



# CHANGING TRACKS

## An Update on the National Signals Training Consortium

### What's INSIDE

- The Future of the National Signals Training Consortium
- Consortium Metrics
- Courseware Update
- Update on New Partnerships
- Making Connections Conference
- Transit Training Network
- Resources for Recruiting the Next Generation of Signal Maintainers

### PLUS:



Hear what our Subject Matter Experts and leadership have to say about their involvement in the Signals Training Consortium.

## Signals Consortium Enters Next Phase: Make Sure Your Location is at the Table

Since 2013, the Signals Training Consortium has moved forward with its mission to create standardized national training courseware. The development team composed of signals maintenance Subject Matter Experts (SMEs) from member agencies and unions along with instructional systems designers from the Transportation Learning Center, design curriculum and courseware for the

rail and transit industry. The Signals Consortium is now entering a new phase of work. The Center expects to be able to keep agency contributions low by continuing to leverage resources and subject matter experts from transit rail locations for national standards-based courseware development.

Read on for the latest details on what's been happening.

**Save the date for the next National Signals Consortium meeting: Hosted by TTCI in Pueblo, CO October 22 - 26 2018.**





"I have been involved with this project from the outset, and I am still amazed by the work being completed and the dedication of all involved. Developing and perfecting signal training using both labor and management from across the country has proven to bring out the best in all involved, as well as the best training possible. Combine high-quality, comprehensive training developed utilizing more than 700 years of industry knowledge with the connections made with the industry's best minds from over 20 transit and rail agencies, and it is easy to see that continued participation will pay huge dividends in preparing for the next generation of signal technology.

Addressing the expanding need for high-quality signal training collectively will continue to benefit every agency involved from the CEO to the front-line signal maintainer."

