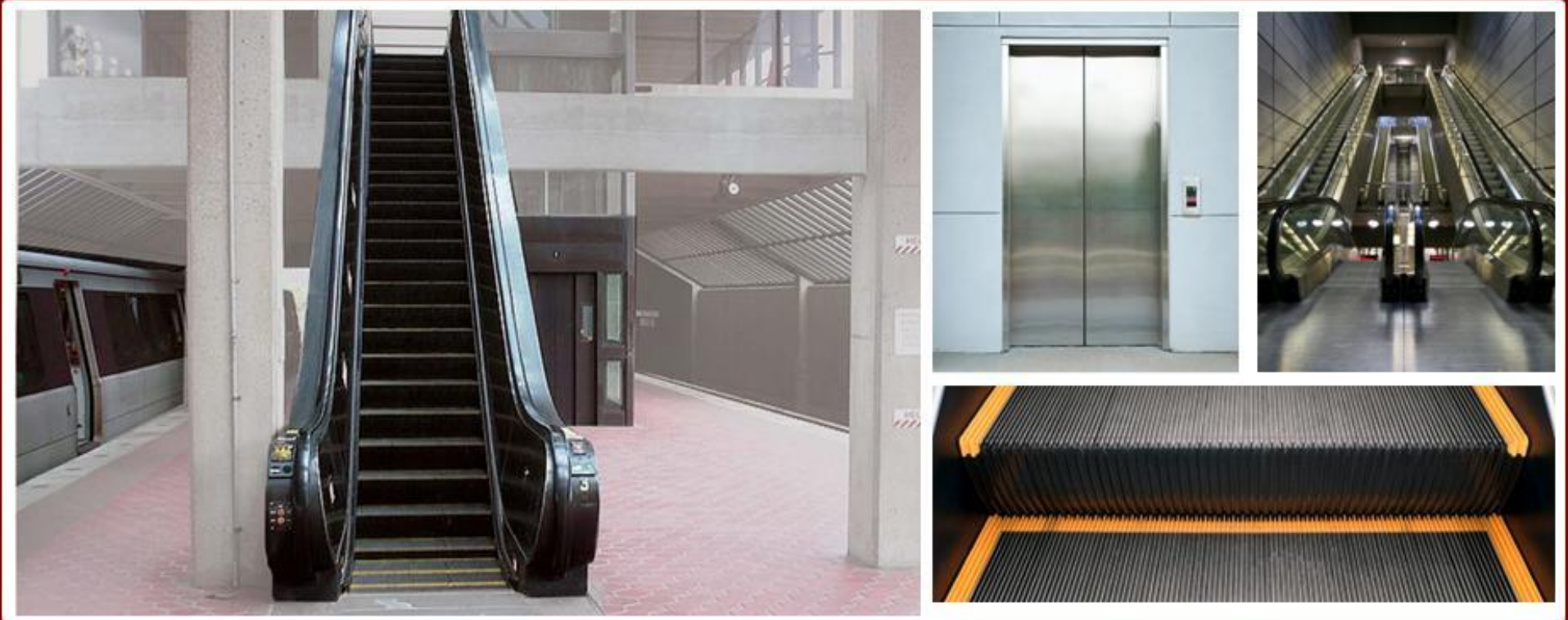


Instructor/Participant Guide



212: Escalator-Inspection & Basic Maintenance

Module 9: General Housekeeping Procedures

General Housekeeping Procedures



Table of Contents:

Introduction.....	1
General Introduction	2
Fire Extinguisher	3
Barricade	4
Personal Protective Equipment.....	5
Prints and Maintenance Records	6
Automatic Lubrication System.....	7
Machine Room.....	8
Equipment.....	9
Truss.....	10
Drive	11
Materials Safety Data Sheet	12
Oily Rag Can	13
Summary	14



Icons Used in This Guide

Throughout the Instructor’s Guide, the following icons indicate the type of content being presented.



