric authentication

The mobile app of the Digital Log-books System has incorporated the functions of login with iAM Smart (Figure 1) and biometric authentication (Figure 2) to ensure that only authorized parties can log in to the system and access the information of the lifts/escalators under their management. The authentication functions above not only enable users to log in to the system conveniently, but also protect the relevant information from unauthorised access and tampering, thus better securing the management of the lifts/escalators.

Figure 1 – Login with iAM Smart (Chinese version only)

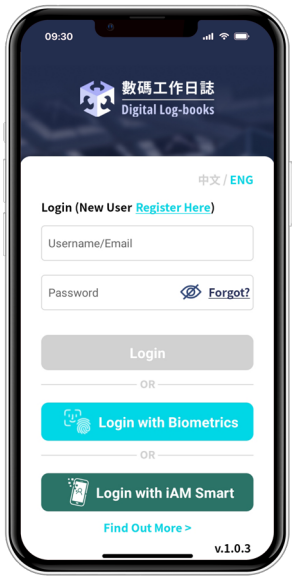


Figure 2 – Login with biometric authentication

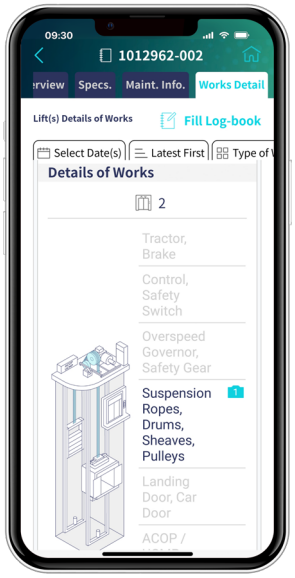


Figure 3 – Diagram of a lift

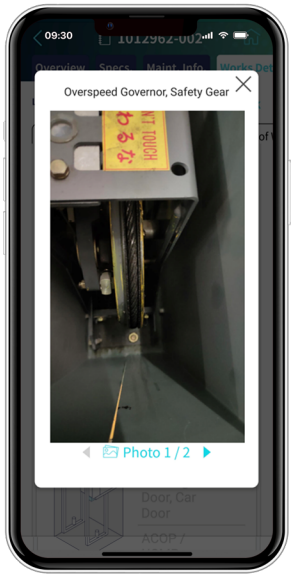


Figure 4 – Photo of lift maintenance works

Visual display

In the mobile app and web portal of the system, previous and latest repair and maintenance records of lifts/escalators are available for users' viewing, and different parts involved in the relevant works (Figure 3) are clearly illustrated by diagrams to facilitate users' understanding of the works records. Workers can attach photos related to the works (Figure 4) when logging the works details in the Digital Log-books System, so that RPs/RCs/EMSD personnel can grasp the condition of the on-site mechanical parts and truly achieve remote monitoring.

Filter function

Furthermore, both the mobile app and the web portal are equipped with filter function. Users can tap "select date" to search for works records of a specific period (Figure 5), or select records by "type of works", such as breakdown, passenger entrapment (Figure 6), etc., to quickly learn about the details of works requiring attention, so as to provide better facility management.

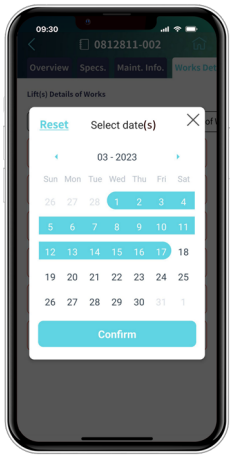


Figure 5 – Filter by date

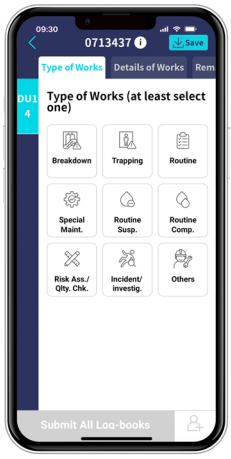


Figure 6 – Filter by type of works

Dashboard

The web portal of the Digital Log-books System features a dashboard that computes all the data collected and displays the relevant reports systematically. Comprising a district map of Hong Kong and various trend charts (Figure 7), the system allows RPs to view the analysis results, such as the breakdown rate of lifts/escalators in each district, incident trends and contractors' performance, greatly reducing the time needed for analysis. In addition, the system provides a list of works information of lifts/escalators for RPs/RCs/EMSD to download and, as necessary, select relevant information for further analysis, providing flexibility for their management work.