Tim Tarrant  
Brotherhood of Railroad Signalmen

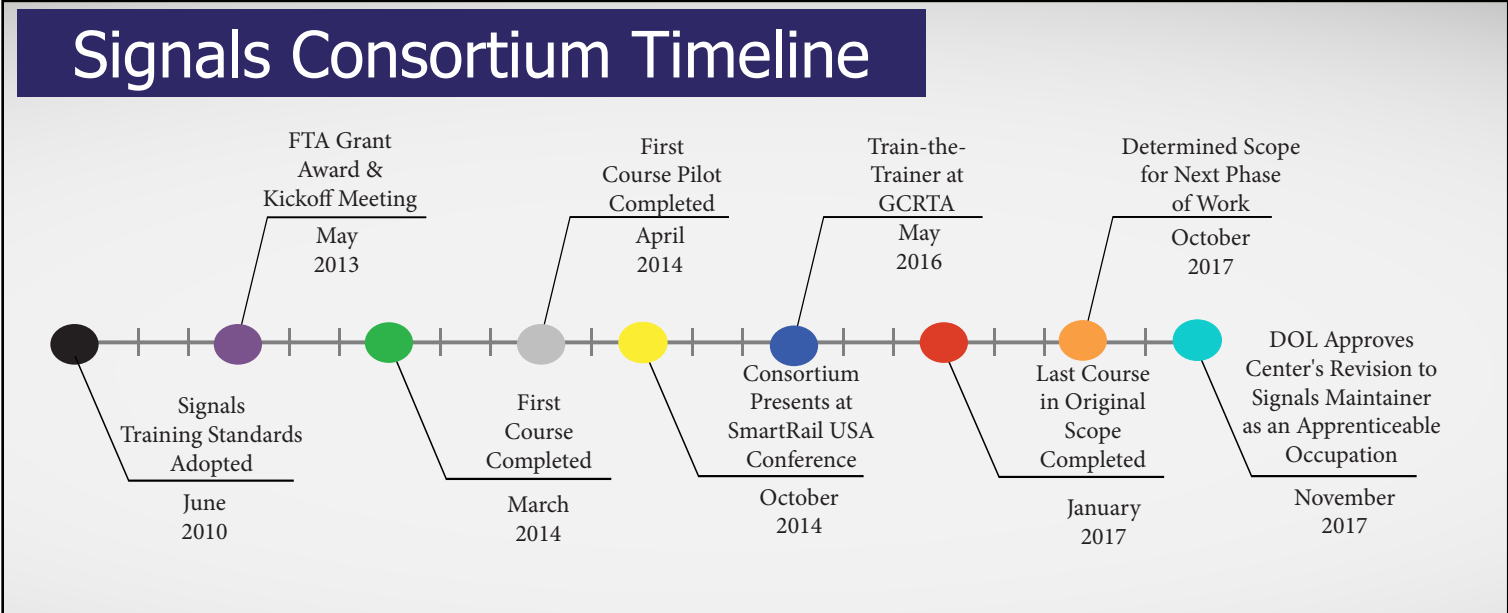
**Consortium  
Co-chairs**



"We were only a year in when I knew that this time it was different, and now after all that sweat equity and the cooperative camaraderie that was created, it would be a terrible waste to end the program just as new technologies, and regulatory requirements are coming on line, and seasoned professionals are retiring off line.

That is why when the Transportation Learning Center's Executive Director, Jack Clark asked SEPTA to continue to provide the continuity and leadership important to the Committee, SEPTA agreed."

Michael Monastero  
Southeastern Pennsylvania Transportation Authority





## More information on What's Happening in the Next Phase of Consortium Work

In addition to ongoing efforts to improve existing courseware and upgrade the [Transit Training Network](#) website, in this next phase of work we plan on leveraging our American Apprenticeship Initiative grant funding through the Department of Labor, to seek college accreditation for Consortium courseware and to assist agencies with apprenticeship implementation. We also want to make a push to pilot the remainder of the existing courseware.

One of the most exciting developments going into the next phase of work is that new Signals courseware development continues. During the latest Signals Consortium meeting in Silver Spring, MD, the group decided on the next two course topics:

- Microprocessors
- Installation and Construction standards

Courseware development teams comprised of member agency subject matter experts and the Center's instructional system designers will begin this work early in the new year.

For information on piloting Consortium courseware at your agency, contact Julie Deibel-Pundt at: [jdeibel@transportcenter.org](mailto:jdeibel@transportcenter.org).



## Consortium Metrics

**25 Instruction Ready Courses**



**Over 350 Hours of Instruction**

**Over 50% of Courses Piloted**



To find out how your organization can continue on and help mold the future of the National Signals Training Consortium, contact Project Manager Julie Deibel-Pundt at

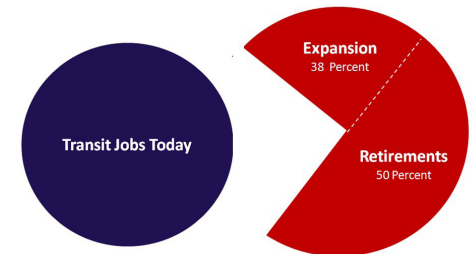
[jdeibel@transportcenter.org](mailto:jdeibel@transportcenter.org).

# Tools for Recruiting the Next Generation of Signal Maintainers

One of the main reasons the National Signals Training Consortium came together in 2013 was because public transportation agencies and their unions wanted to band together to address current and future training needs caused by retirements of current workers and expansion of rail. Because of these factors, it is estimated that in the next 5-10 years, public transportation agencies will need to hire and train 120 percent of their current workforce.

While the standardized training program developed by the consortium efforts will be useful in training new employees, recruitment remains a challenge.

The Center has produced multiple resources which can be used by public transportation locations to help recruit new employees, across multiple occupations, including signals maintenance.



