

Updates and Upcoming Initiatives

14 December 2021

Presented by :

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Engineering and Technical Department



Agenda

1. Recent circulars
2. Reporting of lift and escalator incident and preservation of site after incident
3. Account management for firms



1) Recent circulars



Recent circulars

1) Good practices guide for lift owners

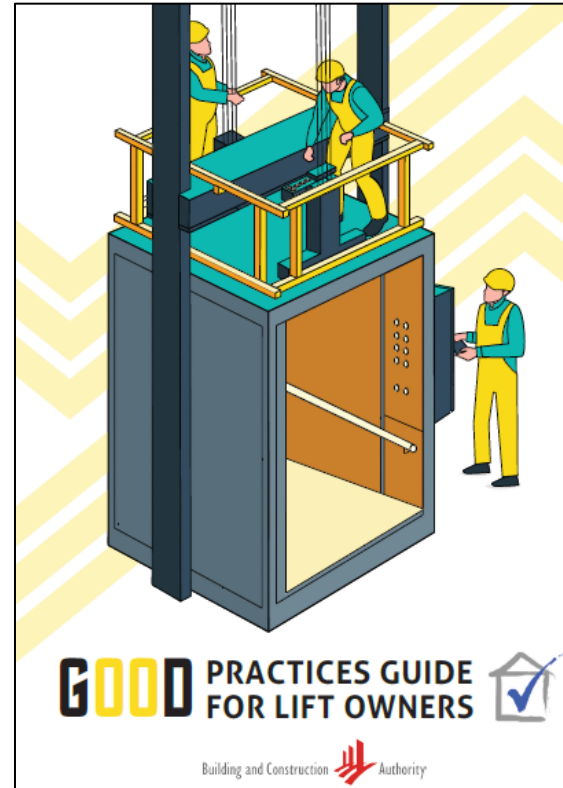
Published date: 17 March 2021

Target audience: Lift owners & building owners

Objectives:

- Identify **good practices** in procuring, operating and maintaining lifts, so that lift owners can make informed decisions and take necessary actions towards ensuring the safety of their lifts
- Help **improve relationship and work arrangement** between lift contractors and owners

Synopsis: Cover areas on the **statutory duties** of lift owners, steps that owners can take to **ensure that their lifts are working properly**, **selection of a maintenance contractor**, and **modernisation** of old lifts



Chapters of Guide:-

- I. Statutory duties of the owners
- II. Considerations when getting a new lift
- III. How to select a maintenance contractor and servicing package
- IV. Good practices for lift safety
- V. Importance of maintenance and repair
- VI. Advice on modernisation for old lifts



Link to circular: <https://www.corenet.gov.sg/document-152309.aspx>



Link to guidebook: https://www1.bca.gov.sg/docs/default-source/docs-corp-regulatory/lift-escalators-e-guide/good-practices-guide-for-lift-owners.pdf?sfvrsn=f52c16be_8

Do not circulate to external parties without BCA's prior consent

2) Safety of workers during repair or maintenance of lifts

Published date: 7 April 2021

Target audience: Lift owners, contractors (including lift contractors) & lift maintenance specialists

Objective: Reminder on adopting necessary **measures to ensure safety of workers** and prevent similar accidents from recurring

Synopsis:

- Lift owners should ensure that lift maintenance **environment is safe**
- Lift contractor to have the **necessary expertise** to carry out the work and has taken adequate safety and health measures
- **Communication protocol** must be established to ensure clear communication between the workers on the lift car top, and the supervisors and other workers involved in the work
- Workers carrying out lift maintenance or repair works must adhere strictly to the **safe work procedures (SWP) or safety rules** implemented

Technician dies after getting trapped in lift shaft in North Bridge Road building



27 Feb 2021 07:23PM
(Updated: 28 Feb 2021 12:12A)



Police and SCDF vehicles at 452 North Bridge Road on Feb 27, 2021.

