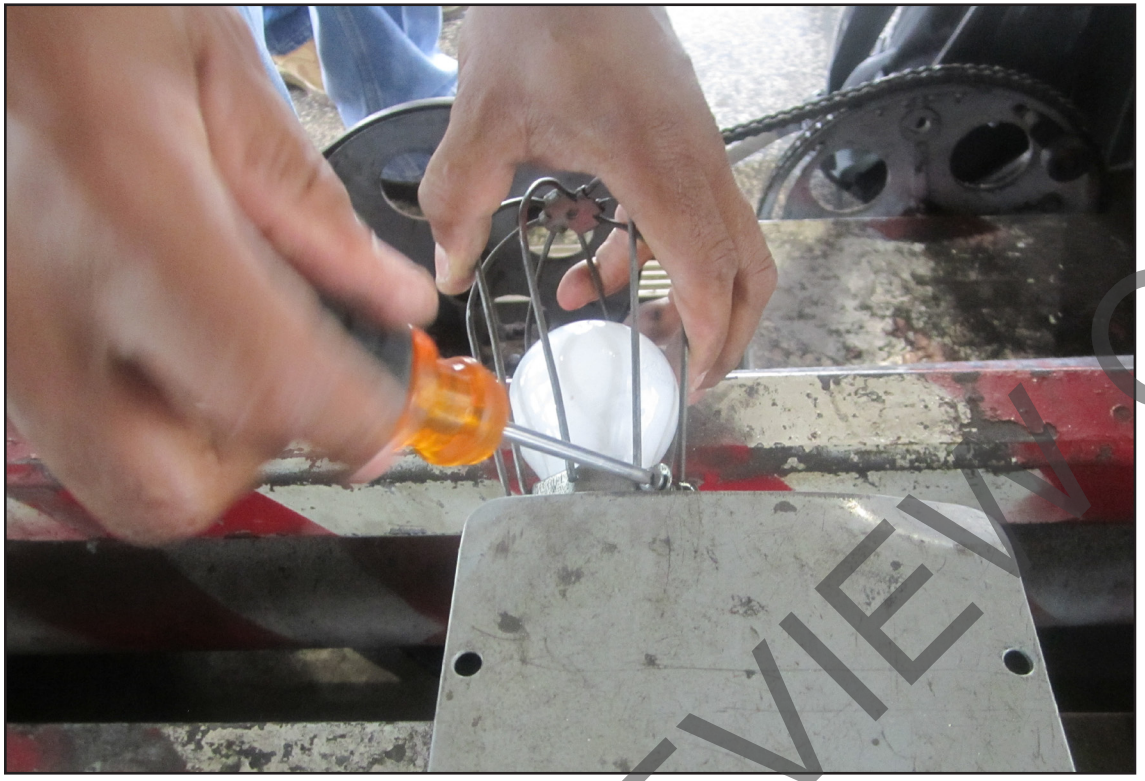
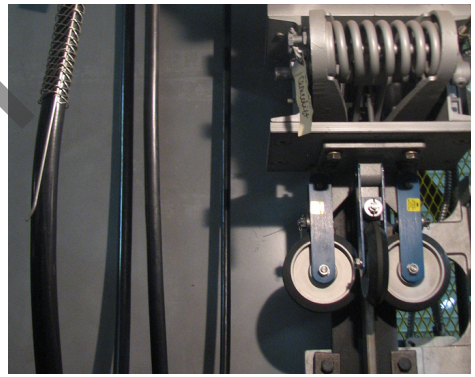
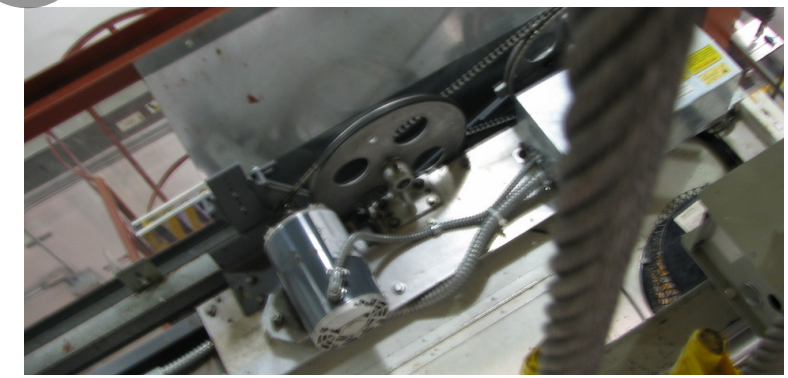
Instructor Guide