Refer To



PowerPoint



Multimedia



Web based Training



Write



Ask



Individual Activity



Small Group Activity



Classroom Activity



Duration

Agenda

Topic No.	Topic Title	Duration
1	Introduction	5 minutes
2	Safety Equipment <ul style="list-style-type: none"> • Fire Extinguishers • Barricade • Personal protective Equipment 	20 minutes
3	Prints and Maintenance Records	10 minutes
4	Automatic Lubrication Systems	15 minutes
5	Cleaning <ul style="list-style-type: none"> • Machine Room • Equipment • Truss • Drive 	30 minutes
6	Materials Safety Data Sheets	15 minutes
7	Oily Rag Can	10 minutes
8	Summary	5 minutes
Total Time:		1.8 hours



Overview

Purpose

The purpose of this module is to:

- Review sound housekeeping procedures and reinforce the benefits of maintaining a clean, orderly work area

Objectives

At the end of this chapter, the learner will be able to:

- Perform proper cleaning of a transit escalator
- Perform visual inspection
- Identify appropriate and required signage and safety equipment
- Inspect fire extinguishers for code compliance
- Demonstrate ability to use correct cleaning agents
- Use correct Personal Protective Equipment (PPE)
- Complete the proper documentation

Materials

Make sure you have the following:

- Laptop (one for leader)
- Participant Guides
- PowerPoint slide deck
- LCD projector
- A17.1 Safety Code for Elevators and Escalators
- A17.2 Guide for Inspection of Elevators, Escalators and Moving Sidewalks

Preparation

- A17.3 Safety Code for Existing Elevators and Escalators
 - Heavy Duty Transportation System Escalator Design Guidelines (APTA RT-RP-FS 007-02)
 - Field Employees' Safety Handbook
 - Transit Agency Handbook
- PREPARE** flip charts with the following titles:
- Class Expectations



Instructor's Notes

General Housekeeping Procedures

General Housekeeping Procedures



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General Housekeeping Procedures

Outline

- Perform proper cleaning of a transit escalator.
- Perform visual inspection.
- Identify appropriate and required signage and safety equipment.
- Inspection fire extinguishers for code compliance.
- Demonstrate ability to use correct cleaning agents.
- Use correct Personal Protective Equipment (PPE).
- Complete the proper documentation.

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2

Slide 1

GAIN audience attention by introducing yourself.



WELCOME the participants to the general housekeeping procedures module.



ASK what are the advantages to maintain proper housekeeping?

DIRECT participants to the objectives on slide 2.



REVIEW the objectives on Slide 2.

Slide 2

Introduction

Welcome to the general housekeeping procedures module.

What are the advantages to maintaining proper housekeeping?



Instructor's Notes

General Housekeeping Procedures

Introduction

- A neat and properly cleaned unit has less dirt and debris making it run smoother and run longer due to reduced abrasion.
- Safety equipment is more likely to work properly when it is free of oil and dirt and when trash or other objects do not obstruct their operation.
- In general, the work site is safer when tripping hazards are removed and dangerous compounds are properly stored.

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3

Slide 3



REVIEW general housekeeping procedures.



ASK why a clean unit is easier to inspect?

General Introduction

Why is a clean unit easier to inspect?



Instructor's Notes

Fire Extinguisher

How often should fire extinguishers be inspected?

General Housekeeping Procedures

Safety Equipment

Fire Extinguisher:

- ABC class Fire extinguishers are required by ASME A17.1. code (American Society of Mechanical Engineers).
- Monthly inspection requires that the fire extinguisher be checked that the extinguisher:
 - Is visible (must be able to be seen without any problems)
 - Indicates pressure in operable range (gauge or indicator)
 - Is full (based on weight)
 - Has good tires, wheels, carriage, hose and nozzle (for wheeled extinguisher)
 - Indicates good for non-rechargeable extinguisher using push-to-test pressure indicator
 - Is accessible (must be able to be reached without any problems)

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4

General Housekeeping Procedures

Safety Equipment

Fire Extinguisher (continued):

- A monthly inspection is intended to give assurance that the fire extinguisher is fully charged and operable.
- When the manual inspection is conducted the date of the inspection and the initial of the person performing the inspection shall be recorded on a tag attached to the fire extinguisher.
- The annual inspections or those of longer timeframe must be carried out by specially trained personnel and generally will not be done by an escalator technician.



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5

Slide 4

Slide 5



REVIEW slides 4 and 5 on fire extinguishers. Discuss the NFPA 1.5.10 regulation in detail.



ASK: how often should fire extinguishers be inspected?



Instructor's Notes

Barricade

General Housekeeping Procedures

Safety Equipment

Barricade:

- Barricades are needed when taking a unit out of service.
- Any clamps or bolts used to fix the barricade to or around the nevels should be in place and free from contaminants that might hinder use.
- A sufficient number of the barricades should be available to safely secure the escalators at the location per Authority procedures.



