

# Instructor Guide



## 301: Troubleshooting and Repair of Track Circuits Module 1: Principles of Troubleshooting

# Signals – Principles of Troubleshooting

*Instructor's Guide*



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Signals Training

# Signals – Principles of Troubleshooting

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	30 Minutes
2	The Process of Troubleshooting	10 Minutes
3	Four Steps in Troubleshooting	30 Minutes
4	Best Practices for Troubleshooting	20 Minutes
5	Charts & Diagrams Troubleshooting	10 Minutes
6	Field Trip	60 Minutes
7	Summary	20 Minutes
	<b>Total Time:</b>	180 Minutes

# Signals – Principles of Troubleshooting

## Instructor's Guide



### Overview

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

provide an overview to troubleshooting signal systems equipment and machinery within the context of general troubleshooting and best practices.

### **Objectives**

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

- Examine the importance of troubleshooting
- Restate the troubleshooting process
- Identify troubleshooting steps
- Identify troubleshooting best practices
- Apply troubleshooting principles to some common signal systems problems and causes.

### **Materials**

**Mandatory** Make sure you have the following

- PowerPoint Presentation
- Coursebook
- Quizzes
- Pencils
- Handouts:

### **Optional**

You may also want the following for optional activities:

- Chalk board with chalk, large paper with marker, etc.
- Internet connection
- Lab, simulator



# Signals – Principles of Troubleshooting

## Instructor's Guide



Module Length: 180 min

Time remaining: 180 min

This section: 30 min (6 slides)

Section start time: \_\_\_\_\_

Section End Time: \_\_\_\_\_

### DO

### SAY

### Materials Needed



**REVIEW** introduction slides

#### In your own words:

Welcome to the course on Principles of Signals Troubleshooting.

#### Advance slide

Riders depend on us.

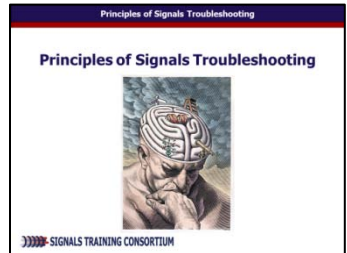
You have just arrived home to find that one light above your front door is fluctuating between being very bright to very dim. You go inside to find that your refrigerator is also not running.

Assuming that you may need to ultimately consult with an electrician, what other questions would you ask or what steps would you take to begin the troubleshooting process in order to begin to find a solution to this problem?

**Discuss possible questions to ask and potential steps to take.**

#### Advance slide

✓ PPT slides 1, 2



### Instructor's Notes

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# Signals – Principles of Troubleshooting

## Instructor's Guide



Module Length: 180 min

Time remaining: 140 min

This section: 30 min (10 slides) Section start time: \_\_\_\_\_ Section End Time: \_\_\_\_\_

**DO**

**SAY**

**Materials Needed**



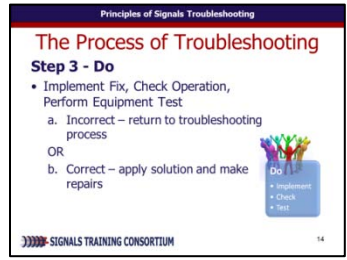
**REVIEW** slides

**In your own words:**

**Or**

Tests were completed and a solution found. Now it is time to apply the solution and make the necessary repairs. Once the repairs have been made, it is important to re-evaluate and decide if the equipment has been adequately repaired and restored to proper working condition by testing once more.

✓ PPT slide 14



### Instructor's Notes

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**Advance slide**