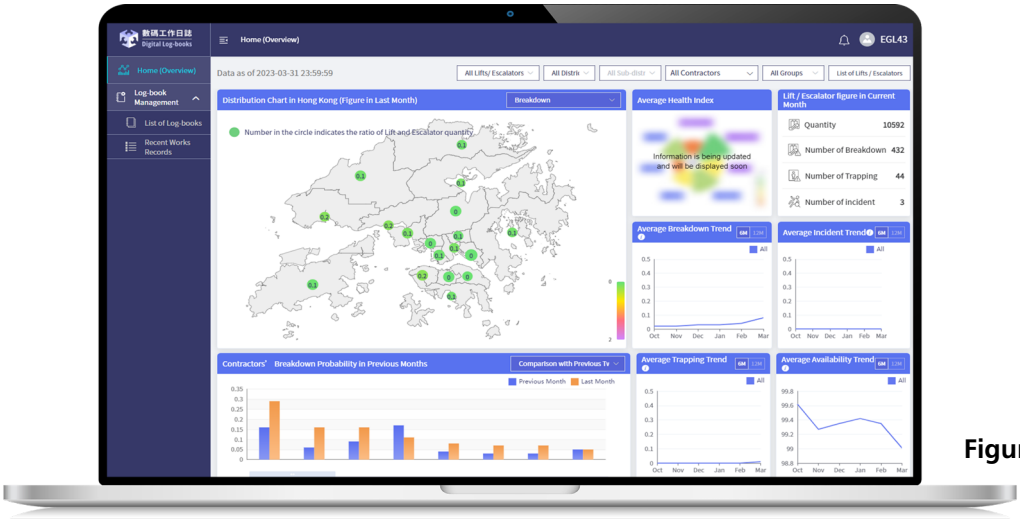


Figure 7 – Dashboard

Smart notification

In accordance with the requirements of the Lifts and Escalators Ordinance (the Ordinance), RPs should arrange for periodic maintenance and examination of lifts/escalators and ensure that the use permits of the lifts/escalators are valid before opening the lifts/escalators for public use. To assist RPs in fulfilling the above statutory requirements, the EMSD has added a smart notification function (Figure 8) to the Digital Log-books System. The system will send alert messages to users through the mobile app and the web portal before the relevant statutory deadlines to remind users to make early arrangements as appropriate.

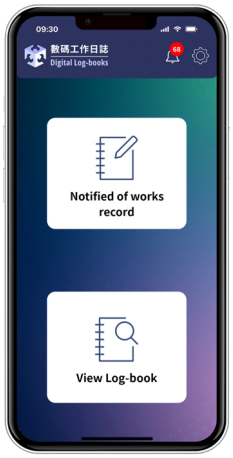


Figure 8 – Number of unread notifications displayed on the bell icon at the top right corner

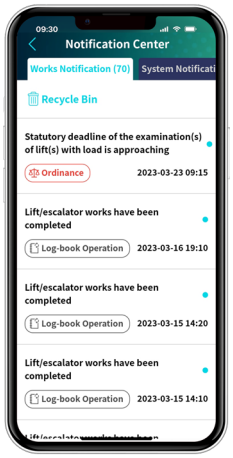


Figure 9 – Smart notifications

Overall, the Digital Log-books System helps users better understand the performance and condition of lifts/escalators and facilitate joint monitoring, smart regulation and effective collaboration, thereby enhancing the management efficiency and reliability of lifts/escalators. The Digital Log-books System has been officially launched and is free of charge. If you would like to use the Digital Log-books System, please contact your RC for arrangement. For further details, please call the hotline for the Digital Log-books System at 3741 8880 (for IT support issue) or 9761 6685 (for operational issue) between 9am and 6pm from Monday to Friday (except public holidays), or visit the following website:

Feature Article Collaboration between BSOMES and EMSD to Develop and Promote the Digital Log-books System

The Building Services Operation and Maintenance Executives Society (BSOMES) was glad to be invited by the EMSD to provide opinions on the development of the Digital Log-books System, as well as joining the sharing and promotion activities of the Digital Log-books System. As early as 2021, representatives from the lift group of BSOMES had already began discussion with the EMSD on the content and detailed requirements of the Digital Log-books System. After rounds of exchanges, communication and collaboration, the preliminary development work of the Digital Log-books System was successfully completed and the trial operation of the system was launched in April 2022. By actively coordinating with the property management companies of BSOMES members, BSOMES had arranged over 800 lifts and escalators to be included in the trial operation. The EMSD actively provided support to participants of the trial operation and set up hotlines and seminars to help resolve problems encountered by the participants and collect their opinions, thereby continuously enhancing the design of the system.

After the system was trialled for over half a year, BSOMES and EMSD co-organised a webinar in November 2022 to share the experience and user opinions obtained from the trial. Around 400 participants, including members of the BSOMES and other stakeholders from the trade, attended the talk. The speakers and the participants were engaged in enthusiastic exchanges and discussions, showing that the trade welcomed and had high hopes for the launch of the Digital Log-books System.