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Slide 6

 **REVIEW** slide 6 and discuss how to inspect barricades.

 **ASK** what is the purpose of a barricade?

What is the purpose of a barricade?



Instructor's Notes

General Housekeeping Procedures

Personal Protective Equipment (PPE)

- Proper clothing, eye and face protection, respiratory equipment and other PPE may be needed in performing tasks specified in Inspection and Basic Maintenance.
- Please refer to safety training already covered in prior courses.
- See also the *Elevator Industry Field Employees Safety Handbook*.

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7

Slide 7



REVIEW slide 7 and discuss some general safety precautions.

CONTENT: Direct participants to describe in their own words how to inspect fire extinguishers and barricades before use.

APPLICATION FEEDBACK: now that we have discussed a little about safety equipment, have the participants answer the following question.



ASK: participants to describe what comprises PPE.

Personal Protective Equipment

Describe what comprises PPE.



Instructor's Notes

General Housekeeping Procedures

Prints and Maintenance Records

- ASME Code requires that a written maintenance control program detailing the procedures necessary to maintain the escalator or elevator be provided and maintained at the machine room location.
- OEM manuals and associated materials should be stored in a central location that is identified on the control board.
- ASME code A17.1 also requires a Data plate which is permanently attached to the controller or mainline disconnect. This Data plate needs to be etched or stamped with the code under which the machine was installed.

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Slide 8



REVIEW slide 8 and review the protocol for maintaining proper maintenance records.

CONTENT: Direct participants to describe in their own words the process for retaining records of maintenance.

APPLICATION FEEDBACK: now that we have discussed a little about prints and maintenance records, have the participants answer the following question.



ASK: what code mandates that a data plate be permanently attached to the controller or mainline disconnect?

Prints and Maintenance Records

What code mandates that a data plate be permanently attached to the controller or mainline disconnect?



Instructor's Notes

General Housekeeping Procedures

Automatic Lubrication System

- A self-contained lubrication system provides lubrication from a refillable reservoir and hydraulically pumped to the various components of the escalator at adjustable intervals.
- Visual inspection of the oil line and the application brushes are required to insure delivery and proper lubrication of the components.
- If the automatic lubrication system is not functioning, the oil can be manually applied with a paint brush on a container of oil.

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9

Slide 9



REVIEW slide 9 and discuss how the automatic lubrication system.

CONTENT: Direct participants to describe in their own words the how the automatic lubrication system operates.

APPLICATION FEEDBACK: now that we have discussed a little about the automatic lubrication system, have the participants answer the following questions.



ASK if the automatic lubrication system does not function, how should oil be applied?

Automatic Lubrication System

If the automatic lubrication system does not function, how should oil be applied?



Instructor's Notes

General Housekeeping Procedures

Cleaning

*Cleaning of equipment is conducted on a regularly scheduled basis, such as month, quarterly and annual.

Machine Room:

- Supplies must be properly stored and the floor kept as clean as possible.
- Proper storage of materials will be in accordance with the rules of the department.
- Some material storage is determined by the nature of the substance and its storage is addressed in the Material Safety Data Sheets.

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10

Slide 10



REVIEW slides 10 and discuss the importance of keeping the machine room clean.



ASK who regulates the proper storage of materials?

Machine Room

Who regulates the proper storage of materials?



Instructor's Notes

Equipment

General Housekeeping Procedures

Cleaning

Equipment:

- Always remember to review the **logbook** for past maintenance performed on the escalator.
- Barricade both ends of the unit where work will be performed.
- Visually check the unit looking for any unusual buildup of dirt, grease, metal shavings, handrail scrapings or other residue that could indicate a problem with the operation of the unit.
- Next, remove an adequate number of steps to gain access to the inner components of the escalator.


Transit Elevator/Escalator Consortium 11

General Housekeeping Procedures

Cleaning

Equipment (continued):

- Look for obvious hazards. Prior to performing maintenance, make the unit safe for maintenance by performing lockout/tagout.
- If panel is equipped with lighting, disconnect wiring harness before removing panel.
- Starting at the top of the escalator wipe down as much of the truss assembly as possible to remove loose debris.
- As you clean, inspect the unit for cracks, buckling of the metal, missing fasteners and corrosion.



