

Registration Form  
Name \_\_\_\_\_  
Title \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_  
State/Province \_\_\_\_\_  
Zip/Postal  
Code \_\_\_\_\_  
Phone \_\_\_\_\_  
Email \_\_\_\_\_

**Registration Amount -- \$495**

Registration form cannot be accepted without accompanying payment either via online registration or in the form of a check. If registering by mail, send completed form and check in U.S. funds to AARS, PO Box 200, LaFox, IL 60147. All reservations must be received in the AARS office by October 24, 2015. After that date, reservations will be accepted on a first-come, first-served basis. All cancellations are subject to a \$75 service charge. HOTEL RESERVATIONS: Hotel reservations must be made directly with the **Sheraton Philadelphia University City Hotel 3549 Chestnut St. Philadelphia, PA 19104 215-387-8000**, specify your attendance at the AARS Derailment Seminar to obtain the special rate of \$179/night.

**Who should attend:**  
Railroad Managers  
Superintendents  
Trainmasters  
Field Engineers  
Mechanical Officers  
Railway Engineers  
Local, State & Federal Officials (FRA, DOT)  
Industrial Plant Managers  
Engineering Consultants  
Environmental Specialists

**Why attend:**  
By attending the AARS Derailment Seminar, participants will gain:

A working knowledge of basic track structure, performance, causes of common problems;

Examination of detail on axle loads, traffic density, operating speeds;

Optimal learning potential with presentations on railroad turnouts, crossings with details handling spots;

More effective on the job performance, using course-provided critical information;

Practical answers to your basic questions about yard derailments;

The latest information about methods and technologies used in current railroading practice and applicable rules, regulations, and standards.

# The American Association of Railroad Superintendents

Presents

## Derailment Investigation

By

**Mr. Gary Wolf,  
Wolf Railway  
Consulting**

**November 9-10, 2015  
Sheraton Philadelphia  
University City  
*Register online at*  
[www.supt.org](http://www.supt.org)**

## Monday, Nov. 9

### **8:00 Introduction**

Course Objectives and Goals  
What is a Derailment?  
Derailment Myths and Misconceptions  
Industry Statistics  
L/V Ratio  
Wheel Climb Factors  
Rail Rollover Factors

### **10:00 Break**

### **10:15 Track and Engineering Issues**

Elements and Basics of the Track Structure  
Rail Identification  
Rail Wear and Effect on Rollover Potential  
Broken Rail Derailments  
Fasteners (Spikes and Clips)  
Crossties, Differential Plate Cutting

### **12:00 Lunch**

### **1:00 pm Continuation of Track Issues**

Ballast and Subgrade  
Rail Anchors  
Track Buckle Derailments  
Curve Superelevations Issues  
Switches & Turnouts (Wedges)

### **2:30 Break**

### **2:45 Continuation of Track Issues**

Rail Lubrication  
Track Crosslevel and Twist  
FRA Track Safety Standards – Gage, Crosslevel, Elevations, Horizontal Alignment, Recording And Plotting Measurements

### **4:30 Mechanical Issues**

Car and Casting Identification  
The Anatomy of the Three Piece Truck  
Side Frame Bottoms  
Purpose of Friction Dampers (Wedges)

### **5:00 Adjourn**

## Tuesday, November 4

**8:00 Continuation of Mechanical Issues**  
Wedge Rise, Harmonic Rock and Roll  
Vertical Bounce, Track Hunting,  
Curving Mechanics and the Warped Truck

### **10:00 Break**

**10:15 Continuation of Mechanical Issues**  
Conventional Side Bearings  
Influence of Tight Side Bearings On Derailments  
Constant Contact Side Bearings  
Centerbowl/Centerplate Issues  
Stiff Truck Derailments  
New Car Syndrome

### **12:00 Lunch**

### **1:00 pm Continuation of Mechanical Issues**

Frame Bracing Issues  
Wheels:  
Thin/Vertical Flange, Tread Wear, Wheel Profile Issues, Wheel Flange Angle, Hollow Worn Wheels, Wheel Tapes

Back-to-Back Measurements  
Bearings and Bearing Adapters  
Roller Bearing Failure Derailments  
Mechanical Inspections Forms and Data

### **2:00 Track/Train Dynamic Issues**

Air Brake Issues, Emergencies and UDE's  
Locomotive Independent Brake Issues  
How to read and interpret Event Recorder Data

Excessive Draft Force, Stringlining  
Excessive Buff Force, Jackknifing, Rail Roll Over

Tractive Effort  
Dynamic Breaking Effort  
Slack Action Derailments  
Train Make-Up and Car Placements

### **3:00 Break**

### **3:15 Human Factor Causes**

Statistics and Typical Causes  
A Systematic Approach to Human Factor Derailments  
Team Approaches to Prevention of Human Factor Causes

## Tuesday, continued

### **4:00 Site Investigation Techniques (The Derailment Dozen)**

Overview – 12 Steps to a Successful

Investigation

- Safety at Site
- D&A Testing
- Train Documentation
- Crew Interview
- Photo/Videos
- Metallurgical Specimen Handling
- Event Recorder Data
- Finding the POD
- Using Rail Marks as Investigative Tools
- Finding First Wheel to Derail
- Car/Mechanical Measurements
- Track/Engineering Measurements

### **5:00 Adjourn**

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**Presented by:  
The American  
Association of Railroad  
Superintendents**

[www.railroadsuperintendents.org](http://www.railroadsuperintendents.org)