## Signals SMEs Facilitate Transit Core Competencies Curriculum (TC3) Pilot

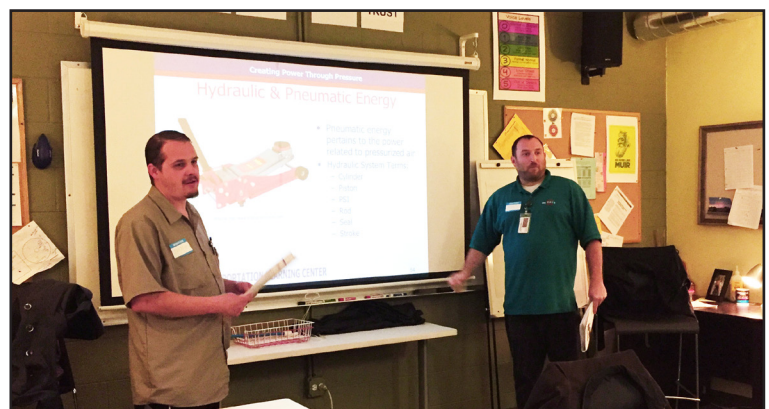


The Transit Core Competencies Curriculum (TC3) serves as a bridge, providing the critical connection in a pathway leading from general

academic and personal competencies developed in school or through workforce development programs to specifically transportation and transit-focused training and education. Designed in a student and instructor-ready interactive and hands-on modular format that can be used in a variety of settings, TC3 helps prepare participants for entry into and success in early training pre-apprenticeship and apprenticeship programs that provide the foundation for frontline careers in the industry. Building upon and strengthening both personal competencies (often called "soft skills") and basic academic competencies in applied contexts, the TC3 modules provide an initial overview of the industry and of

workplace practices and then focus on establishing and strengthening basic required competencies in transit-related technology and maintenance.

This dynamic curriculum has been piloted in three locations so far. In two of these, Boston and Denver, Consortium SMEs were directly involved in the development and delivery of content. In Boston, Lynelle Butterfield and Frank Burnett instructed an introductory module on maintenance in a public transportation setting. In Denver, Corey Petzinger co-taught a module on foundations of electricity. Matt Younce also contributed to this session.



# Center Forges New Partnership with TTCI



This past April, Center staff toured the Transportation Technology Center, Inc. (TTCI) facility in Pueblo, CO. TTCI is a wholly owned subsidiary of the Association of American Railroads that manages a

52-square mile site where testing and research is conducted on new railroad technologies. TTCI also offers training on security and emergency response. Since that time, the Center has partnered with TTCI to develop training materials for Positive Train Control (PTC) technologies.

The Center continues to work to solidify partnerships and find opportunities for collaboration within the industry to strengthen training for public transportation employees broadly. We look forward to finding ways to fold new insights and resources from our partnership with TTCI into the next phase of National Signals Consortium work.



## Additional Benefits of Continued Consortium Involvement

When locations sign a contract to renew for three more years, they also receive:

- 1 - A weeklong train-the-trainer session. This well received course will be taught at your location by one of the Center's qualified instructional designers.
- 2 - 100 hours of technical assistance. Want to customize the generic consortium courseware to fit your specific equipment? Want to conduct a training needs analysis? Have other training development needs? You can use these 100 free hours of remote technical assistance to get started.

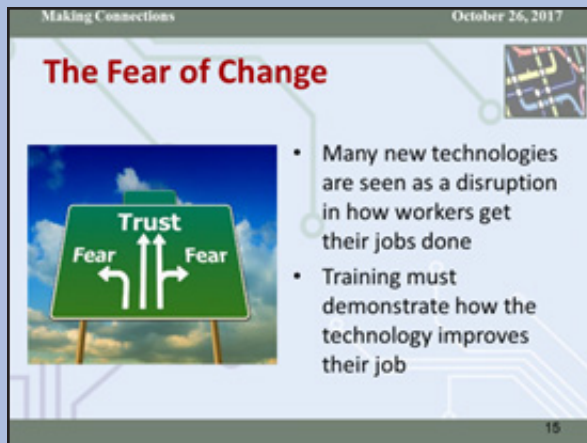


"I was a little skeptical. My skepticism was soon put to rest with the buy-in and dedication of all the members involved. It is truly amazing how we all checked our egos at the door to develop an outstanding product. We have all levels of management and union representatives working together. Wow! As I stated previously, we are making history.

Anthony Forcina - Metro-North Railroad

# Expert Panel Provides Best Practices for Developing Training for New Technologies

During the Center's October 26, "Making Connections" conference, the "Training for New Technologies" workshop gave participants an opportunity to learn to prepare for the challenges of developing and delivering high quality training when new technologies such as Positive Train Control (PTC) are mandated or adopted by an agency.