219: Elevator: Inspection and Basic Maintenance

Module 12: Internal Communications

TRANSIT ELEVATOR/ESCALATOR CONSORTIUM

Table of Contents

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	Local Terms	10 Minutes
3	Reporting and Forms	5 Minutes
4	Communication Procedures	5 Minutes
5	Communication Interface	10 Minutes
6	Reporting Software	15 Minutes
7	Field Trip	75 Minutes
8	Summary	30 Minutes
	Total Time:	180 Minutes

Overview

Purpose The purpose of this module is to:

Provide the participant with an introduction to the benefits of remote monitoring and how to use this internal communication technique to inspect and maintain transit elevators.

Objectives

At the end of this lesson, the transit elevator/escalator trainee will be able to:

- Describe the method of remote monitoring used within their system
- Identify who monitors the system
- List advantages of remote monitoring

Materials

Mandatory Make sure you have the following

- PowerPoint Presentation
- Coursebook
- Quizzes
- Pencils
- Paper

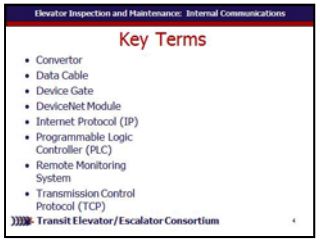
Optional You may also want the following for optional activities:

- Chalk board with chalk, large paper with marker, etc.
- Internet connection
- Lab, simulator or out of service elevator

Elevator – Internal Communications

Instructor's Guide

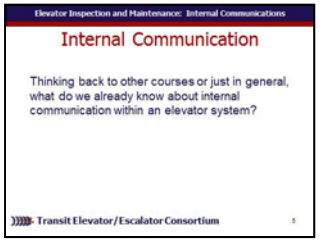
Module Length: 180 min | Time remaining: 180 min | This section: 30 min (7 slides) | *Section start time: _____* | *Section End Time: _____*

DO	SAY	Materials Needed
REVIEW key terms **Instructor's Notes** _____ _____ _____ _____ _____	**In your own words:** Lets take a look at some of the key words we will be defining as move through this module: • Convertor • Data Cable • Device Gate • DeviceNet Module • Internet Protocol (IP) • Programmable Logic Controller (PLC) • Remote Monitoring System • Transmission Control Protocol (TCP) ***Advance***	✓PPT slide 4 

Elevator – Internal Communications

Instructor's Guide

Module Length: 180 min | Time remaining: 180 min | This section: 30 min (7 slides) | *Section start time: _____* | *Section End Time: _____*

DO	SAY	Materials Needed
ASK participants what they remember about safety and elevators **SMALL GROUP ACTIVITY** **WRITE** **Instructor's Notes**	**In your own words:** Thinking back to other courses or just in general, what do we already know about internal communication within an elevator system? ***Allow participants to think for a minute and perhaps discuss with a partner ideas as well as write down any ideas. Discuss participant responses and if possible list them on a chalk board or similar.*** ***Advance***	✓PPT slide 5  ✓Paper ✓Chalk board or large paper ✓Writing Instruments

Elevator – Internal Communications

Instructor's Guide

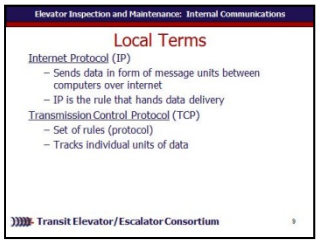
Module Length: 180 min | Time remaining: 180 min | This section: 30 min (7 slides) | *Section start time: _____* | *Section End Time: _____*