Source: Channel News Asia



Link to circular: <https://www.corenet.gov.sg/document-152330.aspx>

3) Safe management measures in lifts and lift lobbies

Published date: 31 May 2021

Target audience: Lift owners

Objective: Implement **safe management measures** in lifts and lift lobbies

Synopsis:

- Put up **signage** to remind lift users of SMM when using lifts
- Ensure **sufficient ventilation** in lifts. If the lift ventilation fan is not functioning properly, lift owners should take steps to stop operation of lift to rectify the issue
- **Clean and disinfect** lifts and lift lobbies frequently, especially high touch areas such as lift buttons and rails, according to NEA guidelines
- If the lift operation can be controlled to bypass floors, enable such a function to bypass floors if lift is full
- Provide **hand sanitisers** at lift lobbies and/or in lifts

For those who use elevators.

Since many people use the elevator,
Please take measures against infection and use it safely.



Source: Hitachi Building Systems Business Unit



Link to circular: <https://go.gov.sg/bca-circular-reminder-lift-smm>

4) Lift maintenance outcomes guidebook

Published date: 1 June 2021

Target audience: Lift contractors and lift owners

Objectives:

- Provide industry with more details through illustrations on the **maintenance requirements** specified in Part 1 of the First Schedule of the Building Maintenance and Strata Management (Lift, Escalator and Building Maintenance) Regulations 2016.
- Help lift owners better understand **performance of lifts**

2. Door protective devices

Check

Ensure that upon activation of any door protective devices and sensors (e.g. lift curtain, door safety edge), the doors **must** reopen. 



Light curtain BCA

Door safety edge

Prevent

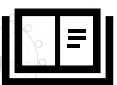
Faulty door protective devices and sensors could potentially hurt lift users if the doors do not reopen upon activation. 



Faulty door protective device BCA



Link to circular: <https://www.corenet.gov.sg/document-152361.aspx>



Link to guidebook: https://www1.bca.gov.sg/docs/default-source/docs-corp-regulatory/lift-escalators-e-guide/lift-maintenance-outcome-guidebook.pdf?sfvrsn=a3422f66_4

5) Statutory duties for annual testing of lifts and escalators

Published date: 1 December 2021

Target audience: Lift and escalator service contractors & SPEs in specialized branch of lift and escalator engineering

Objectives:

- Remind L&E contractors and SPEs of their **statutory duties during annual examination, inspection and testing of equipment**
- Inform the implementation of the **Annual Testing and Inspection report** which covers the safety critical components of lifts, and serves as guidance to lift testing contractors and SPEs. Reports will have to be completed for lifts with PTOs expiring on/after 30 April 2022

Synopsis: All lift service contractors and SPEs would have to provide the Annual Inspection and Testing Reports for the 5-yearly full-load and the annual no-load tests for each lift that they have inspected and tested to the lift owners



Link to circular: <https://go.gov.sg/bca-circular-annual-testing-report-pt0-renewal>



Link to Annual Inspection and Testing Reports: <https://www1.bca.gov.sg/regulatory-info/lifts-escalators/lifts-and-escalators-legislation/forms-and-certificates>

6) Duties of SPE

Published date: 1 December 2021

Target audience: SPEs in specialized branch of lift and escalator engineering

Objective: Remind SPEs of their **duties during the annual examination, inspection and testing of lifts and escalators** for the purpose of renewal of a Permit To Operate (“PTO”), and during the testing and commissioning of lifts and escalators

Synopsis:

- Remind L&E testing contractors and SPEs that the examination, inspection and testing of L&E must be conducted in the presence of an SPE
- For all new lifts and escalators, a PE in mechanical or electrical engineering (PE(M/E)) is required to issue a Certificate of Supervision of Installation of Escalator(s)/Lift(s) (CSC04 form). Should the installed lift or escalator fail to meet the Code/standard, a modification or waiver must be obtained from the Commissioner of Building Control



Link to circular: <https://go.gov.sg/bca-circular-spes-duties-reminder>



Link to Annual Inspection and Testing Reports: <https://www1.bca.gov.sg/regulatory-info/lifts-escalators/lifts-and-escalators-legislation/forms-and-certificates>