The following panelists, including two subject matter experts from the Signals Consortium, discussed lessons learned and best practices:

- Joe Brosseau; Director, Communications and Train Control (C&TC); Transportation Technology Center, Inc. (TTCI)
- Melvin Clark; Rail System Safety & Regulatory Compliance Officer; Capital Metro, Austin, TX
- Julie Deibel-Pundt; Program Manager of Instructional Design; Transportation Learning Center
- Anthony Forcina; Executive Director – Positive Train Control; MTA, Metro-North Railroad

Both Anthony Forcina and Melvin Clark provided the perspective from public transportation agencies, focusing mostly on the challenge of implementation – of both the new technologies and of the training that will enable the workforce to use, maintain and repair these new technologies.



Joe Brosseau from TTCI discussed common fallacies and fears around new technology. The main fallacy is that new technology will fix all the problems when the reality is far from that. Not only will the new technology not fix everything but it may also create some new, unforeseen side effects. The fears, specifically from the workforce to be trained, generally come from not being informed of the upcoming technologies.

Joe also talked about overcoming the challenges of developing training for technologies that are still being designed, developed and/or tested. Julie Deibel-Pundt delved further into this issue by illustrating how training for new technologies causes major challenges in the usually straightforward, systematic approach of instructional design.

To view slides from the workshop presentation, visit the Resource Center on the Center's website: [www.transportcenter.org](http://www.transportcenter.org) or follow [this link](#).

For more information, contact Program Manager of Instructional Design Julie Deibel-Pundt at [jdeibel@transportcenter.org](mailto:jdeibel@transportcenter.org).

# Department of Labor Approves Transportation Learning Center Revision to Signals Maintainer as an Apprenticeable Occupation

On November 3, 2017 the Department of Labor approved the Center's revisions to the Work Process Schedule and Related Instructions Outline for Signals Maintainer as an apprenticeable occupation.

This framework was developed by the Signals Training Consortium, a Center-led effort which brings together labor and management from over 20 agencies across the country to develop instruction-ready courseware materials for signals maintainers.



for maximum flexibility with the development of apprenticeship programs. The framework structure is in alignment with the instructional flow and content of the courseware developed in the Signals Consortium. This document is to be used as a guide for transit agencies interested in working with the Center through the American Apprenticeship Initiative to develop or expand apprenticeships for signals maintainers at their location.



This revision adds the hybrid training approach to the existing framework. This approach allows

For more information on the revised Signals Maintainer apprenticeship framework, please click [here](#) or contact Program Manager Tia Brown at [tbrown@transportcenter.org](mailto:tbrown@transportcenter.org).

Interested in piloting Consortium courseware at your location? Contact us!

## Current Members of the National Signals Training Consortium

BART	SEIU 1021	Metro Transit	ATU 1005
CATS		MD MTA	ATU 1300
Capital Metro		NFTA	ATU 1342
DART	ATU 1338	NJ Tranist	BRS
GCRTA	ATU 268	SacRT	IBEW 1245
	IBEW Local 103 Boston	Santa Clara VTA	SEIU 521
MBTA	IBEW 103	SEPTA	TWU 234
Metra	BRS	Sound Transit	ATU 587
Metro North	ACRE		



"The Instructional Systems Design team from the Center work us, the members of the various railroad properties, with patience, diligence and skill. They are organized and experienced in their craft. It is a pleasure working through them on this difficult endeavor. The end result will be courseware that will have consistencies and also will address the differences found throughout the various properties in the USA."

Lynelle Butterfield - Massachusetts Bay Transportation Authority (Retired)/IBEW Local 103

## Center's "Making Connections" Conference Capstones a Week of Major Consortia and Committee Meetings



**Making Connections**  
Workforce Solutions to Keep America Moving



On Friday, October 27, the Center wrapped up a week of productive meetings with its five major consortia and committees:

- Transit Elevator/Escalator Training Consortium
- Signals Training Consortium
- Rail Car Training Consortium
- Transit Coach Operator Committee
- National Joint Bus Maintenance Apprenticeship and Training Committee



During those meetings, subject matter experts comprised of one management representative and one labor representative from over 40 public transportation agencies spent much of the week taking a deep dive into their areas of expertise to discuss, develop, and verify courseware topics, apprenticeship and mentorship models, and industry best practices.

