



Introduction and Overview to Cab & Wayside Signaling

Course 105

PARTICIPANT GUIDE

 SIGNALS TRAINING CONSORTIUM

Introduction and Overview to Cab and Wayside Signaling

Participant Guide

Signals Maintenance Training Consortium

COURSE 105

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TABLE OF CONTENTS	PAGE
How to Use the Participant Guide.....	vi
MODULE 1: OVERVIEW OF CAB AND WAYSIDE SIGNALING.....	1
1-1 OVERVIEW	3
1-2 SIGNALING SYSTEMS AND THEORY OF OPERATION.....	5
1-3 SIGNALING EQUIPMENT	8
1-4 SIGNAL SPECIFIC NOMENCLATURE	38
1-5 OVERLAY SYSTEMS	48
1-6 SUMMARY.....	49
ADDITIONAL RESOURCES.....	49
MODULE 2: AUTOMATIC BLOCK SIGNALING AND TRAFFIC CONTROL	
SYSTEM.....	50
2-1 OVERVIEW	51
2-2 BI-DIRECTIONAL ABS	53
2-3 ELECTRICAL WORKINGS.....	54
2-4 SUMMARY.....	56
MODULE 3: AUTOMATIC TRAIN CONTROL.....	57
3-1 OVERVIEW	58
3-2 ATC SUBSYSTEMS	58
3-3 ELECTRICAL WORKINGS OF CAB SIGNALS (ATC)	65
3-4 SYSTEM SPECIFIC SEQUENCES OF OPERATION	67
3-5 SUMMARY.....	70
MODULE 4: COMMUNICATION BASED TRAIN CONTROL.....	71
4-1 OVERVIEW	72
4-2 CBTC EQUIPMENT.....	73
4-3 SUMMARY.....	82