2) Reporting of lift and escalator incident and preservation of site after incident



Reporting incidents and preservation of site

Requirements to inform BCA on incidents under BMSM (LEBM) Regulations 2016

- Regulations 14(2) and 26(2): when an incident involving any part of a lift or escalator occurs, **the owner and the service contractor who most recently carried out any servicing work on the lift or escalator must each inform BCA as soon as practicable**

Preservation of site requirements under BMSM (LEBM) Regulations 2016

- Regulations 14A and 26A - **no person shall, without the consent of the Commissioner of Buildings (COB), alter, replace, remove or add to any machinery, equipment or article which may have contributed to the cause of the incident or modify the scene of the incident.** The owner must also take all reasonable measures to prevent any person from doing so.

Incident Reporting Procedures

- Reporting to be carried out through the **BCA incident reporting numbers - 9088 7289 or 9782 7296**
- **Submit an incident report within 24 hours** using the form found at BCA's corporate website

***BMSM (LEBM) - Building Maintenance and Strata Management (Lift, Escalator and Building Maintenance)**



Link to incident notification webpage: <https://www1.bca.gov.sg/regulatory-info/lifts-escalators/lifts-and-escalators-legislation/incident-notification>

Link to incident reporting form: <https://www1.bca.gov.sg/regulatory-info/lifts-escalators/lifts-and-escalators-legislation/forms-and-certificates>

Reporting incidents and preservation of site

Incidents to be reported to BCA as soon as practicable and site must be preserved:

Lift incidents




- a person dies or is injured, and the death or injury of a person involving a lift, or any associated equipment or machinery of a lift;
- the main drive system fails due to a reason other than the failure of the main power system of the lift;
- a suspension rope breaks;
- a brake, overload device, safety component or safety equipment fails;
- an interlocking device for any door of the lift-way fails due to a reason other than the safety contacts not making electrical contact;
- an interlocking device for any door of a lift car fails due to a reason other than the safety contacts not making electrical contact.

Escalator incidents

- a person dies or is injured, and the death or injury involves an escalator, or any associated equipment or machinery of an escalator;
- the main drive system of an escalator fails due to a reason other than the failure of the main power system;
- a brake, overload device, safety component or safety equipment fails.

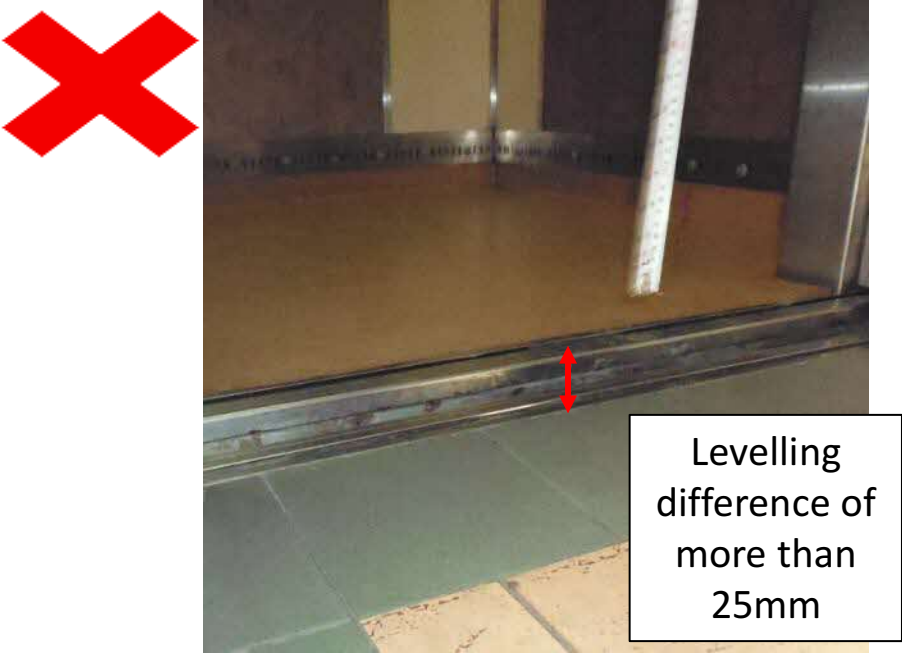
Stopping operation of lift

An owner of a lift **must immediately stop the operation of the lift** if it is in a condition that is likely to be dangerous, or likely to cause injury to users. In the event that the contractor is unable to rectify the issue immediately, owners should stop the operation of the lift.