On Thursday the subject matter experts, joined by a good showing of outside conference attendees, came together for the Center's "Making Connections" conference. Here, in three plenary sessions and a series of six workshops, panelists and speakers from agencies, unions, government, and non-profits examined the current trends and future predictions of the public transportation industry as a whole - but always with an eye on people - both the workforce and the riding public.

To watch the videos of the three plenary sessions, visit our Vimeo page at: <https://vimeo.com/user50935266> or click on the links below:

- [Morning Plenary Session](#) - Who Will do the Work: Transit's ongoing Challenge to Recruit, Train, and Retain its Frontline Workforce
- [Lunch Plenary Session](#) - A Vision for the Future of Transportation
- [Closing Plenary Session](#) - Onward & Upward: Transportation in 2030 and Beyond.

## Center Produces Signals Consortium Promo Video

In the lead-up to the October Signals Consortium meeting, the Center produced a promotional video featuring interviews with subject matter experts from several consortium agencies and an introduction by the Center's Executive Director, Jack Clark.

The video adds a new tool to help the Center introduce the Signals Consortium and the consortium model to new agencies.

To watch the video, visit the Center's Vimeo page at: <https://vimeo.com/user50935266> or click on the link below.



"In Boston, we have a pretty well established signals training program. We found the Consortium material was a tremendous supplement to that program. We have been able to take our courses and embed days of the Consortium courses in there. We have gotten rave reviews from the students. So we see it as a very valuable piece of our training program, and we're working with IBEW Local 103 to bring this curriculum into the continuing education program for their electricians."

Frank Burnett - Massachusetts Bay Transportation Authority (Retired)/IBEW Local 103

## Rail Courseware

### ▶ Signals Maintenance

#### Course 100: Orientation

Tags: orientation

The purpose of the *Orientation* course is to assist the participant in being oriented to signaling and train control.

#### Course 101: Introduction and Overview to Track Circuits

Tags: track circuits, signals, introduction, course 101

The purpose of the *Introduction and Overview to Track Circuits* course is to assist the participant in demonstrating proper safety procedures and gaining an overview the functions of switches, derails, and their associated

#### Course 102: Introduction and Overview to Switches and Derails

Tags: switches, switch, signals consortium, derails, derail, course 102, 102

The purpose of the *Introduction and Overview to Switches and Derails* course is to assist the participant in demonstrating proper safety procedures and gaining an overview the functions of switches, derails, and their associated components.

#### Course 103: Introduction and Overview to Train Stops

Tags: trip stops, train stops, signals consortium, signals, course 103

The purpose of the *Introduction and Overview to Train Stops* course is to assist the participant in demonstrating proper safety procedures and gaining an overview the functions of train stops and their associated components.

#### Course 104: Introduction and Overview to Highway Grade Crossings

Tags: signals, highway grade crossing, grade crossing, course 104

The purpose of the *Introduction and Overview to Highway Grade Crossings* course is to provide the participant with an introduction to highway grade crossings. This introduction will include basic terminology, regulations and oversight specific to highway grade crossings, general highway grade crossing components, control circuits and warning systems.

#### Course 201: Inspection and Maintenance of Track Circuits

Tags: track circuits, signals, maintenance, inspection, course 201

The purpose of the *Inspection and Maintenance of Track Circuits* course is to assist the participant in demonstrating safety inspection and maintenance of different type of track circuits used in railwaytransit systems.

#### Course 202: Inspection and Maintenance of Switches and Derails

Tags: switches, safety, maintenance, inspection, derails, 202

The purpose of the *Inspection and Maintenance of Switches and Derails* course is to assist the participant in demonstrating safe inspection and maintenance of switches, derails, and their associated components.

#### Course 203: Inspection and Maintenance of Train Stops

Tags: trip stops, train stops, ded

The purpose of the *Inspection and Maintenance of Switches and Derails* course is to assist the participant in demonstrating safe inspection and maintenance of stops and their associated components.

