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### Icons Used In This Guide

- **REVIEW** slides
- **INDIVIDUAL ACTIVITY**
- **ASK**
- **WRITE**
- **CLASSROOM ACTIVITY**
- **Multimedia**
- **SMALL GROUP ACTIVITY**
- **REFER** participants to

### Agenda

<table>
<thead>
<tr>
<th>Topic #</th>
<th>Topic Title</th>
<th>Duration</th>
</tr>
</thead>
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<tr>
<td>1</td>
<td>Overview</td>
<td>20 Minutes</td>
</tr>
<tr>
<td>2</td>
<td>Types of Maintenance</td>
<td>30 Minutes</td>
</tr>
<tr>
<td>3</td>
<td>Barricades</td>
<td>30 Minutes</td>
</tr>
<tr>
<td>4</td>
<td>Fall Protection</td>
<td>10 Minutes</td>
</tr>
<tr>
<td>5</td>
<td>Landing the Car</td>
<td>30 Minutes</td>
</tr>
<tr>
<td>6</td>
<td>Documentation</td>
<td>20 Minutes</td>
</tr>
<tr>
<td>7</td>
<td>Field Trip</td>
<td>80 Minutes</td>
</tr>
<tr>
<td>8</td>
<td>Summary</td>
<td>30 Minutes</td>
</tr>
</tbody>
</table>

**Total Time:** 240 Minutes
Overview

Purpose  The purpose of this module is to:

Provide the participant with a conceptual understanding of safety practices for elevator inspection and maintenance.

Objectives  At the end of this lesson, the transit elevator/escalator trainee will be able to:

- Identify general safety practices
- Relate safe work practice to elevator maintenance
- Explain safe practices related to the use of scaffolding
- Identify protocol for authority PM documentation

Materials

Mandatory  Make sure you have the following

- PowerPoint Presentation
- Coursebook
- Quizzes
- Pencils

Optional  You may also want the following for optional activities:

- Chalk board with chalk, large paper with marker, etc.
- Internet connection
- Lab, simulator or out of service elevator
- Specific transit authority related procedures and guidelines
- Transit authority preventative maintenance checklist
- Elevator Industry Field Employees’ Safety Handbook
**DO**

- Follow your transit agency’s procedures regarding proper Preventive Maintenance (PM) and regular inspections.

**SAY**

- **In your own words:**
  - Follow your transit agency’s procedures regarding proper Preventive Maintenance (PM) and regular inspections.
  - **Advance** Each agency will have its own rules regarding the period for preventive maintenance procedures that will be based on **Advance** original equipment manufacturers’ (OEMs) recommendations, **Advance** weather conditions, **Advance** number of riders, and **Advance** amount of run time for each unit.
  - **Advance** Preventive maintenance includes the minor adjustments and minor repairs due to wear and everyday usage.

**Materials Needed**

- ✓ PPT slide 7

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### Instructor’s Notes

- In your own words:
  - Follow your transit agency’s procedures regarding proper Preventive Maintenance (PM) and regular inspections.

  **Advance** Each agency will have its own rules regarding the period for preventive maintenance procedures that will be based on **Advance** original equipment manufacturers’ (OEMs) recommendations, **Advance** weather conditions, **Advance** number of riders, and **Advance** amount of run time for each unit.

  **Advance** Preventive maintenance includes the minor adjustments and minor repairs due to wear and everyday usage.
### Instructor’s Notes

- **In your own words:**
  - The disadvantages of reactive maintenance are decreased equipment life expectancy, increased labor costs for repairs because failures will most likely be more extensive, and increased capital cost for premature equipment replacement. Additionally, the lack of maintenance will increase the probability of accidents and lawsuits.

- **Advance**
  - Reactive maintenance could, unfortunately, lead to this.
  - "The elevators just stopped working...we didn't do anything!"
  - Michigan Central Station in Detroit, Michigan, U.S.A.

### Materials Needed

- ✓ PPT slides 11, 12
**DO**

**SAY**

**Materials Needed**

- In your own words:

  **Testing** is a basic part of the preventive maintenance plan which involves examination of the equipment to ensure that each device is functioning properly as designed. It is not unusual for testing of this type to be conducted at regular scheduled intervals such as monthly, quarterly or annually. In transit systems that operate around the clock, the testing may occur near the off-peak hours of operation, making it possible to have no more than minimal impact on transportation outcomes. Often, running these periodic tests helps to identify potential issues that could, over time cause the equipment to become inoperable, and provide the chance to address those issues now rather than later.

  **Advance**

- **REVIEW slide**

- **Instructor’s Notes**

- ✓ PPT slide 17
**DO**

**SAY**

**In your own words:**

**Ask**
Why is elevator preventive maintenance important?

**Allow participants to discuss possible answers.**
From the first day an elevator is put into service, everyday normal operation begins to deteriorate its components. Environmental issues like dirt, snow, rain/water, temperature extremes can accelerate this deterioration. Deterioration can also be accelerated by overloading, accidents and misuse Preventive maintenance is important because elevators not receiving regularly scheduled maintenance will have components that fail prematurely.

