

# Instructor Guide



## 205: Inspection & Maintenance of Signaling Systems Module 1: Overview & Safety



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For Signals Training Consortium Use Only

# I&M of Signaling Equipment – Overview & Safety

Instructor's Guide



## Icons Used In This Guide



REVIEW slides



ASK



CLASSROOM ACTIVITY



SMALL GROUP ACTIVITY



INDIVIDUAL ACTIVITY



WRITE



Multimedia



REFER participants to

## Agenda

Topic #	Topic Title	Duration
1	Overview	5 minutes
2	Electrified Territory	10 minutes
3	Signal Specific Safety	45 minutes
4	Tools	15 minutes
5	Testing	10 Minutes
6	Field Trip	90 Minutes
7	Summary	5 Minutes
<b>Total Time:</b>		180 Minutes

# I&M of Signaling Equipment – Overview & Safety

## *Instructor's Guide*



## **Overview**

**Purpose** The purpose of this module is to:

Provide the participant with an overview on how to safely inspect and maintain cab and wayside signaling systems

## **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 signaling systems Identify pinch points related to inspection and maintenance of signaling system
- Describe procedures for working in electrified territory
- Identify proper PPE to be used during inspection and maintenance of signaling systems
- Identify and describe tools specific to inspection and maintenance of signaling systems
- List Tests Mandated by the FRA
- List pertinent timing for each test (monthly, quarterly, etc) as per your authority
- Demonstrate ability to complete proper documentation

## **Materials**

**Mandatory** Make sure you have the following

- PowerPoint Presentation
- Coursebook
- Quizzes
- Pencils
- White board/ Flip chart and markers

**Optional** You may also want the following for optional activities:

- Lab. simulator
- Internet connection
- Signaling tools to pass around the class (multi-meter, signal sniffer, etc.)
- Ladder and tape measurer
- Fall protection harness
- Scrap paper
- Site specific documentation sheet

# I&M of Signaling Equipment – Overview & Safety

## Instructor's Guide



Module Length: 180min    Time remaining: 180min    This section: 5min (6 slides)    Section start time: \_\_\_\_\_    Section End Time: \_\_\_\_\_

DO	SAY	Materials Needed
<div data-bbox="48 464 164 571" data-label="Image"> </div> <p data-bbox="183 492 415 528"><b>REVIEW</b> slides</p> <div data-bbox="48 585 164 692" data-label="Image"> </div> <p data-bbox="183 614 260 649"><b>ASK</b></p> <div data-bbox="28 792 454 842" data-label="Section-Header"> <h3>Instructor's Notes</h3> </div> <hr/> <hr/> <hr/> <hr/> <hr/>	<p data-bbox="666 428 1033 464"><b>In your own words:</b></p> <p data-bbox="666 478 1400 592">Welcome to the introductory module in the course on Inspection and Maintenance of Cab and Wayside Signaling – Overview and Safety. <b>Advance slide.</b></p> <p data-bbox="666 599 1439 963">Safety is an important part of all inspection and maintenance procedures. As you'll see in a bit, fall protection and electrical safety are especially pertinent to inspection and maintenance of cab and wayside signaling. Who can recall a time when they were injured from working with either heights or electricity in an unsafe way? These don't need to be extreme situations.</p> <p data-bbox="666 971 1323 1049"><b>Call on volunteers and share your own experiences.</b></p> <p data-bbox="666 1056 1439 1292">The bad news is that much more serious, even fatal accidents can happen during the inspection and maintenance of signaling equipment. The good news is that all of these incidences could have been avoided – and we're going to learn how today.</p> <p data-bbox="666 1299 937 1335"><b>Advance Slide.</b></p>	<p data-bbox="1497 478 1845 514">✓ PPT slides 1, 2</p> <div data-bbox="1535 542 1864 778" data-label="Image"> </div> <div data-bbox="1535 792 1864 1028" data-label="Image"> </div>



# I&M of Signaling Equipment – Overview & Safety

## Instructor's Guide



Module Length: 180min    Time remaining: 165min    This section: 45min (9 slides)    Section start time: \_\_\_\_\_    Section End Time: \_\_\_\_\_

DO	SAY	Materials Needed
<div data-bbox="67 449 173 549" data-label="Image"> </div> <div data-bbox="202 478 270 506" data-label="Text"> <p>ASK</p> </div> <div data-bbox="28 792 444 835" data-label="Section-Header"> <h3>Instructor's Notes</h3> </div> <hr/> <hr/> <hr/> <hr/> <hr/>	<div data-bbox="676 428 1023 464" data-label="Section-Header"> <p><b>In your own words:</b></p> </div> <div data-bbox="676 471 1429 913" data-label="Text"> <p>Before use, always inspect a ladder for damage, slippery materials on the rungs and that locks that are not properly engaged. If any of these are present and cannot be remedied, do not use this ladder. Once a ladder is found to be in working condition, place only on a stable/level surface away from any hazards including electrical hazards, boxes, etc. A ladder placed in any location where it can be displaced by other work activities must be secured to prevent displacement or a barricade must be erected to keep traffic away from the ladder.</p> </div> <div data-bbox="676 921 1429 1256" data-label="Text"> <p>The proper angle of the ladder is especially important. <b>Ask:</b> by using this diagram, who can tell me what the distance from the wall should be? How about the distance above the top support? <b>Collect responses. Advance to reveal the correct answers.</b> Once placed correctly, tie the ladder off to a secure point. Do not move or shift a ladder while a person or equipment is on the ladder. <b>Advance slide.</b></p> </div>	<div data-bbox="1497 471 1796 506" data-label="Text"> <p>✓ PPT slide 15</p> </div> <div data-bbox="1545 528 1864 763" data-label="Image"> <p><b>Ladder Safety</b></p> <ol style="list-style-type: none"> <li>1. Inspect for: damage, slippery materials, etc.</li> <li>2. Place away from any hazards. Use a barricade if necessary.</li> <li>3. Ensure proper angles:             <ol style="list-style-type: none"> <li>a) Distance from wall</li> <li>b) Distance above top support</li> </ol> </li> <li>4. Tie ladder to a secure point</li> </ol> <p><small>SIGNALS TRAINING CONSORTIUM</small></p> </div>