#### Course 204: Inspection and Maintenance of Highway Grade Crossings

Tags: grade crossings

The purpose of the *Inspection and Maintenance of Grade Crossings* course is to assist the participant in demonstrating proper and safe procedures for inspecting and maintaining highway grade crossings and their associated components.

## Transit Training Network

The Transit Training Network is part of an industry-wide effort aimed at strengthening transit training programs. This website provides a platform for industry occupational training committee members and local training practitioners to view the most updated industry training standards, and share and rate courseware developed by committees or individual agencies. For more information on the website, click "About" above.

To access restricted areas of the website, please click [here](#) and complete the sign-up form. Indicate areas of courseware you are interested in, and a site administrator will contact you to discuss any requirements that may be associated and set up your login. Once logged in, you may also share courseware and other training materials developed by your agency in the Transit Training Forums. To share courseware without a login, please email [info@transportcenter.org](mailto:info@transportcenter.org).



Created and maintained by the Center, the Transit Training Network ([transittraining.net](http://transittraining.net), TTN) provides a platform for transit industry occupational training consortium/committee members and local training practitioners to view the most updated industry training standards, share and rate courseware, and engage in interactive discussions with peers on training related subjects for the frontline workforce.

TTN's training resources are developed by three training consortiums (Signals, Rail Car and Elevator/Escalator) and multiple working groups and committees with

subject matter experts from transit agencies and unions representing frontline workers. By hosting these resources on an online resource library, TTN enables learning and sharing of resources to strengthen frontline training.

Twenty-two instruction-ready courses developed under the Signals Training Consortium have been shared on TTN. For each course there are Participant Guides, Instructor Guides, PowerPoint slides, instructional videos, quizzes, and and job-aids for participants.

#### Course 105: Introduction and Overview to Cab & Wayside Signaling

Tags: wayside, signaling, cbtc, cab, ats, atp, ato, atc, abs

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

#### Course 301: Troubleshooting Track Circuits

Tags: troubleshooting

The purpose of the *Track Circuits Troubleshooting and Repair* course is to assist the participant in gaining in troubleshooting and repairing track circuits and their associated components.

#### Course 106: Introduction and Overview to Interlockings

Tags: interlockings

The purpose of the *Introduction and Overview of Interlockings* is to assist the participant in demonstrating proper safety procedures and gaining an overview of the functions of interlockings and their associated apparatus.

#### Course 304: Troubleshooting Highway Grade Crossings

Tags: troubleshooting, highway, grade crossings, grade crossing, grade

The purpose of the *Highway Grade Crossing Troubleshooting and Repair* course is to assist the participant in gaining in troubleshooting and repairing highway grade crossings and their associated components.

#### Course 302: Troubleshooting Switches and Derails

Tags: troubleshooting, switches, repair, derails

The purpose of the *Switches and Derails Troubleshooting and Repair* course is to assist the participant in gaining knowledge in troubleshooting and repairing switches, derails and their associated components.

#### Course 303: Troubleshooting Train Stops

Tags: train stops

The purpose of the *Train Stops Troubleshooting and Repair* course is to assist the participant in gaining knowledge in troubleshooting and repairing train stops and their associated components.

## Course 305: Cab and Wayside Signaling Troubleshooting and Repair

*Tags: signals*  
The purpose of the *Cab and Wayside Signaling Troubleshooting and Repair* course is to assist the participant in gaining working knowledge in troubleshooting and repairing cab and wayside signals and their associated components.

## Course 205: Inspection and Maintenance of Signaling Systems

*Tags: signals, maintenance, inspection*  
The purpose of the *Inspection and Maintenance of Cab and Wayside Signaling Systems* course is to assist the participant in gaining knowledge on how to inspect and maintain cab and wayside signals and their associated components.

## Course 108: Introduction and Overview to Control Panels

*Tags: control panel*  
The purpose of the *Introduction and Overview of Control Panels* is to assist the participant in gaining an overview of the functions of control panels and their associated components.