**Advance**

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**Materials Needed**

- ✓ PPT slide 19

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In your own words:
The following are basic recommendations regarding inspections and maintenance. Use your five senses (sight, hearing, feel, smell and limited taste) when inspecting and performing maintenance. Look not only at the part you are working on but at the big picture (i.e., look around when in the pit to see anything that appears to be not right or abnormal). Finally, and most importantly, use your knowledge, past experience and basic physics (i.e., gravity, mechanics, and electricity, etc.). If you have any doubts, always ask. Everyone is learning every day.

**Advance** Think safety first.

**Advance**
When maintenance is being performed on a machine, the area in which you are working may need to be secured. For instance, a portion of a floor plate or side panel may need to be removed to gain access in order to perform maintenance or inspection on the machine. In this case, a hazardous condition has been created. The area needs to be barricaded so that patrons and other employees are aware of the hazard and its location. Securing the area will help prevent people from entering the hazardous area. Securing an area can also prevent curious people from getting too close to you and the equipment. Your undivided attention is required when you are working on a machine or a piece of equipment.

**In your own words:**

When maintenance is being performed on a machine, the area in which you are working may need to be secured. For instance, a portion of a floor plate or side panel may need to be removed to gain access in order to perform maintenance or inspection on the machine. In this case, a hazardous condition has been created. The area needs to be barricaded so that patrons and other employees are aware of the hazard and its location. Securing the area will help prevent people from entering the hazardous area. Securing an area can also prevent curious people from getting too close to you and the equipment. Your undivided attention is required when you are working on a machine or a piece of equipment.
### Elevator – General Safety and Maintenance

#### Instructor’s Guide

<table>
<thead>
<tr>
<th>Module Length: 240 min</th>
<th>Time remaining: 190 min</th>
<th>This section: 10 min (4 slides)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>DO</th>
<th>SAY</th>
<th>Materials Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Ask Icon" /></td>
<td><strong>ASK</strong></td>
<td><strong>In your own words</strong>: Lets see what we have learned so far: Safety reminders for barricades include all except: 42 inches tall Rigid Allows for public access Securely connected to prevent easy movement In place before work starts</td>
</tr>
</tbody>
</table>

**Instructor’s Notes**

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**Call on participants for answer**

**Advance for correct answer**

**Answer:** c. Allows for public access

**Advance**

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Elevator – General Safety and Maintenance

Instructor’s Guide

Module Length: 240 min  Time remaining: 180 min  This section: 20 min (7 slides)  Section start time:  Section End Time: 

<table>
<thead>
<tr>
<th>DO</th>
<th>SAY</th>
<th>Materials Needed</th>
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</thead>
<tbody>
<tr>
<td>REVIEW slides</td>
<td>In your own words:</td>
<td>✓ PPT slide 34</td>
</tr>
<tr>
<td>REFER participants to Elevator Industry Field Employees’ Safety Handbook,</td>
<td>Any distractions could prove to be dangerous and even fatal. Securing the work zone keeps these distractions at a safe distance, allowing you to focus on the task at hand. Advance</td>
<td>✓ Elevator Industry Field Employees’ Safety Handbook</td>
</tr>
<tr>
<td>Instructor’s Notes</td>
<td>Refer participants to the Elevator Industry Field Employees’ Safety Handbook Sections 4 page 29 for additional information on fall protection guidelines.</td>
<td></td>
</tr>
</tbody>
</table>

In your own words:
Any distractions could prove to be dangerous and even fatal. Securing the work zone keeps these distractions at a safe distance, allowing you to focus on the task at hand.

Advance

Refer participants to the Elevator Industry Field Employees’ Safety Handbook Sections 4 page 29 for additional information on fall protection guidelines.
In your own words:
When landing a car, two maintenance personnel should be present at all time, equipped with the proper PPE. Be sure to use the appropriate pipes when supporting the car. The pipe must be strong enough to support the car.

Advance

ASK
Who can recall the steps for landing the car?
*Allow participants to discuss possible answers*
In your own words:

Given the relatively small space of a hoistway, construction of an adequate platform can be a tricky undertaking. Specific training on constructing a scaffold and putting in the proper safety features is outside the scope of this course and the work generally done by transit elevator maintainers.

**Advance**

OSHA regulations include specific requirements for planking, fall protection, ladders, and other important safety considerations. Personnel constructing must be fully trained and those working on scaffolding should be trained in scaffold procedures and hazards. Planking must be of the correct grade (if wood) or strength. Fall protection is required based on height, railing height, and other considerations.

**Do Not Advance**
**In your own words:**

*Ask*
How does your transit agency complete documentation?

*Allow participants to discuss possible answers.*

*Advance*
While documentation of all maintenance and replacement is required by code, how this is done varies by location. Most properties use some sort of **maintenance management software (MMS)** such as Maximo.

*Advance*
Responsibility for logging this maintenance could fall on either the technicians or a clerk. Some systems still use **log books**. In some instances both maintenance software and logbooks are used. Make sure to follow your local transit procedures.

*Advance*
In your own words: Describe what type of information may be found on a preventive maintenance checklist, **Call on participants for answer**

**Advance for correct answer**

Answer:

- ✓ Unit location
- ✓ Frequency
- ✓ Date/Time
- ✓ Employee name or ID#