Transit Elevator/Escalator Consortium 12

Prior to beginning maintenance, what article should be checked to determine the past maintenance on the escalator?

Slide 11

Slide 12



REVIEW slides 11 and 12 and review how to properly check and inspect equipment prior to beginning work.



ASK *Prior to beginning maintenance, what article should be checked to determine the past maintenance on the escalator?*



Instructor's Notes

Truss

Describe in what direction the truss is cleaned.

General Housekeeping Procedures

Cleaning

Truss:

- Move the space created by the step removal downward as needed to continue cleaning truss.
- Continue truss assembly cleaning downward to the lower turnaround.
- When you reach the bottom of the unit, remove the floorplates on the lower landing to gain access to the lower pit area.



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13

Slide 13



REVIEW slides 13 and review how to properly clean the truss section.



ASK participants to describe in what direction the truss is cleaned.



Instructor's Notes


Drive

How much lubricant is to be applied to the drive chains?

Cleaning

Drive:

- Can be internal or external drives.
- When cleaning the drive mechanism, ensure that mechanical locks are installed.
 - Points to clean include the gearbox/reducer, the electric motor, the drive shafts, chains, sprockets, pulleys and drain pans.
 - Ensure that drain on drain pan is clear and that hose is routed to keep oil from contaminating steps.
- Check equipment for proper lubrication.
 - **Warning:** Do not overfill gearbox/reducer.




Transit Elevator/Escalator Consortium 14

Cleaning


Drive (continued):

- Using the proper tools, remove the handrail from the track assembly.
 - Utilize vacuum to clean out handrail track of debris.
 - Inspect handrail for separations at splice point, cuts, delamination and worn inner jacket.
 - Check nylon insert on track for wear.
 - Clean out upper and lower sections of track assembly and reinstall handrail.
- When the area is completely cleaned and serviced and any potentially flammable vapors have been vented, perform a functional check of the escalator.




Transit Elevator/Escalator Consortium 15

Slide 14 **Slide 15**

 **REVIEW** slides 14 and 15 and review how to properly clean and lubricate the drive and drive components.

CONTENT: Direct participants to describe in their own words how to properly clean the truss and drive of an escalator.

APPLICATION FEEDBACK: now that we have discussed a little about cleaning procedures, have the participants answer the following question.

 **ASK** *how much lubricant is to be applied to the drive chains?*



Instructor's Notes


General Housekeeping Procedures

Materials Safety Data Sheets (MSDS)

- If materials are stored in the equipment room, an MSDS must be available and should be visible.
- Materials that are repackaged for use must be properly labeled and an MSDS must be available.
- The MSDS is required to be available and displayed prominently in the workplace. Additionally, it must be written in English and contain:
 - The name of the chemical (labeled name of the substance)
 - The chemical and common names of the substance(s)
 - Listing of ingredients
 - A statement of the ingredients that are known carcinogens
 - A statement of the ingredients that present other known hazards
 - A listing of any specific hazards of the substance

Transit Elevator/Escalator Consortium 16


Slide 16



REVIEW slide 16 and discuss what the MSDS is and where they are applicable.

CONTENT: Direct participants to describe in their own words where they can locate the MSDS.

APPLICATION FEEDBACK: now that we have discussed a little about the materials safety data sheets, have the participants answer the following questions.



ASK *where are the requirements for the Materials Safety Data Sheets found?*

Materials Safety Data Sheet

Where are the requirements for MSDSs found?



Instructor's Notes

General Housekeeping Procedures

Oily Rag Can

- A container must be provided for disposal of dirty rags that have been used to clean oil, grease or other materials from the escalator.
- This container must be emptied after every shift.

Transit Elevator/Escalator Consortium 17

Slide 17



REVIEW slide 17 and discuss the disposal of dirty rags.

CONTENT: Direct participants to describe in their own words where they can dispose of oily rags.

APPLICATION FEEDBACK: now that we have discussed details of what items are placed in the oily rag cans, have the participants answer the following question.



ASK *How often must these containers be emptied?*

Oily Rag Can

How often must these containers be emptied?



Instructor's Notes

Summary

General Housekeeping Procedures

Summary

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18

Slide 18



REVIEW slide 18 and summarize the module.

EVALUATION and CLOSURE: Recap the main points of the module before moving on to the next topic within this course.



ASK the participants if they have any outstanding questions on what was presented.