Lift conditions that require immediate suspension of operation – Door open button and door protective devices	Example
<p><u>For a lift system which contains safety door edges and light curtains (2D or 3D sensor):</u></p> <ul style="list-style-type: none">• Car door open button, safety door edges and light curtains are not functional at the same time. <p><u>For lift system which contains only safety door edges as a door protective device:</u></p> <ul style="list-style-type: none">• Both car door open button and safety door edges are not functional at the same time. <p><u>For lift system which contains only light curtains (2D or 3D sensor) as a door protective device:</u></p> <ul style="list-style-type: none">• Both car door open button and light curtains are not functional at the same time.	   <p data-bbox="1600 801 1926 998">Car door open button, safety edge and light curtain are not functional</p>


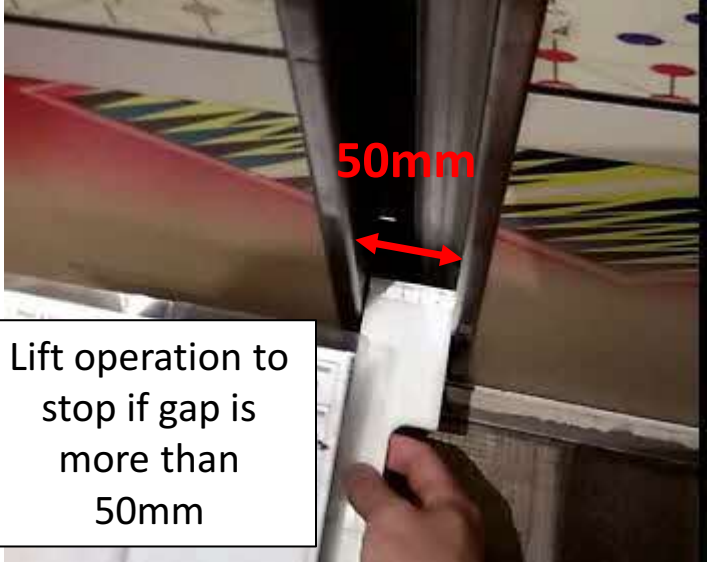
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Lift conditions that require immediate suspension of operation – Stopping or level accuracy	Example
The stopping accuracy of the lift car floor is more than $\pm 25\text{mm}$	 <p>Levelling difference of more than 25mm</p>


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Lift conditions that require immediate suspension of operation – Lift car doors and lift landing doors	Example
Lift car movement occurs when there is an obstruction of more than 50mm placed between the car doorway.	  <p data-bbox="1643 925 1974 1146">Lift operation to stop if gap is more than 50mm</p>

