

*FEDERAL RAILROAD  
ADMINISTRATION*

*OFFICE OF SAFETY*



*FY 2004 Technical Training  
Course Catalog*

*SAFETY IMPROVEMENT  
&  
DEVELOPMENT TEAM*

## Foreword

This course catalog is provided as a service to our internal Office of Safety customers, which includes participating state inspectors and program managers. The courses listed are the only ones we contemplate providing during FY 2004, but this is subject to change if the needs of the Office of Safety dictate.

The catalog includes the current FY 2004 Training Calendar. Changes are made in the calendar occasionally, and updates will be provided when these changes occur. When reviewing the catalog, please bear in mind:

1. Technical training is based on organizational needs, and is therefore considered mandatory. Various types of analyses are performed to determine the organizational needs, including feedback from Headquarters, the regions, and the inspectors.
2. The training is intended for internal customers. Although we may invite people from the NTSB, Transport Canada, etc., to attend on occasion, we do not provide training for external customers from other governmental or civilian organizations. We simply do not have the resources to do so.
3. We do not honor requests to attend particular courses or classes. We use a specific methodology to ensure training is offered to Federal and State Inspectors and Specialists in a fiscally responsible and equitable manner. The SIDT Management Analyst conducts the selection process both for principal and alternate participants.
4. The SIDT Program Assistant prepares training travel orders for Federal and Participating State Inspectors and Specialists assigned to attend training. Except for unusual circumstances, we do **not** issue training travel orders for Regional and Deputy Regional Administrators. If a Regional Administrator or Deputy Regional Administrator wishes to attend an in-house class, they may do so, but will travel on their annual order. The same holds true for State Program Managers, unless they are also listed as an active inspector. They may attend courses, but must travel at state expense.
5. When we plan and budget for contractor training, we cannot take the groups mentioned above into account. Therefore, if someone from this group wishes to attend a contractor course, they must receive prior approval from the Deputy Associate Administrator for Safety. **In no case** will a slot allotted to an inspector or specialist be used to accommodate people from this group.
6. Current policy is that Chief Inspectors will be scheduled only for courses that relate to their previous discipline of expertise, general courses, or for courses developed specifically for them.
7. Current policy dictates that GS-5 and GS7 level trainees do **not** attend formal training classes developed for journey level inspectors, except for attendance at Multi-Regional Conference Workshops. A specific program of training, which consists primarily of one-on-one tutelage with experienced inspectors, has been developed for trainees at these grade levels. As a rule of thumb, the same standard applies to participating state inspector trainees.

