Introduction to Installation and Construction Standards

Course 250

PARTICIPANT GUIDE

SIGNALS TRAINING CONSORTIUM

Introduction to Installation and Construction Standards

Participant Guide

Signals Maintenance Training Consortium

COURSE 250

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How to Use the Participant Guide

Purpose of the Course
The purpose of the *Installation and Constructions Standards* course is to assist the participant in orienting the signal maintainer to installation and construction standards that exist for railway signaling equipment. This course also shows how to maintain safety while repairing and reinstalling the signaling equipment and how to apply the standards while repairing and reinstalling equipment railway signaling equipment.

Approach of the Book
This course begins with an outline, a statement of purpose and objectives, and a list of key terms. The *outline* will discuss the main topics to be addressed in the course. A list of *key terms* identifies important terminology that will be introduced in this course. *Learning objectives* define the basic skills, knowledge, and abilities course participants should be able to demonstrate to show that they have learned the material presented in the course. A list of *key terms* identifies important terminology that is introduced in this course. *Review exercises* conclude this course to assist the participants in reviewing key information.

This course builds upon other courses in the curriculum. During this course there will be references to materials already documented in other courses. The following table is included and shows the topic being presented in this course, as well as the additional reference materials and the location of the references in other courses. The first column is the Module, Section and Topic from this current course, Signals Course 250, Installation and Constructions Standards. The second column lists the reference materials from other Signals courses with the course, module if applicable and course title. The third column is the link to the reference course materials on the Transit Training network web site.

Module - Section Topic	Covered in course, Module Course title	TTN Link to Course
1-4 Communication Protocol	100 Orientation	https://www.transittraining.net/courseware/details/course-100-orientation
2-4 Megger Testing	207, 2 Signal Power Distribution Inspection and Maintenance	https://www.transittraining.net/courseware/details/course-207-signal-power-distribution-inspection-and-maintenance
3-4 Communication protocol	100 Orientation	https://www.transittraining.net/courseware/details/course-100-orientation
3-4 Polarity testing	102 Introduction and Overview to Switches and Derails	https://www.transittraining.net/courseware/details/course-10-introduction-and-overview-to-switches-and-derails
3-4 Figure 8 test	202 Inspection and Maintenance of Switches and Derails	https://www.transittraining.net/courseware/details/course-202-inspection-and-maintenance-of-switches-and-derails
3-4 Shunt test	201, 2 Inspection and Maintenance of Track Circuits	https://www.transittraining.net/courseware/details/course-201-inspection-and-maintenance-of-track-circuits
6-1 Switch overview	102 Introduction and Overview to Switches and Derails	https://www.transittraining.net/courseware/details/course-10-introduction-and-overview-to-switches-and-derails

6-2 Installation Standards	202 Inspection and Maintenance of Switches and Derails	https://www.transittraining.net/courseware/details/course-202-inspection-and-maintenance-of-switches-and-derails
6-2 Switch inspection, testing, maintenance and repair	202 Inspection and Maintenance of Switches and Derails	https://www.transittraining.net/courseware/details/course-202-inspection-and-maintenance-of-switches-and-derails
6-4 Testing	202, 3 Inspection and Maintenance of Switches and Derails	NOTE: Copies of Unit 3-8 Copies will need to be distributed during class for activity https://www.transittraining.net/courseware/details/course-202-inspection-and-maintenance-of-switches-and-derails
7-4 Overview of grade Crossings	104 Introduction and Overview to Highway Grade Crossings	https://www.transittraining.net/courseware/details/course-104-introduction-and-overview-to-highway-grade-crossings
7-4Testing and maintenance of grade crossings	204 Inspection and Maintenance of Highway Grade Crossings	https://www.transittraining.net/courseware/details/course-204-inspection-and-maintenance-of-highway-grade-crossings

NOTE: All images contained within this document were contributed by Signals Training Consortium members unless otherwise noted.

Module 1

INTRODUCTION TO INSTALLATION AND CONSTRUCTION STANDARDS

Outline

1-1 Overview
1-2 Standard Setting Agencies
1-3 Practical Applications
1-4 Generic Safety Considerations
1-5 Summary

Purpose and Objectives

The purpose of this course is to assist the participant in being oriented to installation and construction standards that exist for railway signaling equipment.

Following the completion of this course, the participant should be able to complete the exercises with an accuracy of 70% or greater:

- Identify national and local standard setting agencies
- Given the appropriate documents, demonstrate the ability to locate standards related to railway signaling equipment
- Explain the importance of installation and construction standards for railway signaling equipment to the job of the signal maintainer
- Describe generic safety considerations for troubleshooting and re-installing railway signaling equipment
- Demonstrate understanding of confined space compliance

Key Terms

- American Railway Engineering and Maintenance-of-Way Association (AREMA)
- Confined space
- Federal Highway Administration (FHWA)
- Federal Railroad Administration (FRA)
- Federal Transit Administration (FTA)
- Installation drawings
- Job Safety Briefing
- Manual on Uniform Traffic Control Devices (MUTCD)
- National Electrical Code (NEC)
- National Fire Protection Agency (NFPA)
- NFPA 70E
- Occupational Safety and Health Administration (OSHA)
- Roadway Worker in Charge (RWIC)