Stopping operation of lift

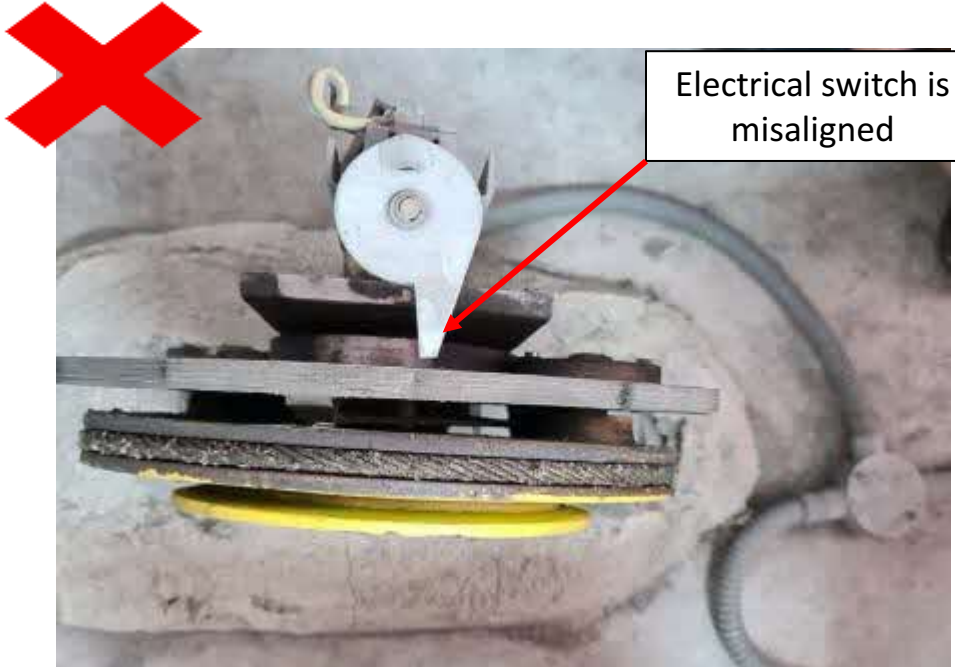
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Lift conditions that require immediate suspension of operation – Brakes of lift machine and drive	Example
<ul style="list-style-type: none">• Performance of brake drum is affected due to contamination of oil or grease.• Performance of brake pad is affected due to contamination of oil or grease.• Brake plunger movement is restricted or stuck.• Additional brake for UCMP* is not working or operational.• Brake system has been tampered electrically or mechanically.	

*UCMP stands for “Unintended car movement protection” to detect and stop unintended lift car movement away from the landing with the landing door not in the locked position and the lift car door not in the closed position


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Lift conditions that require immediate suspension of operation – Overspeed governor	Example
<ul style="list-style-type: none">• Movement of the parts in the governor are restricted, e.g. the pawl is not able to engage the ratchet wheel.• Electrical switch of the overspeed governor is misaligned, bypassed, missing or has been tampered• Overspeed governor did not function as intended.• Overspeed governor was not able to activate the safety gear during inspection or operation.	 <p data-bbox="2040 622 2372 729">Electrical switch is misaligned</p>

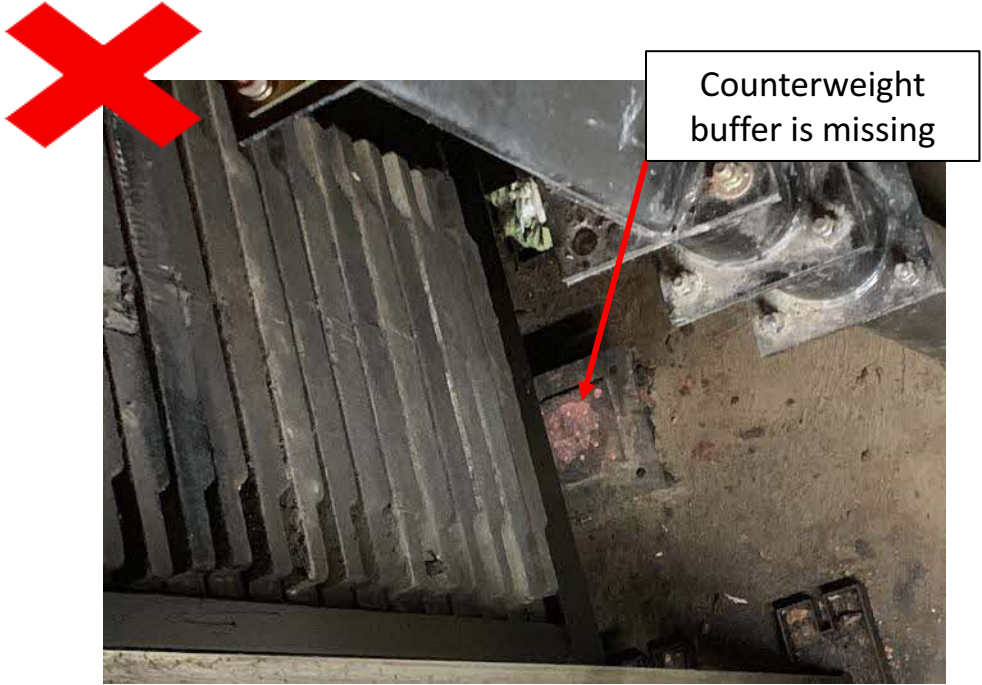
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Lift conditions that require immediate suspension of operation – Main rope and compensation rope	Example
<ul style="list-style-type: none">• There are broken wire rope(s) from the machine, pulley, counterweight or rope termination.• There are dislodged wire rope(s) from machine, pulley, counterweight or rope termination.• Compensation rope is broken or missing.• Compensation chain is broken or missing.	 <p data-bbox="2186 1199 2433 1235"><i>Source: Internet</i></p>

