

Instructor Guide



200: Overview of Vertical Transportation in the Public Transit Industry

Module 3: Elevator Components and Controls

 **Transit Elevator/Escalator Consortium**

Elevator Components and Controls



Table of Contents:

Introduction.....	1
Safe Procedures for Elevator Maintenance.....	2
Hallway Controls.....	3
Car Operating System.....	4
Car Frame Components.....	5
Top of the Car.....	6
Door Systems.....	7
Quick Review 1.....	8
Hoistway Doors.....	9
Guide Rail System.....	10
Selector.....	11
Pit.....	12
Hydraulic Elevator Components.....	13
Machine Room.....	14
Mainline Disconnect.....	15
Controller.....	16
Hydraulic Drive.....	17
Shutoff and Rupture Valves.....	18
Baffle and Muffler.....	19
Quick Review 2.....	20
Traction Elevator.....	21
Motor and Motor Generator.....	22
Electric Drive.....	23
Counterweight System.....	24
Sheave System.....	25
Governor.....	26
Brake System.....	27
Roped Hydraulic Components.....	28
Quick Review 3.....	29
Summary.....	30
Answer Key.....	31-32

List of Figures:

Figure 1: Car Operating System.....	4
Figure 2: Top of the Elevator Car.....	6
Figure 3: Pit Components.....	12
Figure 4: Controller.....	16
Figure 5: Counterweight System.....	24
Figure 6: Governor.....	26



Icons Used in This Guide

Throughout the Learner'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	• Hallway Controls	35 minutes
3	• Hydraulic Elevator Components	35 minutes
4	• Traction Elevators and Control Systems	30 minutes
	• Roped Hydraulic Components	10 minutes
5	• Summary	5 minutes
Total Time:		2 hours



Overview

Purpose

The purpose of this module is to:

- Provide participants with more detailed information regarding elevator components and controls.

Objectives

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

- Describe elevator safety precautions
- Describe elevator hall components and controls
- Describe hydraulic elevator components and controls
- Describe traction elevator components and controls
- Describe roped hydraulic elevator components and controls

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
- A17.3 Safety Code for Existing Elevators and Escalators
- Heavy Duty Transportation System Elevator Design Guidelines (APTA RT-RP-FS 008-03)

Materials

- Heavy Duty Transportation System Escalator Design Guidelines (APTA RT-RP-FS 007-02)
- Field Employees' Safety Handbook
- Transit Agency Handbook
- Rubber bands, string, balsa wood, Styrofoam, thumb tacks

Preparation

PREPARE flip charts with the following titles:

- Class Expectations