

Instructor Guide



202: Switches/Derails Inspection & Maintenance Module 1: Overview & Safety

I &M of Switches/Derails – Overview & Safety

Instructor's Guide



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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

Topic #	Topic Title	Duration
1	Overview	30 minutes
2	Safely Working in an Electr. Terr,	10 minutes
3	Switch Specific Safety	20 minutes
4	Tools	15 Minutes
5	Testing	15 Minutes
6	Field Trip	60 Minutes
7	Summary	15 Minutes
	Total Time:	

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Overview

Purpose The purpose of this module is to:

is to assist the participant in demonstrating safe inspection and maintenance of switches, derails, and their associated components.

Objectives

At the end of this lesson, the signal maintainer trainee will be able to:

- Identify trip, slip and fall hazards related to inspection and maintenance of switches and derails
- Identify pinch points related to inspection and maintenance of switches and derails
- Describe how to manually throw a switch
- Demonstrate ability to utilize secondary protection
- Describe procedures for working in electrified territory
- Identify proper PPE to be used during inspection and maintenance of switches and derails
- Identify and describe tools specific to inspection and maintenance of switches and derails
- List Tests Mandated by the FRA
- List pertinent timing for each test as per your authority
- Demonstrate ability to complete proper 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
- PPE usually used for switch/derail inspection and maintenance
- Tools usually used for switch/derail inspection and maintenance
- Test documentation forms for this authority

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Module Length: 165 min Time remaining: 125 min This section: 20 min (12 slides) Section start time: _____ Section End Time: _____

DO



REVIEW slide



ASK participants what they already know

Instructor's Notes

SAY

In your own words:

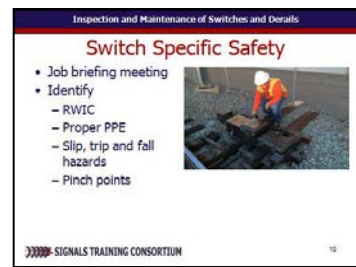
When inspecting and maintaining switches and derails it is important to follow the same safety procedures as discussed in Course 100 - identifying the **Road Worker in Charge (RWIC)**, holding a site or location specific **job briefing meeting** and wearing appropriate **Personal Protective Equipment (PPE)**. In the case of switch inspection and maintenance proper PPE generally consists of safety vest, boots, gloves and protective glasses. Some properties may also require a hard hat and/or a whistle.

Ask: At this authority, what type of PPE is required for switch and derail maintenance? Call on participants for answers. Write correct answers on a white board or flip chart.

Continued

Materials Needed

✓ PPT slide 10



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Module Length: 165 min Time remaining: 125 min This section: 20 min (12 slides) Section start time: _____ Section End Time: _____

DO

SAY

Materials Needed



REVIEW slide



Multimedia



INDIVIDUAL ACTIVITY

Instructor's Notes

In your own words:

If the switch is electric and power is not needed, disconnect power to the motor. This can be done either by using the **hand throw selector lever**, if equipped. Otherwise, power can be removed by inserting the **hand crank**. This will prevent the possibility of the switch being thrown remotely.

Also throw the switch into manual. This will be done differently depending on the specific switch.

Advance Slide

The video you are about to see shows how to put a US&S M23 into hand throw. Watch the video and write down the steps to accomplish this. You will share with the class after the video is played.

Play the video. Then call on participants to list the steps in order. Record correct steps on board or flipchart. Discuss any differences between the M23 and electric switches on this property.

Advance Slide

✓ PPT slides 14, 15



- ✓ Internet connection or downloaded video
- ✓ White board or flip chart and markers

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Module Length: 165 min Time remaining: 15 min This section: 15 min (3 slides) Section start time: _____ Section End Time: _____

DO



ASK participants what they remember



CLASSROOM ACTIVITY

Instructor's Notes

SAY

In your own words:
Read slide.

For each objective, briefly review what was learned in this module or ask participants to share what they have learned for each learning objective and briefly discuss as a class.

Advance Slide

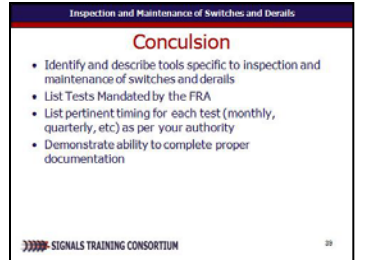
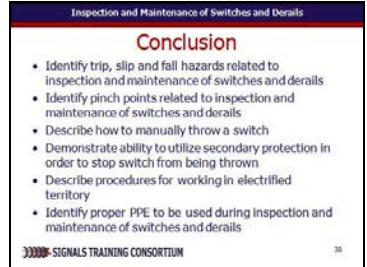
Read slide.

For each objective, briefly review what was learned in this module or ask participants to share what they have learned for each learning objective and briefly discuss as a class.

Advance Slide

Materials Needed

✓ PPT slides 38, 39



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Module Length: 165 min Time remaining: 15 min This section: 15 min (3 slides) Section start time: _____ Section End Time: _____

DO

SAY

Materials Needed



**CLASSROOM
ACTIVITY**

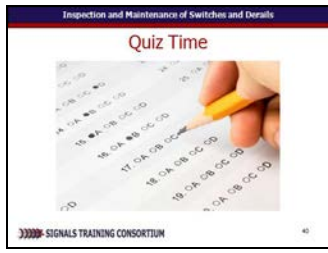


INDIVIDUAL ACTIVITY

In your own words:

Administer quizzes.

- ✓ PPT slide 40
- ✓ Quizzes
- ✓ Pencils



Instructor's Notes