DO	SAY	Materials Needed
REVIEW slide **Instructor's Notes** _____ _____ _____ _____ _____	**In your own words:** The remote system can give the end users (technicians, supervisors, on-site and off-site management of the connected vertical transportation equipment) the following conditions: • In elevators (shows time and date) • ON/OFF status • Up/Down direction • Activation of safety devices (and which device was activated) • Mechanic on-site • Depending on set-up and cameras – video of any changes prior to and after any events (i.e. emergency stop button pushed -- due to an accident) • Current location (floor or nearest floor) • Travel direction (Up/Down) • Door position (Open/Closed) ***Advance***	✓PPT slide 7 

Elevator – Internal Communications

Instructor's Guide

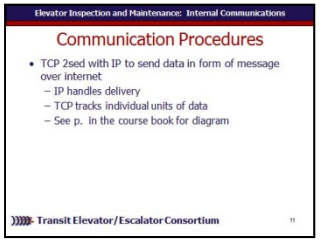
Module Length: 180 min | Time remaining: 150 min | This section: 10 min (2 slides) | *Section start time: _____* | *Section End Time: _____*

DO	SAY	Materials Needed
REVIEW slide **Instructor's Notes** _____ _____ _____ _____ _____	**In your own words:** Two other terms, Internet protocol or IP and Transimission Control Protocol (TCP) - ***Advance*** **Internet Protocol (IP)** sends data in the form of message units between computers over the Internet while the IP is the rule that handles the proper and actual delivery of the data. ***Advance*** **Transmission Control Protocol (TCP)** is a set of rules (protocol) which tracks the individual units of data. ***Advance***	✓PPT slide 9 

Elevator – Internal Communications

Instructor's Guide

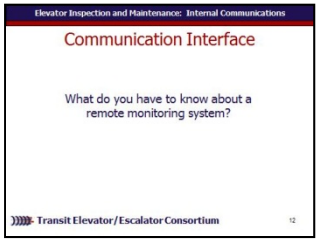
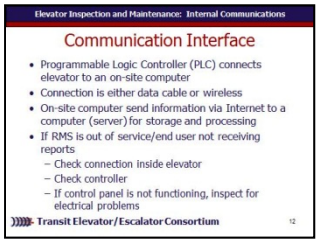
Module Length: 180 min | Time remaining: 135 min | This section: 5 min (1 slide) | *Section start time: _____* | *Section End Time: _____*

DO	SAY	Materials Needed
REVIEW slide **Instructor's Notes** _____ _____ _____ _____ _____	**In your own words:** Transmission Control Protocol and Internet Protocol is the description for TCP/IP. TCP is a set of rules (protocol) used along with the IP to send data in the form of message units between computers over the Internet. ***Advance*** While IP takes care of handling the actual delivery of the data, ***Advance*** TCP takes care of keeping track of the individual units of data (called packets) that messages are divided into for efficient routing through the Internet. ***Advance*** See p. in the course book for diagram ***Advance***	✓PPT slide 11 

Elevator – Internal Communications

Instructor's Guide

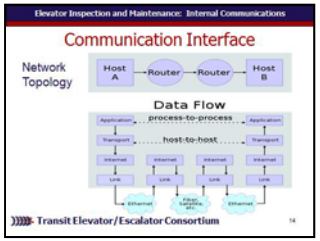
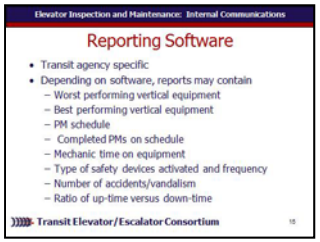
Module Length: 180 min | Time remaining: 130 min | This section: 10 min (3 slide) | *Section start time: _____* | *Section End Time: _____*

