

HOME IN FOCUS

LIFTS NEED CARE TOO

A spate of lift malfunctions last year led to maintenance and safety regulations being tightened by the Building and Construction Authority for the 6,000 escalators and 63,000 lifts in Singapore. As they come under the public eye, The Straits Times turns the lens on how Otis – one of the foremost manufacturers of lifts and escalators in the world – takes care of its installations.



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Executive Photojournalist

After lunch, the 280m-tall Republic Plaza is bustling with people returning to work. With 15 double-deck lifts serving 66 floors, the elevators give off an almost continuous whirr and chime as they come and go.

Designed to save space, double-deck lifts, which are made up of two stacked cars in a single lift shaft, let people board at odd and even floors simultaneously.

At the heart of this activity, Otis service foreman Hou Heng Choon, 57, and technician Mohd Iskandar Mohamad Sopi, 31, are in the lift motor room preparing to shut down one of the lifts for its scheduled inspection.

The procedure is strict, reminiscent of a missile launch sequence in the movies – except in reverse.

Safety checklists are completed. Thick, rubber gloves are examined for leaks and then put on.

"Power off," shouts Mr Mohd Iskandar.

"Power off," confirms Mr Hou.

The breaker is tripped, and both men shackle it to prevent anyone from turning it back on as they inspect the high-voltage electrical components in the room.

That done, they undo the locks, turn the breaker back on, and move on to the next part of their work.

This involves hitching a ride on the top of the lift car as the two men go from floor to floor, checking the moving door parts at every landing to ensure that they are all working smoothly.

The day ends in the lift pit, where they inspect the lift buffer, a device

designed to reduce the impact should the lift car fail to stop at the bottom-most floor.

With thousands of lifts and escalators of various types and brands in Singapore, technicians such as Mr Hou and Mr Mohd Iskandar are kept busy through the day, as maintenance is scheduled around the tenants' usage patterns.

A routine double-deck lift inspection takes two to three hours – longer if the technicians have to perform repairs or retrieve items that have fallen into the pit.

The tightening of lift and escalator maintenance and safety regulations by the Building and Construction Authority includes strict specifications that a lift may move only when its doors are closed and locked, and that cars must stop within 10mm of the floor.

Having worked with Otis for 25 years, Mr Hou was once responsible for testing and commissioning lifts according to regulatory requirements and customer specifications, before the lifts could be turned over for public use.

Attached to Republic Plaza as a foreman since 2005, he is familiar with stray items that can clog the lift door sills – stones, keys, even food.

Users who try to keep lift doors open with foreign objects also risk misaligning the doors and disrupting the sensors, he says.

His main concern, however, is for escalator user safety.