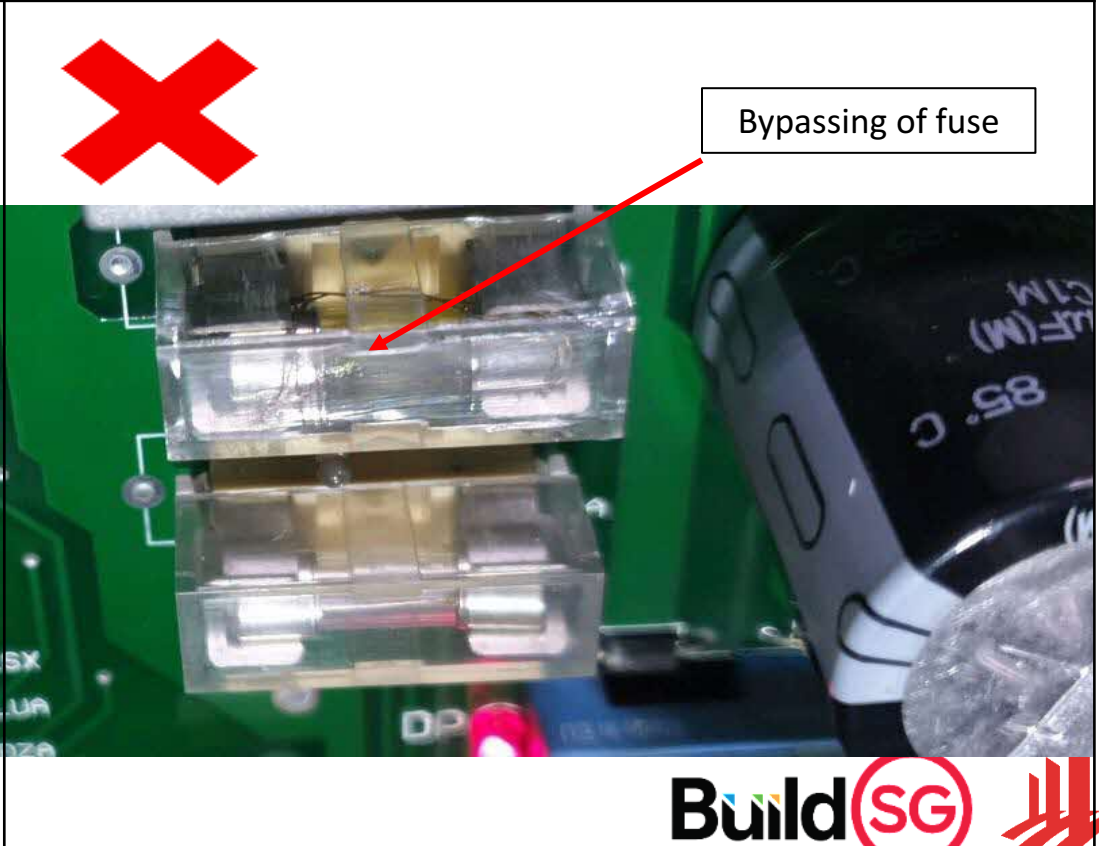
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Lift conditions that require immediate suspension of operation – Buffer	Example
<ul style="list-style-type: none">• Car buffer is missing.• Counterweight buffer is missing.	 <p>Counterweight buffer is missing</p>


