

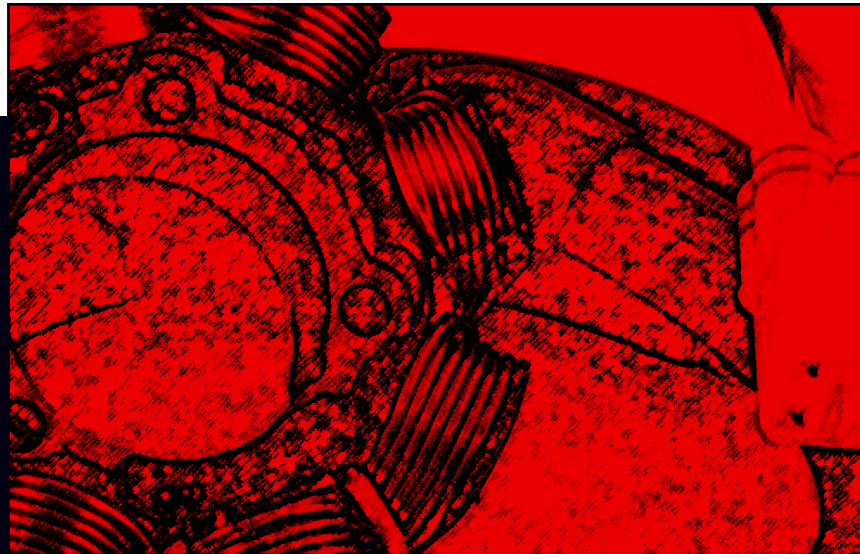
**Learn About:**

- Work safely on DC electrical systems
- Identify & isolate electrical problems
- Use a practical, systematic process for troubleshooting
- Identify and use the right tools for troubleshooting
- Read and interpret wiring diagrams and schematics
- Apply basic electrical formulas and theory
- Identify & locate common DC electrical components
- Learn how to use electrical test equipment
- Learn the hazards of working with electricity
- Develop safe work practices

# DC ELECTRICAL SYSTEMS

## *for Mobile Vehicles & Equipment*

**Develop effective troubleshooting skills and processes to eliminate wasted time and guesswork!**



**A 2-Day Electrical Systems Course for Fleet and Mobile Equipment Maintenance Technicians**

- This seminar can also be presented at your facility for larger groups
- Reserve your space now! **CALL 1-877-978-7246**
- Check us out online at **live.TPCTraining.com** for a complete listing of all seminars coming to your area



# DC ELECTRICAL SYSTEMS

## for Mobile Vehicles & Equipment

### SEMINAR OVERVIEW

DC electrical systems are more common and more complex all over the world and TPC Trainco now offers a 2 day seminar that focuses solely on that. Students will learn safety, identifying electrical problems, troubleshooting, using the correct tools, wiring diagrams and more.

DC (Direct Current) electricity is the same the world over – all manufacturers have to do the same things with this current, regardless of the manufacturer or color of the equipment. Because we are not affiliated with any manufacturer, the knowledge gained in this training will be applicable to all types and sizes of equipment and vehicles. Students will come out of this training seminar with a deep understanding of DC systems in mobile vehicles and equipment.

### TRAINING OUTCOMES

While attending this course students will not only be given a refresher covering the fundamentals, theory and components involved with DC electrical systems, but they will also gain an in-depth knowledge of how to safely and accurately troubleshoot these systems so they can quickly determine which components are necessary to replace. And because we know time is money, this seminar is designed to have immediate impact so that you can start eliminating costly guesswork on your repairs today. Training like this never costs – it pays!

- Work safely on DC electrical systems
- Identify & isolate electrical problems
- Use a practical, systematic process for troubleshooting
- Identify and use the right tools
- Read and interpret wiring diagrams and schematics
- Apply basic electrical formulas and theory to their work
- Identify & locate common DC electrical components

### WHO SHOULD ATTEND?

Attendees to this seminar come from a wide variety of industries, skill levels, company sizes and job titles, so if you're not sure you will fit in or will benefit from the class, don't worry – you will – as long as your job involves pumps. From the apprentice mechanic to the seasoned engineer, this course successfully addresses the questions and concerns of all those who need centrifugal and industrial pump knowledge.

### CONTINUING EDUCATION UNITS

Upon completion of this seminar, the student will receive a three-star certification of completion with 8 classroom hours (.8 TPC Trainco CEUs) per day attended. Most employers and many government agencies accept TPC Trainco CEUs to fulfill their continuing education requirements.

### TESTING & CERTIFICATION

Our optional ATMT® testing and certification sets the standard for measuring maintenance worker knowledge. Employers can use it to assess training needs prior to training or to measure training outcomes, or as documentation for a qualified electrical worker program or other internal safety or training program. Individuals use our testing and certification to demonstrate knowledge to a current or potential employer.