**FY 2004 Technical Training Calendar**

**Revised Date: 09/22/2003**

<b>Class ID</b>	<b>Course ID</b>	<b>Course Name</b>	<b>Arrive</b>	<b>Depart</b>
0401	MP&E 201	MP&E Fundamentals	01/11/04	01/16/04
0402	OP 212	Operating Rules - Methods of Operation	01/11/04	01/16/04
0403	GN 103	State Manager's Executive Committee Meeting	01/12/04	01/15/04
0404	GN 208	FRA Report Writing Principles for Federal Employees	01/12/04	01/16/04
0405	GN 208	FRA Report Writing Principles for Federal Employees	02/09/04	02/13/04
0406	Track 204B	Track Recurrency	02/09/04	02/13/04
0407	MP&E 205	MP&E Recurrency 2004	02/23/04	02/27/04
0408	Track 204B	Track Recurrency	02/23/04	02/27/04
0409	OP 212	Operating Rules - Methods of Operation	03/07/04	03/12/04
0410	GN 202	Investigative Skills Fundamentals	03/08/04	03/12/04
0411	HM 209	Fundamentals of Shipping Explosives	03/08/04	03/12/04
0412	S&TC 208	SAFETLAN Advanced Signal Technology	03/08/04	03/12/04
0413	MP&E 205	MP&E Recurrency 2004	03/15/04	03/19/04
0414	Track 204B	Track Recurrency	03/15/04	03/18/04
0415	GN 0101	Multi-Regional Conference	03/28/04	04/02/04
0416	S&TC 208	SAFETLAN Advanced Signal Technology	04/12/04	04/16/04
0417	HM 201	Hazardous Materials Fundamentals	04/18/04	04/23/04
0418	OP 210	Train Handling Techniques	04/18/04	04/23/04
0419	S&TC 204C	S&TC Recurrency 2004	04/19/04	04/23/04
0420	Track 204B	Track Recurrency	04/19/04	04/23/04
0421	GN 0101	Multi-Regional Conference	05/02/04	05/07/04
0422	HM 208	Hazmat Violation Report Writing	05/17/04	05/21/04
0423	OP 207A	OP Recurrency 2004	05/17/04	05/21/04
0424	S&TC 204C	S&TC Recurrency 2004	05/17/04	05/21/04
0425	S&TC 208	SAFETLAN Advanced Signal Technology	05/17/04	05/21/04
0426	Track 204B	Track Recurrency	05/17/04	05/21/04
0427	GN 0101	Multi-Regional Conference	06/06/04	06/11/04
0428	S&TC 208	SAFETLAN Advanced Signal Technology	06/14/04	06/18/04
0429	HM 208	Hazmat Violation Report Writing	06/21/04	06/25/04
0430	MP&E 205	MP&E Recurrency 2004	06/21/04	06/25/04
0431	OP 207A	OP Recurrency 2004	06/21/04	06/25/04
0432	S&TC 204C	S&TC Recurrency 2004	06/21/04	06/25/04
0433	MP&E 205	MP&E Recurrency 2004	06/28/04	07/02/04
0434	Track 205	Track Investigative & Reporting	07/11/04	07/16/04
0435	HM 208	Hazmat Violation Report Writing	07/12/04	07/16/04
0436	OP 207A	OP Recurrency 2004	07/12/04	07/16/04
0437	S&TC 204C	S&TC Recurrency 2004	07/12/04	07/16/04
0438	MP&E 203	Passenger Equipment Safety Standards	07/18/04	07/23/04
0439	S&TC 207	Microprocessor Technology - Fundamentals	07/19/04	07/23/04
0440	GN 207	Accident Investigation Fundamentals	07/25/04	07/30/04
0441	Track 201	Track Safety Standards - Fundamentals	07/25/04	07/30/04
0442	HM 208	Hazmat Violation Report Writing	08/02/04	08/06/04
0443	MP&E 301	Steam Locomotive Inspection Fundamentals	08/08/04	08/13/04
0444	OP 207A	OP Recurrency 2004	08/09/04	08/13/04
0445	GN 208	FRA Report Writing Principles for Federal Employees	08/16/04	08/20/04
0446	OP 207A	OP Recurrency 2004	08/23/04	08/27/04
0447	OP 201A	OP Fundamentals - Phase One	08/30/04	09/03/04

## 2004 Multi-Regional Conferences

The three multi-regional conferences scheduled for 2004 will all be at:

The Orleans Hotel & Casino  
 4500 West Tropicana Avenue  
 Las Vegas, NV 89103  
 1-800-675-3267 • 702-365-7111

Sometime in December 2003 or January 2004, The SIDT will advise each person via e-mail of their conference assignment. Attendance is scheduled, generally, as shown in the table below. Each region will be expected to hold back no less than three, nor more than six people to protect in the event of emergencies. Computer specialists will attend with their region. Trespass and Highway-Rail Crossing staff will attend as indicated in the table, not with their region. All RRS Administrative Employees will attend the June 6 conference, and not with their region.

Dates	Attended By
March 28 to April 1	Regions 4, 5, and 8, selected HQ Specialists, Grade Crossing Division
May 2 to 6	Regions 1, 6, and 7, selected HQ Specialists, State Manager Meeting
June 6 to 10	Regions 2 and 3, selected HQ Specialists, All HQ and Regional RRS Administrative Employees

Day	Time	Agenda Outline
Sunday	3 to 7 p.m.	Registration
Monday	8 to 11:30 a.m.	General Session
Monday	1 to 4:30 p.m.	Regional Meetings (The Grade Crossing Division, State Managers, and Administrative Employees will have their own meetings on Monday afternoon)
Tuesday	All Day	Various Workshops by the Office of Administration. There will be separate workshops for participating state inspectors. The state managers will have their own meeting on Tuesday.
Wednesday	All Day	Discipline Specific Workshops. (The Grade Crossing Division, State Managers, and Administrative Employees will have their own meetings)
Thursday	All Day	Discipline Specific Workshops. (The Grade Crossing Division, State Managers, and Administrative Employees will have their own meetings)
Friday		Depart

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
<i>GN 101</i>	<i>N/A</i>	<i>None</i>	<i>Contractor</i>

***Course Name***

The Railroad - What It Is, What It Does

***Description and Objectives***

Description: This is a correspondence course from The Railway Education Bureau (REB) that will be completed by all grade level GS-5 or GS-7 FRA inspector trainees. This course provides a historical look at the railroad, from the coal fed iron horses to the computer-assisted system in use today.

The objective of this course is to provide a basic understanding of what a railroad is, with an overview of such subjects as, history, cars, peripheral equipment, passenger services, engineering, law, accounting, administration, organization, and operations. The course includes the following eight modules:

1. Railroad Technology, The Route System.
2. The Track: Alignment and Structure.
3. The Locomotive.
4. The Railroad Car and the Train.
5. Signals and Communication, Railroad Operation.
6. Car Types, Terminal Operations, Classification and Blocking.
7. Shipping, Unit-Trains, Intermodal Traffic, Rail Passenger Services.
8. Railroad Organization.