Stopping operation of lift

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Lift conditions that require immediate suspension of operation – Controller and electrical systems	Example
<ul style="list-style-type: none">Any safety switches found to be missing, damaged, bypassed or tampered with and likely to lead to unsafe conditions.Failure of controller to initiate immediate stopping of lift car and prevent lift movement under any condition that is unsafe to passengers and maintenance workers.Failure of controller, electronic and electrical systems, wirings and circuit boards (including printed circuit boards containing any contact or electronic component) to function as intended when lift is in operation, resulting in an unsafe condition.	 <p>The image shows a close-up of a green printed circuit board (PCB) with several clear plastic fuse holders. A large red 'X' is overlaid on the top-left portion of the image. A red arrow points from a callout box labeled 'Bypassing of fuse' to a specific fuse holder where the fuse appears to be bypassed or tampered with. The PCB has various components and labels, including '85°C' and 'M(F)(M)'. The 'Build SG' logo and the BCA logo are visible in the bottom right corner of the image area.</p>


Stopping operation of lift

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Lift conditions that require immediate suspension of operation – Guide shoes or rollers of lift car and counter weight	Example
<ul style="list-style-type: none">• For lift using guide shoes, more than 1 of the guide shoes for the lift car are missing.• For lift using rollers, more than 1 of the rollers for the lift car are missing.• For lift using guide shoes, more than 1 of the guide shoes for the counterweight are missing.• For lift using roller guide, more than 1 of the rollers for the counterweight are missing.	 <p>Missing guide shoes</p>


Stopping operation of lift

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Lift conditions that require immediate suspension of operation – Safety gear	Example
<ul style="list-style-type: none">• Safety gear is not maintained (e.g. missing safety wedges, linkages or springs).• Safety gear, when activated, did not stop and hold the lift car within the allowance distance with prescribed standards.• Safety gear, when activated, did not stop and hold the counterweight within the allowance distance with prescribed standards.	 <p>The photograph shows the internal safety gear mechanism of a lift. A large red 'X' is overlaid on the top left of the image. A red arrow points from a white callout box on the right to a red cylindrical component. The callout box contains the text: "Safety gear will not function when activated".</p>