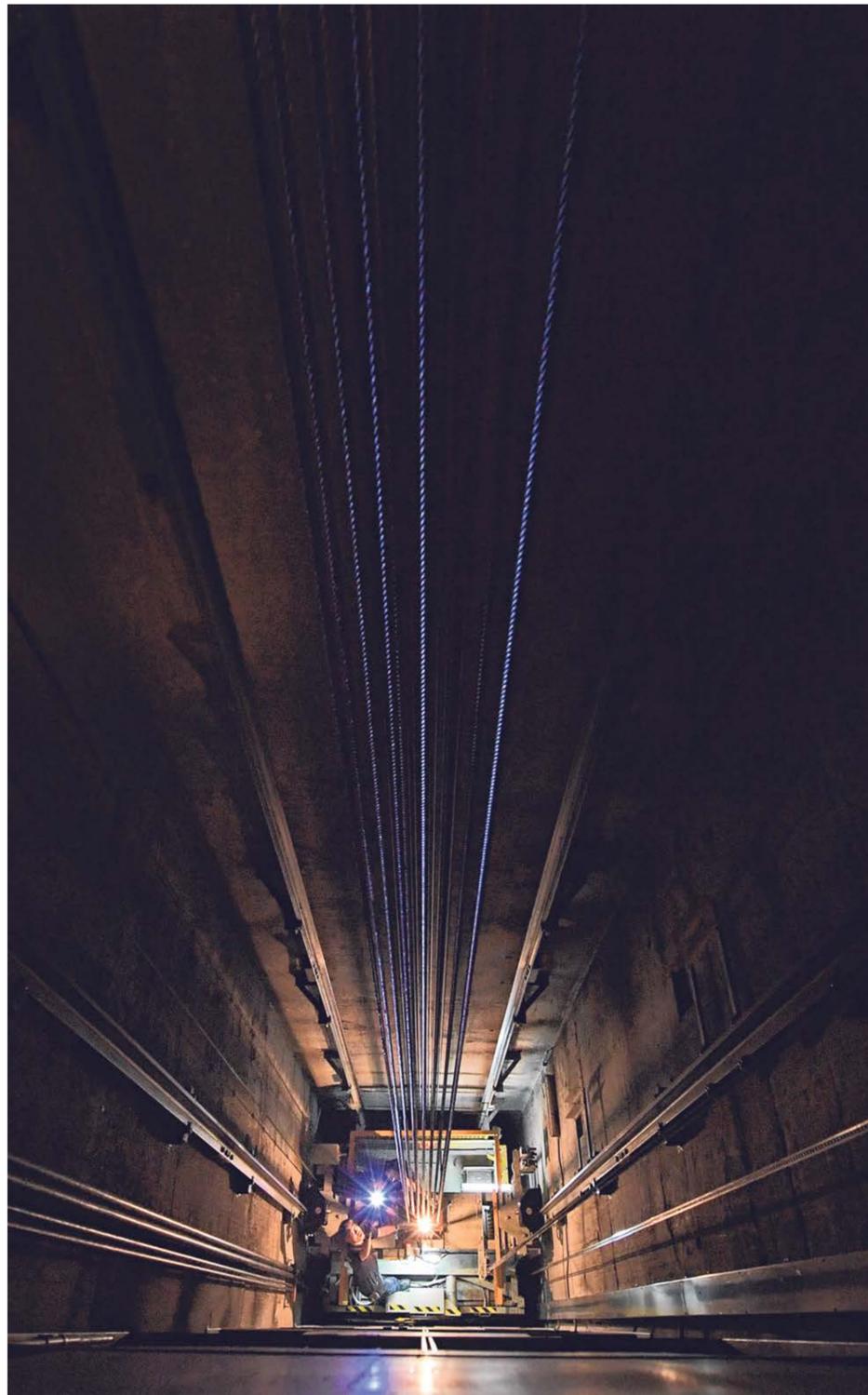
"Technicians have procedures that keep us safe, but users tend to take safety for granted," he says.

"On an escalator, soft rubber shoes could get caught between moving steps," he notes.

"Passengers balancing baby strollers on the steps by the front or back wheels; children running up and down without holding on to the handrails... all these things are very dangerous."

Lifts are run on voltages of up to 400 volts and currents of up to 40 amps.

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Technician Mohd Iskandar Mohamad Sopi inflating a high-voltage glove to check it for tears or leaks before putting it on. This insulated glove, part of his personal protection equipment, prevents accidental electrocution on the job. Lifts are run on voltages of up to 400 volts and currents of up to 40 amps.



A special lifting device being used to open the floor plate bolt of an escalator at Republic Plaza. This is the first step that technicians must take in order to gain access to the escalator pit, where the servicing work will take place.



Locking the circuit breaker in "off" mode is a must before service foreman Hou Heng Choon (left) and technician Mohd Iskandar can start work in the lift motor room at Republic Plaza. This step ensures the system does not get switched on while they are working on high-voltage components.



The two men start their maintenance routine in the lift motor room by checking the condition of the lift machinery and ropes. The procedure includes thoroughly testing the high-voltage circuits of the lift controller – the "brain" that controls the lift's movements.



The next stage involves taking a ride on top of the lift car as they check various moving parts. As the lift travels from floor to floor, they inspect the door sensors and rollers, while making sure that no debris has accumulated in the door sill. The door was left open for this photo to be taken; lift doors are normally closed during maintenance work, for safety reasons.



Once a month, Otis technicians descend on Fortune Centre before dawn breaks to do a routine check on the escalators. The floor plate is removed and steps are dismantled. Handrails and safety switches are inspected, while moving parts are lubricated (below). If all is in order, the parts are reassembled in time to turn the escalators on for the morning crowd.



An escalator technician using an inspection device to move the steps in the desired direction. As a safety feature, he must press the green "Start" button (at his left) together with an "Up" or "Down" button to make the steps move.



Technician Loh Fah Leong wiping excess oil from the inside of the escalator pit at Fortune Centre after completing the inspection. The 51-year-old has 23 years of experience in the repair and upkeep of lifts and escalators.

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