## Course 308: Troubleshooting and Repair of Control Panels

*Tags: control panels*  
The purpose of the *Troubleshooting and Repair of Control Panels* course is to assist the participant in gaining knowledge in troubleshooting and repairing control panels and their use in testing and troubleshooting interlockings.

## Course 206: Inspection and Maintenance of Interlockings

*Tags: maintenance, locking tests, interlockings, inspection*  
This course, *Inspection and Maintenance of Interlockings*, assists the participant in demonstrating proper and safe procedures for inspecting and maintaining interlockings and their associated components.

## Course 107: Introduction and Overview to Signaling Power Distribution

*Tags: power distribution*  
The purpose of the *Introduction and Overview of Signaling Power Distribution* course is to provide the participant with an introduction to signal power distribution. This introduction will include basic terminology, regulations and oversight specific to highway grade crossings, general highway grade crossing components, control circuits and warning systems.

## Course 207: Signal Power Distribution Inspection and Maintenance

*Tags: power feed, power distribution, photo-voltaic systems, motor generator sets, circuit equipment*  
Course 207, *Signal Power Distribution Inspection and Maintenance*, is a two-module course that provides steps for participants to follow when inspecting and maintaining signal power distribution systems.

## Course 307: Signal Power Distribution Troubleshooting and Repair

*Tags: verifying signal power distribution, troubleshooting process, troubleshooting, scenario-based problems, electrical prints*  
The purpose of the *Signal Power Troubleshooting and Repair* course is to assist the participant in gaining working knowledge in troubleshooting and repairing signal power distribution systems.

## Course 306: Troubleshooting and Repair of Interlockings

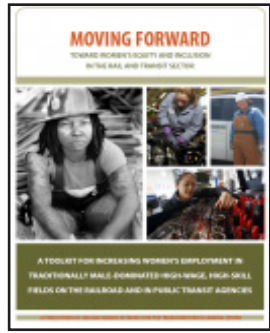
*Tags: troubleshooting process, troubleshooting interlockings, symptoms, scenario-based problems, interlockings, corrective actions*  
The purpose of the *Troubleshooting and Repair of Interlockings* course is to assist the participant in demonstrating proper procedures and gaining knowledge in troubleshooting and repairing signal interlockings.

**T**he **Transportation Learning Center** is a nonprofit organization dedicated to improving public transportation at the national level and within communities. To accomplish this mission, the Center builds labor-management training partnerships that improve organizational performance, expand workforce knowledge, skills and abilities, and promote career advancement.

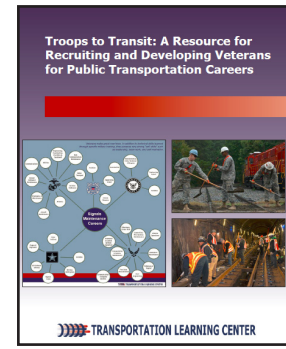
# Recent Publications

**T**he Center has recently produced two publications which can be used in recruitment efforts to attract new employees from two areas of the population that may not have been tapped into previously.

**"Moving Forward Toward Women's Equity and Inclusion in The Rail and Transit Sector"** was developed in conjunction with Chicago Women in Trades.



This toolkit provides resources to increase women's employment in the public transportation industry.

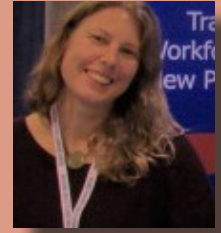


**"Troops to Transit"** is a resources for recruiting and developing veterans for public transportation careers.

Both of these and other useful publications can be found on [www.transportcenter.org](http://www.transportcenter.org) under Resources/Publications and Reports.

*Each issue we will feature one member of our talented ISD and Project team.*

**J**ulie has worked for non-profits for her entire professional career. For the last ten years, she has worked as an instructional designer and project manager for the Center. She has experience in creating content and managing development to meet timelines and strong standards of quality for all three of the Center's national training consortia. She is currently the overall project manager of the National Signals Training Consortium and a PTC training coordination and development project through an industry OEM. Her political savvy, negotiating skills coupled with her close attention to detail and creativity on how to approach projects to keep deadlines contributes strongly to the Center. Julie also has a Masters in Urban Planning.



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