Our exams can be done online or on paper. The paper exam can be taken in a proctored or non-proctored setting. If you would like to take the paper test in a proctored setting, a manager in your company must apply to become a proctor with TPC Trainco.

Please contact our Testing Administrator at 303-867-5035 or at [testing@tpctrainco.com](mailto:testing@tpctrainco.com) for a study guide or exam orders, proctor applications, or specific certification questions.

### OUR EXPERT INSTRUCTORS

Our team of 60 field-experienced instructors is the backbone of training seminar schedule, from HVAC certification and maintenance to PLC courses. Together they've logged more than 200,000 hours in the classroom — by far the deepest experience in the industry.

Our instructors must meet three core requirements:

- Relevant formal education in the seminar topic area
- Documented hands-on work experience
- Specific experience as a maintenance training instructor

Many of our instructors' credentials extend even further, including experience as authors, speakers, and industry organization board members within their fields of expertise. And they stay current on technology and industry trends through their own ongoing education, field visits, and peer review meetings.

### TRAINING PHILOSOPHY

Our training is designed with practical, real-world facility and industrial applications in mind. It is unbiased, unaffiliated and non-commercial so you are assured of a real education and not a product sales pitch. It focuses less on theory and more on the actual steps students need to properly maintain equipment or fix specific problems at their own plant or facility.

Our instructors will simplify the subject matter for the novice or go in-depth to answer an engineer's toughest question. We have over thousands of hours of experience of live classroom training using these methods, and it is why our students keep coming back.

# SEMINAR OVERVIEW

## DAY ONE - DISCUSSION TOPICS

Day One starts with the fundamentals of DC systems. Students learn the background of DC electricity including components. They'll move on to wiring and diagrams to get a better understanding of circuit design and current flow.

### History and Evolution

- 6V
- 12V
- 24V
- 36V
- Theory
- AC & DC Electricity
- Creating & Storing Electricity
- Current Flow
- Ohm's Law
- Electricity & Magnetism

### Components

- Batteries
- Conductors & Insulators
- Control Devices
- Circuit Protection Devices
- Generators & Alternators
- DC Motors
- Semiconductors
- Microprocessors

### Wiring Diagrams & Schematics

- Symbols
- Layout
- Component State & Function
- Understanding Circuit Design
- Understanding Current Flow
- Locating Conflicts

## DAY TWO - DISCUSSION TOPICS

Day Two is all about troubleshooting: How to spot problems, assess them, and repair them.

### Troubleshooting Tools & Equipment

- Basic Tools
- Meters
- Scopes
- Scanners
- Charts and References
- Internet and Other Resources

### Troubleshooting Process

- Have A Systematic Approach
- Using the Service Manual
- Locating Components
- Understanding Illustrations and Drawings
- Determining Equipment to Use
- Testing Components
- Wave forms
- Tricks & Other Methods

### Troubleshooting Case Studies and Exercises

- Where to Start
- Theory of Operation
- Using the Diagrams
- Choosing the Equipment
- Testing
- Understanding the Results of the Test
- Making Decisions

### Verifying the Fix

## SEMINAR AGENDA

7:30 am	Registration
8:00 am	Class Begins
12:00 -1:00 pm	Lunch (on your own)
4:30 pm	Class Ends

## SEMINAR FEE

\$1100 Both Days

## NO RISK REGISTRATION & MONEY-BACK GUARANTEE

If you're not yet sure you'll be able to attend this seminar, we can still hold a spot for you in the class. While payment is due prior to the start of the seminar, you may choose a full refund or credit for cancellations made at least 24 hours in advance. Substitutions are also freely allowed. Please register early!

## IN-HOUSE TRAINING

TPC Trainco offers an extensive list of courses available for convenient, in-house training at your facility. We can provide the same expert air conditioning, boilers, HVAC, facility and plant management, Fluid hydraulics, piping, and electrical training courses at your facility that we offer in public seminars.


### Advantages of On-Site Training

1. Modify the content to your specific needs
2. Protect company privacy
3. Workers remain on site in case of an emergency
4. Saves time and travel costs
5. Instructors can discuss your specific equipment
6. Problems can be openly discussed
7. Flexible scheduling
8. Increased price savings as the groups get larger
9. Promote teamwork & camaraderie among workers
10. More comfortable learning environment

Contact us if you have any questions and to get a no-obligation quote.

Reserve Your Space Risk-Free!


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 ***"An eye opener... I wish all my co-workers could attend."***

Donald S. - Maintenance Mechanic

 ***"Instructor showed a lot of enthusiasm and knowledge. Excellent!"***

Tom M - Plant Operator

 ***"I appreciate that you are not pushing any products - just information."***