Webinar co-organised by BSOMES and EMSD

Overall, BSOMES strongly supports the EMSD's digitisation of the original paperbound log-books which have been in use since 1987. By applying new technologies such as blockchain and cloud computing, the Digital Log-books System will not only ensure that maintenance information is securely protected from tampering, but also enable the lift/escalator trade and RPs to examine the relevant records anywhere and anytime, as well as better understanding of the maintenance and condition of mechanical parts of lifts and escalators. As the Digital Log-books System also incorporates the eco-friendly concept of paper saving, we believe that its rollout will be warmly welcomed by different members of the society. BSOMES is deeply honoured to take part in the development of the Digital Log-books System, and is looking forward to further contributing to the industry and society in the future.

(Contributed by BSOMES)

News -in- Brief

New Registration Card Design and e-Licence Service

The Lifts and Escalators (General) Regulation stipulates that registered lift/escalator engineers and workers (registered practitioners) who personally carry out any lift/escalator works or supervise any other persons to carry out any lift/escalator works must, at all times at the place at which the works are carried out, carry with them valid registration cards or certificates or any other documentary proof recognised by the Director of Electrical and Mechanical Services.

Starting from 17 October 2022, the EMSD has adopted a new card design for the registration cards issued to registered practitioners. Existing registration cards will continue to be valid until their expiration. The new card design incorporates a QR code on the card surface, allowing RPs or EMSD personnel to verify the registration status of a registered practitioner. For details, please refer to Circular Nos. 10/2022 and 11/2022.

Sample of the New Registration Card

Circular No. 10/2022

Circular No. 11/2022 (Chinese version only)

Sample of e-Licence

Sample of the Verification Page of the e-Licence System

Moreover, to echo with the policy on the provision of e-government services, starting from 20 June 2022, the E&M Trade App (the App) of the EMSD had been updated to enable the new feature of e-licence. The e-licences produced under the App are recognised by the EMSD as valid documentary proof of registration status. Registered practitioners can produce their registration documents under the App with their mobile devices after downloading and registering through their iAMSmart accounts. The aforementioned QR codes for verification of the registration status of the registered practitioners will also be displayed on the e-licences. For details, please refer to Circular Nos. 7/2022 and 8/2022.

Circular No. 7/2022 (Chinese version only)

Circular No. 8/2022

News -in- Brief

Recent Prosecution Cases

Over the past six months, the EMSD issued a total of 15 summonses to initiate prosecution against 6 persons/ companies suspected of having contravened the Lifts and Escalators Ordinance. Below are some of the completed cases:

Case 1

During an inspection in August 2021 in a building in North Point, the EMSD found that the unintended car movement protection means of a lift was not functional. Upon investigation, the EMSD initiated prosecution against the registered lift engineer involved for failure to carry out thorough examination of the lift and for production of a safety certificate that was false or misleading in a material respect. The registered lift engineer was convicted and fined HK$30,000 in total.

Case 2

During an inspection in September 2021 in a building in Tsim Sha Tsui, EMSD found that the unintended car movement protection means of a lift was not functional and the same lift was opened for use by passengers in that condition. Upon investigation, the EMSD initiated prosecution against the registered lift engineer and two registered lift workers involved for failure to ensure that the lift works were carried out properly. The registered lift engineer was convicted of one offence and fined HK$1,800; and both registered lift workers were each convicted of three offences and each fined HK$6,000.

Case 3

During an inspection in November 2021 of two new lifts in a building in Shau Kei Wan, the EMSD found that the registered lift contractor undertaking the installation works of the two lifts failed to obtain type approval from the EMSD prior to commencement of the installation works. Upon investigation, the EMSD initiated prosecution against the registered lift contractor, who was convicted and fined HK$8,000 in total.

News -in- Brief

Development Progress of the Digital Log-books for Lifts and Escalators

The brake system of a lift is one of the most important lift components, and its normal operation is of utmost importance to lift safety. In general, the brake system of a lift comprises of one or more groups of compression springs, brake arms and brake coils. When a lift moves, the lift's traction sheave rotates, and an appropriate level of voltage would be generated to the brake coil. This will produce a magnetic force which will push apart the brake arms, resulting in the detachment of the brake linings from the brake drum. When the lift reaches its destination, the traction sheaves will stop rotating and the supply of electricity to the brake coil will be cut off at the same time. Without generation of the magnetic force, the compression springs will push the two brake arms on the left and right and thus the brake linings on top of them against the brake drum, keeping the lift at a halt.

However, when the electrical components start to age or wear out, the voltage sent to the brake coil during operation of the lift may not be sufficient for the brake arms to open fully, causing constant rubbing between the brake drum and the brake linings when the former rotates. The brake linings could then overheat and become less effective or ineffective as a result. Besides, aging and worn out electrical components may cause problems such as electrical leakage, fire or malfunction of control circuitries.