DO	SAY	Materials Needed
REVIEW slides **Instructor's Notes** _____ _____ _____ _____ _____	**In your own words:** What do you have to know about the remote monitoring system? ***Advance*** There is a connection from the elevator **Programmable Logic Controller (PLC)** inside the elevator controller to a computer on site. ***Advance*** The connection can be obtained via a **data cable** or wireless connection. ***Advance*** The computer on site sends the information via the Internet or Intranet to a computer (server) which stores and processes the information. ***Advance***	✓PPT slides 12, 13  

Elevator – Internal Communications

Instructor's Guide

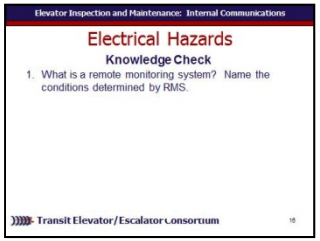
Module Length: 180 min | Time remaining: 120 min | This section: 15 min (4 slide) | *Section start time: _____* | *Section End Time: _____*

DO	SAY	Materials Needed
REVIEW slides **Instructor's Notes** _____ _____ _____ _____ _____	**In your own words:** Here is an example of how communication between computers works. Host A and Host B are computers. Remember, in our situation, the elevator controller is connected and is giving information (data) to Host A (computer) which is sending the data over to Host B (computer). ***Advance*** The reporting software will vary from each transit agency depending on the particular type of remote monitoring system chosen by the agency. Ask the instructor for the specific software your system is currently using. Ask the instructor or your supervisor about the specific reports your system is capable of producing. ***Advance***	✓PPT slides 14, 15  

Elevator – Internal Communications

Instructor's Guide

Module Length: 180 min | Time remaining: 120 min | This section: 15 min (4 slide) | *Section start time: _____* | *Section End Time: _____*

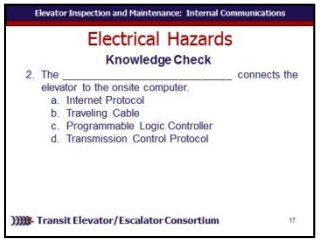
DO	SAY	Materials Needed
ASK **Instructor's Notes** _____ _____ _____ _____ _____	**In your own words:** Lets see what we have learned so far: What is a remote monitoring system? Name the conditions determined by RMS. ***Call on participants for answer*** ***Advance once given the correct answer*** Answer: **Remote Monitoring System –** Collects information from the elevator system in a given station and sends it via computer system to the transit agency data base. ➢Time and date ➢ON/OFF status ➢Up/Down direction ➢Activation of safety devices ➢Mechanic on-site ➢Video and camera footage ➢Current location ➢Travel direction ➢Door position ***Advance***	✓PPT slide 16 

Elevator – Internal Communications

Instructor's Guide

Module Length: 180 min | Time remaining: 120 min | This section: 15 min (4 slide) | *Section start time: _____* | *Section End Time: _____*

DO	SAY	Materials Needed
ASK	**In your own words:** The _____ connects the elevator to the onsite computer. a. Internet Protocol b. Traveling Cable c. Programmable Logic Controller d. Transmission Control Protocol ***Call on participants for answer*** ***Advance once given the correct answer*** Answer: **c. Programmable Logic Controller** ***Advance***	✓PPT slide 17



Instructor's Notes

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Elevator – Internal Communications

Instructor's Guide

Module Length: 180 min | Time remaining: 110 min | This section: 75 min | *Section start time: _____* | *Section End Time: _____*

DO	SAY	Materials Needed
ASK **CLASSROOM ACTIVITY** **Instructor's Notes** _____ _____ _____ _____ _____	**In your own words:** ***[At instructor's discretion, take time to visit the field and look for examples internal communication workings.] Advance***	✓PPT slide 19 

Elevator – Internal Communications

Instructor's Guide

Module Length: 180 min Time remaining: 30 min This section: 30 min (3 slides) *Section start time: _____* *Section End Time: _____*

DO	SAY	Materials Needed
CLASSROOM ACTIVITY **INDIVIDUAL ACTIVITY** **Instructor's Notes**	**In your own words:** ***Administer quizzes.***	✓PPT slide 22 ✓Quizzes ✓ Pencils