Regional managers should notify Barbara Hall, SIDT Management Analyst, via e-mail when a person is employed as a GS-5 or GS-7 level inspector trainee. Ms. Hall will arrange to send the course to the appropriate region for assignment. Grading of the correspondence lessons is performed by the REB, who will send the graded lessons to the SIDT Program Assistant for verification. The SIDT Program Assistant will forward the lessons to the appropriate Regional Administrator for further review and interface with the trainee.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
<i>GN 202</i>	<i>24</i>	<i>None</i>	<i>Contractor</i>

***Course Name***

Investigative Skills Fundamentals

***Description and Objectives***

Description: This course is for those who are expected to perform a FRA investigation. The course focuses on developing interviewing, photography, and note taking skills. The course consists of interactive lectures and a field trip. Practical exercises are built around a grade crossing accident scenario. Each class will be monitored by a FRA training specialist to ensure field trip safety and to answer questions about FRA's witness interviewing policies.

Objectives: At the completion of the course, participants will be able to:

1. Use their FRA provided cameras to photograph an accident site.
2. Prepare notes including a photo log.
3. Conduct an interview.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
GN 207	34	GN-202	FRA

### *Course Name*

Accident Investigation Fundamentals

### *Description and Objectives*

Description: This course is intended for those who may be required to perform a FRA assigned accident investigation. There are nine learning modules covering: FRA's statutory and regulatory authority for conducting investigations, communication guidelines, how to use mind-mapping techniques to list and prioritize information gathering objectives, note taking and interviewing skills reinforcement, alcohol and drug involvement, locomotive event recorders, hazardous materials involvement, and FRA accident reporting requirements.

The course consists of a series of short interactive lectures using a slide presentation and participant guides, followed by practical exercises for each of the modules. A building block concept is used for the practical exercises so that the learning lessons are reinforced throughout the course. There is a 40 question pre and post test designed to evaluate participant knowledge levels at the beginning and at the end of the course.

Objectives: At the completion of the course, participants will be able to:

1. Recognize their statutory and regulatory authority to investigate accidents.
2. Analyze accident reports submitted by railroads to FRA.
3. Use mind mapping techniques to list and prioritize communication and investigative objectives.
4. Identify note taking and interview requirements, policies, and techniques.
5. Organize and gather data relating to locomotive event recorders, alcohol and drug, and hazardous materials involvement.
6. Prepare a FRA F6180.39 Factual Railroad Accident Investigation Report.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
GN 208	24	None	FRA and USDA Graduate School

***Course Name***

FRA Report Writing Principles for Federal Employees

***Description and Objectives***

Description: This course is intended for Federal Office of Safety Employees who are required to write and edit reports. The lessons include grammar and editing elements; general writing principles; report classifications; and planning and organizing reports. The course consists of a series of short interactive lectures using slide presentations and participant guides, followed by practical team exercises for each learning module.

Objectives: At the completion of the course, participants will be able to:

1. Define the purpose and scope of a report, according to the needs of the reader.
2. Organize and outline material.
3. Write sentences and paragraphs which follow the principles of clear, concise government writing.
4. Format report data, according to the purpose of the report.
5. Write reports that will be clear to the reader at the first reading.
6. Revise and edit reports, according to the principles of effective writing.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
HM 201	36	None	FRA

### *Course Name*

Hazardous Materials Fundamentals

### *Description and Objectives*

Description: This course provides recently hired journey level Federal and State Hazardous Materials Inspectors, and GS-9 level HM Trainees with the knowledge, skills, and abilities necessary to perform inspections at their grade level. The course is an overview of the following: Hazmat Enforcement Manual, FRA Field Orientation and Training Guide, AAR Specification for Tank Cars-M1002, 49 CFR Parts 171, 172, 173, 174, 178, 179 and 180.

This course consists of a series of short interactive lectures using a slide presentation and participant guides, followed by practical team exercises for each learning module. Practice exercises will consist of situational scenarios and group discussions. There is a multiple choice pre and post test designed to evaluate participant knowledge levels at the beginning and end of the course.