LIST OF FIGURES

<i>Figure 1.1 Three indication Cab Signal Sequence - Courtesy MetroNorth</i>	<i>3</i>
<i>Figure 1.2 Typical Automatic Block Signaling - Courtesy MBTA.....</i>	<i>5</i>
<i>Figure 1.3 CBTC Illustration.....</i>	<i>6</i>
<i>Figure 1.4 CIL from the Outside - Courtesy LIRR</i>	<i>8</i>
<i>Figure 1.5 CIL from the Inside - Courtesy LIRR.....</i>	<i>8</i>
<i>Figure 1.6 Wayside Labeling where the equipment will normally be located.....</i>	<i>9</i>
<i>Figure 1.7 Signal Case and Components Contained - Courtesy SEPTA</i>	<i>9</i>
<i>Figure 1.8 Wall Mount Signal - Courtesy MBTA</i>	<i>10</i>
<i>Figure 1.9 Pedestal Mount Signal - Courtesy NFTA.....</i>	<i>10</i>
<i>Figure 1.10 Dwarf Signal - Courtesy NFTA.....</i>	<i>10</i>
<i>Figure 1.11 Diagram of Searchlight Basic Design</i>	<i>12</i>
<i>Figure 1.12 Phankill unit with glass removed (Source: http://www.trainweb.org/).....</i>	<i>12</i>
<i>Figure 1.13 Audio Frequency Transmitter Module - Courtesy GCRTA</i>	<i>12</i>
<i>Figure 1.14 Tuned Impedance Bond - Courtesy SEPTA</i>	<i>13</i>
<i>Figure 1.15 US&S Style W400 Track Transformer - Courtesy SEPTA.....</i>	<i>14</i>
<i>Figure 1.16 Symbol for a Transformer.....</i>	<i>14</i>
<i>Figure 1.17 Loop Location on a Crossover - Courtesy GCRTA</i>	<i>15</i>
<i>Figure 1.18 Simplified Diamond Crossover Showing Bonds and Loops - Courtesy MBTA</i>	<i>15</i>
<i>Figure 1.19 Diamond Crossover Showing Bonds and Loops - Courtesy MBTA.....</i>	<i>16</i>
<i>Figure 1.20 Tuned Loop - Courtesy SEPTA.....</i>	<i>18</i>
<i>Figure 1.21 Shunt Bar - Courtesy MBTA</i>	<i>18</i>
<i>Figure 1.22 Loop Tuning Unit – Courtesy Alstom</i>	<i>19</i>
<i>Figure 1.23 Loop Tuning Unit - Courtesy GCRTA.....</i>	<i>19</i>
<i>Figure 1.24 Untuned Loop - Courtesy SEPTA</i>	<i>20</i>
<i>Figure 1.25 Internal View of a Loop Coupling Unit - Courtesy GCRTA.....</i>	<i>20</i>
<i>Figure 1.26 Long Wire Loop - Courtesy MBTA</i>	<i>21</i>
<i>Figure 1.27 Example of Information Collected by TWC Loop from Multi-Vehicle Train</i>	<i>22</i>
<i>Figure 1.28 Train to Wayside Loop Uncovered - Courtesy CATS.....</i>	<i>22</i>
<i>Figure 1.29 Train to Wayside Loop Covered - Courtesy DenverRTD</i>	<i>22</i>
<i>Figure 1.30 PLC communication interface - Courtesy SEPTA</i>	<i>23</i>
<i>Figure 1.31 PLC communication interface Computer Display - Courtesy SEPTA.....</i>	<i>23</i>
<i>Figure 1.32 Rail Car Labeling Where the Carborne Equipment Will Normally Be Located</i>	<i>25</i>
<i>Figure 1.33 Carborne Package Highlighting Components.....</i>	<i>26</i>
<i>Figure 1.34 Siemens ATP Enclosure for an ATC System – Courtesy Siemens and NFTA.....</i>	<i>27</i>
<i>Figure 1.35 Test Panel - Courtesy Siemens and NFTA.....</i>	<i>28</i>
<i>Figure 1.36 SEIMENS ATP Aspect display unit – Courtesy Siemens and NFTA</i>	<i>28</i>
<i>Figure 1.37 CBTC Aspect Display Unit - Courtesy SEPTA.....</i>	<i>29</i>
<i>Figure 1.38 Internal Information Panel - Courtesy Siemens and NFTA.....</i>	<i>30</i>
<i>Figure 1.39 Magnetic Speed Pickups - GRS.....</i>	<i>31</i>
<i>Figure 1.40 Speed Sensor - Courtesy NFTA.....</i>	<i>31</i>
<i>Figure 1.41 Carborne Antenna - Courtesy NFTA.....</i>	<i>31</i>
<i>Figure 1.42 Carborne Antenna - Courtesy DenverRTD.....</i>	<i>31</i>
<i>Figure 1.43 Carborne Antenna - GRS</i>	<i>32</i>

How to Use the Participant Guide

Purpose of the Course

The purpose of the Introduction and Overview to Cab and Wayside Signaling course is to assist the participant in gaining an overview the functions of cab and wayside signals and their associated components.

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.

Module 1

OVERVIEW OF CAB AND WAYSIDE SIGNALING

Outline

- 1-1 Overview**
- 1-2 Signaling Systems and Principles of Operation**
- 1-3 Signaling Equipment**
- 1-4 Signal Specific Nomenclature**
- 1-5 Overlay Systems**
- 1-6 Summary**

Purpose and Objectives

The purpose of this module is to provide an overview of the types of signaling systems that are present in some rail locations.

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

- Describe theory of operation and purpose of signaling
- Identify related elements of signaling
- Describe interface between territories with and without signaling systems
- Describe operation of different types of signaling systems
- Describe equipment for train to wayside communication (TWC)
- Identify signaling symbols recommended by American Railway Engineering and Maintenance-of-way Association (AREMA)
- Given an aspect chart from your location, demonstrate ability to read the chart and explain the aspect that will be given for various moves on the track
- Describe how overlay systems work
- Identify one type of overlay system

Table 1.1 Summary Chart Comparing ABS, ATC and CBTC

	Automatic Block Signaling	Automatic Train Control	Communication Based Train Control	Notes
Block Type	Fixed Block	Fixed Block	Moving Block	
Traditional Track Circuit	Yes	Yes	No - uses segments	
Location information	What block the train is in		EXACTLY where the train is within the block	
Will apply brakes	Only if equipped with train stops	Yes	Yes	
Broken Rail Protection	Yes	Yes	NO	