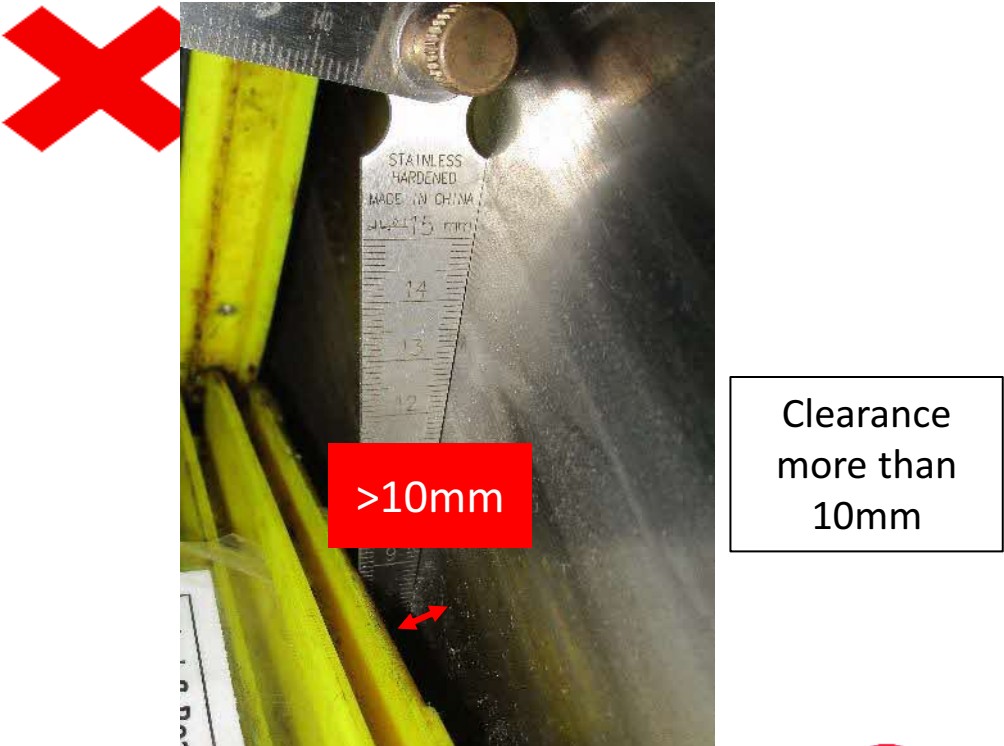
Stopping operation of escalator

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Escalator conditions that require immediate suspension of operation – Handrail system	Example
No movement of handrail when the escalator steps are moving.	 <p>Handrail not moving</p>

Stopping operation of escalator


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Escalator conditions that require immediate suspension of operation – Operational clearance	Example
Clearance between skirt panel and escalator step is more than 10mm on either side	 <p>Clearance more than 10mm</p>



Stopping operation of escalator


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Escalator conditions that require immediate suspension of operation – Signage and Indicator	Example
<p>Missing or damaged demarcation plates resulting in a gap of width exceeding 10mm between the steps OR a gap of width exceeding 10mm between the step and the skirt panel.</p>	<p data-bbox="1370 578 1559 725">✘</p>  <p data-bbox="2125 768 2397 939">Missing demarcation plate</p>



Stopping operation of escalator

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Escalator conditions that require immediate suspension of operation – Emergency stop switch	Example
<ul style="list-style-type: none">• Failure of the emergency stop switch to stop escalator movement upon activation.• Any bypass of the emergency stop switch.	



Stopping operation of escalator

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Component	Escalator conditions that require immediate suspension of operation
Driving machine, brakes, sprocket and auxiliary brake	<ul style="list-style-type: none">• Failure of auxiliary brake to function as intended.• The brake plunger movement is restricted or stuck.• Brake system and safety switches have been tampered electrically or mechanically.
Safety switch and sensor	<ul style="list-style-type: none">• Failure of any of the safety switch (skirt panel switch, escalator comb switch, step sag switch, step up thrust switch, missing step detection device, floor plate or access cover detection switch, drive chain tension and step chain tension monitoring switch) to stop escalator movement upon activation.• Safety switches and sensors have been tampered electrically or mechanically.

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Component	Escalator conditions that require immediate suspension of operation
Excessive speed and Unintentional reversal protection	Escalator does not stop upon the immediate reversal of an upriding escalator or the overspeed of a downriding escalator.
All escalator parts	<ul style="list-style-type: none">• Chains that are worn off or loosened.• Chain elements that are deformed or missing (eg. handrail, step chain, main drive chain).
Controller and electrical system	<ul style="list-style-type: none">• Any safety switches found to be missing, damaged, bypassed or tampered with and likely to lead to unsafe conditions• Failure of controller to initiate immediate stopping of escalator and prevent escalator movement under any condition that is unsafe to passengers and maintenance workers.• Failure of controller, electronic and electrical systems, wirings and circuit boards (including printed circuit boards containing any contact or electronic component) to function as intended when escalator is in operation, resulting in an unsafe condition.

3) Account management for firms



Account management for firms

- Regular engagement with L&E contractor firms
- Objectives:
 - i. Dedicated BCA officers assigned as single POC
 - ii. Aim to establish good relationship and understanding for better sensing of their issues and pain points
 - iii. Raise awareness on BCA's initiatives
- Account managers will be contacting the management team of the company and will greatly appreciate your support



Outcomes



Improve
maintenance
compliance



Enhance
management
practices



Improved sensing of
issues and pain
points



Thank you

