

# Instructor Guide



## 202: Switches/Derails Inspection & Maintenance Module 4: Manual Switch and Derail Inspection & Maintenance

# I &M of Switches/Derails – Manual Switches/Derails

*Instructor's Guide*



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# I &M of Switches/Derails – Manual Switches/Derails

## Instructor's Guide




### Icons Used In This Guide

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**REVIEW** slides
- 

**INDIVIDUAL ACTIVITY**
- 

**ASK**
- 

**WRITE**
- 

**CLASSROOM ACTIVITY**
- 

Multimedia
- 

**SMALL GROUP ACTIVITY**
- 

**REFER** participants to

### Agenda

Topic #	Topic Title	Duration
1	Overview	15 minutes
2	General Inspection & Maintenance	10 minutes
3	Lubrication	15 minutes
4	Circuit Controllers	10 Minutes
5	Switch Machine Locks	10 Minutes
6	Seasonal Inspection & Maintenance	10 Minutes
7	Testing	15 Minutes
8	Field Trip	45 Minutes
9	Summary	15 Minutes
<b>Total Time:</b>		145 Minutes

# I &M of Switches/Derails – Manual Switches/Derails

## Instructor's Guide



### Overview

**Purpose** The purpose of this module is to:  
provide an overview of the inspection, maintenance and testing that is performed on manual switches and derails.

### **Objectives**

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

- Inspect and maintain manual switches
- Inspect and maintain electric locks
- Inspect and maintain circuit controlle

### **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
- Lubrication information for manual switches/derails at your property

# I &M of Switches/Derails – Manual Switches/Derails

## Instructor's Guide



Module Length: 145 min    Time remaining: 145 min    This section: 15 min (9 slides)    Section start time: \_\_\_\_\_    Section End Time: \_\_\_\_\_

### DO



**REVIEW** introduction slides

### SAY

**In your own words:**

Welcome to the fourth module in the course on Inspection and Maintenance of Switches and Derails. This module will focus specifically on inspecting and maintaining MANUAL switches and derails.

**Advance Slide**

Riders depend on us.

**Ask participants:**

Take a look at the screen. Who can tell me What you already know about this switch?

**Randomly call on participants to share possible answers. This discussion on manual switches/derails should prime participants for how to inspect and maintain them.**

**Advance Slide**

### Materials Needed

✓ PPT slides 1, 2



### Instructor's Notes

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# I &M of Switches/Derails – Manual Switches/Derails

## Instructor's Guide



Module Length: 145 min    Time remaining: 130 min    This section: 10 min (2 slides)    Section start time: \_\_\_\_\_    Section End Time: \_\_\_\_\_

### DO



**REVIEW** slide



**ASK** participants what they already know



**WRITE**

### Instructor's Notes

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### SAY

**In your own words:**

As with other switches, insure that everything is clean, that all hardware is secure. Check the same hardware that we outlined in Module 3.

**Call on volunteers to list hardware to check. Have a volunteer write answers on whiteboard.**

*Advance Slide*

**Compare answers to this list**

*Advance Slide*

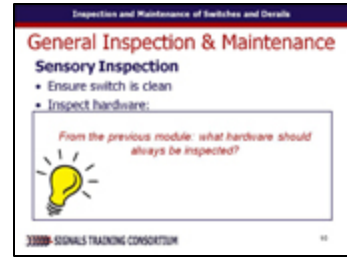
**Review Sensory Inspection chart.**

Note that for manual switches, you will also use the sense of touch to see if the switch is especially hard to throw. If so, there is a larger problem.

*Advance Slide*

### Materials Needed

✓ PPT slides 10, 11



# I &M of Switches/Derails – Manual Switches/Derails

## Instructor's Guide



Module Length: 145 min    Time remaining: 105 min    This section: 10 min (6 slides)    Section start time: \_\_\_\_\_    Section End Time: \_\_\_\_\_

### DO



**REVIEW** slide

### Instructor's Notes

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### SAY

#### In your own words:

In case of a failure of the circuit controller operating rod or connecting hardware, the return spring ensures that the indication contacts open, preventing a false indication. During inspection and maintenance, ensure that it is in place and not broken or bent. To test operation, disconnect the operating rod and make sure the spring works to center the cam.

#### Advance Slide

Ensure that the clamp and adjusting screws are secure and in good condition. If during an obstruction test, you find that the contacts need to be adjusted, loosen the clamp screw. Then, turn adjusting screw until the cam is positioned correctly. Once adjusted correctly, tighten clamp screw. Be careful not to over tighten. Retest to make sure adjustment is correct.

#### Advance Slide

### Materials Needed

✓ PPT slides 17, 18