Periodic measurement of the holding voltage of the brake coil and its trend is an effective way to understand the condition of the electromechanical parts and it helps maintenance personnel to carry out appropriate follow-up action and timely replacement to prevent incidents. The EMSD issued a circular on 27 September 2022 to require Registered Lift Engineers (RLEs) to report via the e-platform the holding voltage across brake coils as measured during periodic examinations that take place on or after 28 October 2022, and to request RCs to follow up cases with irregular values identified without delay in order to ensure proper operation of the brake systems of lifts. For details, please refer to Circular No. 9/2022.

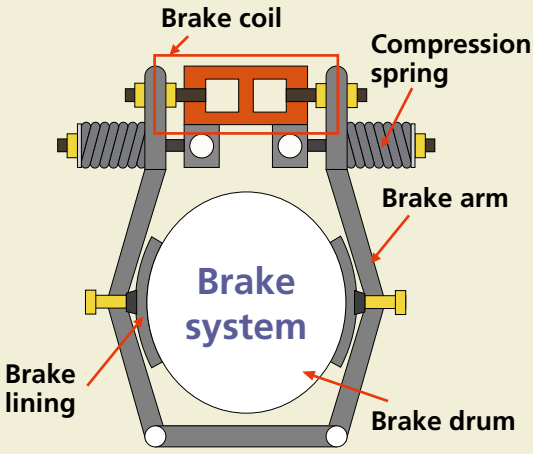


Illustration of the brake system of traditional lifts

Measuring holding voltage of the brake coil

Circular No. 9/2022

Tips on the Safe Use of Escalators

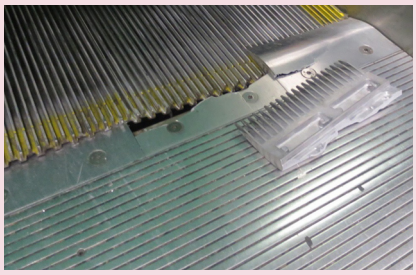
Holding the handrail and stop looking at your phone helps you stay balanced;
Standing within the yellow lines of steps keeps you safe from step collision incidents.

News -in- Brief

What is "Step Collision"?

A set of comb plate is installed at the front edge of each landing plate of an escalator. During the normal operation of an escalator, the comb teeth mesh with the surface slots of escalator steps to prevent foreign objects from being dragged into the machinery. However, when the steps and/or comb plate dislocate, the steps may collide with the comb plate, leading to a step collision accident.

When a step collision incident occurs, the safety devices of the escalator would be activated to stop the escalator to safeguard the safety of passengers. However, such incident produces loud noises and broken pieces of equipment, which tend to draw the public's attention.

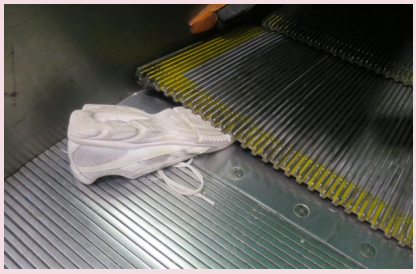


Step collision incident

Causes of step collisions

Although "step collisions" can be caused by multiple reasons, most of them are caused by external objects. Here are some common causes:

1. When passengers' clothes or shoes are too close to the front edge of escalator steps, the clothes or shoes may get stuck between two steps and cause step dislocation. When the dislocated steps reach the end of the escalator, they would collide with the comb plate.
2. When passengers drop small objects (e.g. coins, keys) on the steps, the objects may be carried to the end of the moving escalator and get stuck between the steps and comb plate, causing the latter to dislocate and then collide with the steps.



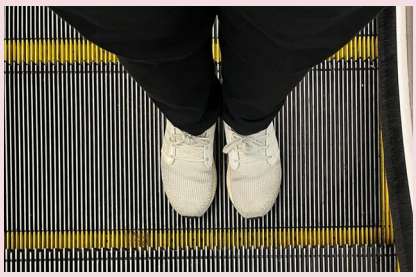
Step collision caused by a shoe stuck between steps

How to reduce occurrence of step collisions

In view of the above points, to prevent step collision incidents, passengers using escalators should:

1. Stand within the yellow lines of the escalator steps to ensure adequate distance is kept from the edge of the steps; and
2. Take good care of their own belongings.

The EMSD issued a poster and a video in November 2022 to explain the causes of step collision and remind passengers on the precautions to be taken when using escalators. Readers are welcome to share and display the poster and video.



Standing within the yellow lines on the escalator step

Poster (Chinese version only)

Video (Chinese version only)

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 .

The Editor, Lift and Escalator Newsletter
Electrical and Mechanical Services Department
3 Kai Shing Street, Kowloon Bay
Tel : 1823 (Call Centre)
Fax : 2504 5970
Email : info@emsd.gov.hk

機電工程署 EMSD