

Instructor/Participant Guide



210: Escalator-Specific: Step Installation and Maintenance

Module 6: Inspection, Maintenance, and Troubleshooting



Table of Contents:

Introduction	1
Choose a Case	2
Safety Specific Procedures	3
External Inspection	4
Damage to Demarcation	5
Damage to Steps, Risers, and Tread	6
Noise	7
Damaged Ribs	8
Gaps	9
Comb Alignment	10
Engagement of Steps	11
Side-play	12
Vibration	13
Internal Inspection	14
Step Upthrust Safety Device	15
Missing Step Safety Device	16
Step Leveling Safety Device	17
Manual Inspection	18
Property Specific PM Documentation	19
Summary	20

Table of Figures:

Figure 1: Damaged Demarcation	5
Figure 2: Broken Step	6
Figure 3: Damaged Riser	6
Figure 4: Damaged Ribs	8
Figure 5: Gaps	9
Figure 6: Comb Alignment	10
Figure 7: Worn-out Bearing	12



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
	Safety Specific Procedures Related to Inspection, Maintenance, and Troubleshooting	10 minutes
2	External Inspection <ul style="list-style-type: none"> • Damage to demarcations • Damage to steps, risers, & treads • Noise • Damaged ribs • Gaps • Comb alignment • Engagement of steps • Side-play & Vibration 	90 minutes
3	Internal Inspection <ul style="list-style-type: none"> • Step Upthrust Safety Device • Missing Step Safety Device • Step Leveling Safety Device 	60 minutes
4	Manual Inspection <ul style="list-style-type: none"> • Property Specific PM Documentation 	15 minutes
5	Summary	5 minutes
Total Time:		3 hours



Overview

Purpose	The purpose of this module is to:	Preparation	PREPARE flip chart with the following title:
	<ul style="list-style-type: none">• Introduce participants to inspection, maintenance, and troubleshooting.		<ul style="list-style-type: none">• Class Expectations
Objectives	At the end of this chapter, the learner will be able to:		
	<ul style="list-style-type: none">• Demonstrate ability to identify common step problems• Perform PM exam as per checklist of previous stated problems• Complete required maintenance documentation		
Materials	Make sure you have the following:		
	<ul style="list-style-type: none">• 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• 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		



Instructor's Notes



Slide 3



CLASS ACTIVITY – Choose a Case.



ASK for a volunteer to pick a case. Click on the case chosen and ask the participants if the item held within would be used during inspection and maintenance.



ANSWERS:

1. Yes
2. No
3. No
4. Yes
5. No
6. Yes
7. Yes
8. No

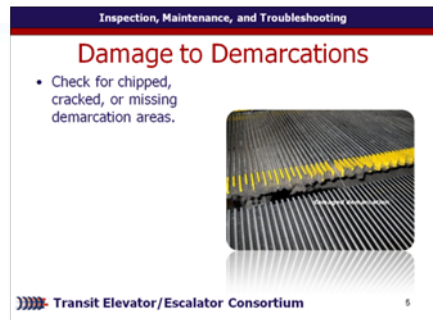
Choose a Case

Which of these items would be used during Inspection and Maintenance?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____



Instructor's Notes



Slide 6



REVIEW slide 6 and explain how to assess if a demarcation has been damaged.



ASK: What three main types of damage should you check demarcations for?

Damage to Demarcation



Figure 1: Damaged Demarcation




Instructor's Notes

Inspection, Maintenance, and Troubleshooting

Engagement of Steps

- Ensure there is no excessive movement
 - This could indicate a damaged roller or step frame
- Look and listen
 - Are the steps moving in one fluid motion?
 - Are there grinding or screeching sounds?



Transit Elevator/Escalator Consortium 12

Slide 13



REVIEW slide 13 and discuss how the steps engage.



ASK: What indicates a possible damaged roller or step frame?

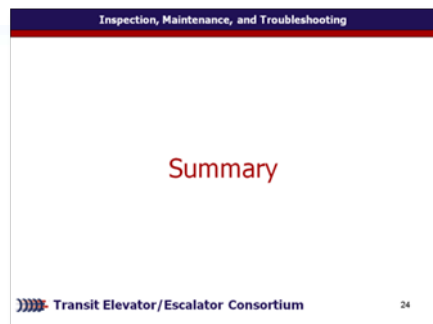
Engagement of Steps

What indicates a possible damaged roller or step frame?



Instructor's Notes

Summary



Slide 25



REVIEW slide 25 and summarize the module.



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