Objectives: At the completion of this course, participants will be able to:

1. Apply appropriate FRA Hazmat regulations when performing site inspections.
2. Recognize fundamental deviations from the regulations.
3. Prepare a F6180.96 inspection report based on a given scenario.
4. Identify the railroad and/or shipper's responsibility for achieving compliance.
5. Recognize inspector discretion with respect to reporting non-compliance with Federal and International regulations.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
HM 208	24	None	FRA

***Course Name***

Hazmat Violation Report Writing

***Description and Objectives***

Description: This course is intended for all Federal and State Hazmat Inspectors. The course provides an overview of the FRA requirements for utilizing violations as an enforcement tool, gathering applicable documents to support the claim, and the steps necessary to properly prepare the report. The course consists of a series of short interactive lectures, using a slide presentation and participant guides, followed by practice team exercises involving realistic scenarios for each learning module. A building block concept is used and incorporated into practical exercises of each module, so that learning lessons are reinforced throughout the course. There is a multiple choice pre and post test designed to evaluate participant knowledge levels at the beginning and end of the course.

Objectives: At the conclusion of the training, participants will be able to:

1. List the enforcement actions available to effectively handle non-compliant Hazmat issues.
2. Gather the documents needed to support the violation report.
3. Determine if individual civil penalty actions are appropriate.
4. Prepare a F6180.67 violation report.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
HM 209	24	None	TSI

***Course Name***

Fundamentals of Shipping Explosives

***Description and Objectives***

Description: This course is intended for Federal Hazmat Inspectors as an introduction to the fundamentals of shipping Class 1 (Explosives). The training will provide an overview of the various types of explosives/compatibility groups, segregation requirements, classifying Class 1 materials, EX numbers, packaging requirements, and the relationship between US DOT and other agencies such as ATF.

Objectives: At the conclusion of the training, participants will be able to:

1. Understand the fundamentals of shipping Class 1 (Explosives)
2. Determine how to mark, label, placard, and package Explosives
3. Identify segregation & separation requirements.

This course is for Federal Inspectors only.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
MP&E 201	36	None	FRA

***Course Name***

MP&E Fundamentals

***Description and Objectives***

Description: This course provides recently hired journey level Motive Power and Equipment Safety Inspectors, and GS-9 level MP&E Trainees with the knowledge, skills, and abilities necessary to perform inspections at their grade level. The course is an overview of the following MP&E categories of inspection, and consists of separate learning modules on the following; Freight Car Safety Standards, Blue Signal Display, Rear End Marker Device, Safety Glazing Standards, Locomotives Safety Standards, Safety Appliances Standards, Brake System Safety Standards for Freight, Passenger Equipment Safety Standards, and Railroad Inspection System for Personal Computer (RISPC).

The course consists of a series of short interactive lectures, using a slide presentation, participant guides, and job aids, followed by practical team exercises for each learning module.

Objectives: At the completion of the course, participants will be able to:

1. Recall appropriate FRA Safety Standards during MP&E inspections.
2. Recognize deviations from the standards.
3. Explain inspector discretion.
4. Apply the criteria in Part 209, Appendix A when considering a recommendation for a civil penalty and/or individual liability.
5. Prepare a F6180.96 inspection report based on a given scenario using the Railroad Inspection System for Personal Computer (RISPC) program.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
MP&E 203	32	None	FRA

### ***Course Name***

Passenger Equipment Safety Standards

### ***Description and Objectives***

Description: This course is intended for Motive Power & Equipment Inspectors, Specialists, and Chief Inspectors assigned to perform inspections of passenger equipment for compliance with Federal regulations. This course will provide individuals with the knowledge, skills, and abilities necessary to perform all inspections and/or observations associated with passenger equipment.

The course consists of a series of interactive lectures using a slide presentation and participant guides, followed by practical exercises for each learning module. Participants will perform both interior and exterior inspections of passenger equipment, and apply the Passenger Equipment Safety Standards. In addition, case studies and scenarios will be used by the participants to determine compliance with training, qualification, periodic maintenance, inspection and testing requirements.

Objectives: At the completion of the course, participants will be able to:

1. Apply the FRA Passenger Equipment Safety Standards.
2. Recognize deviations from the standards.
3. Determine if an inspection, testing and maintenance plan is in compliance.
4. Determine if a training, qualification and designation program is in compliance.
5. Match mechanical items required to be inspected during the exterior and interior calendar day inspections.
6. Cite periodic mechanical inspection interval for passenger equipment excluding motive power.
7. Match mechanical items required to be inspected during the periodic mechanical inspection.
8. Cite periodic brake equipment maintenance intervals for brake systems used in passenger service.
9. List wheel defects that would trigger a Single Car Test.
10. Compute the percentage of operative brakes based on a given scenario.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
MP&E 205	24	None	FRA

***Course Name***

MP&E Recurrency 2004

***Description and Objectives***

Description: This course is intended for all MP&E Specialists and Federal/State journey level inspectors. This course is an overview of various MP&E activities in connection with inspection reports, violation reports, special notice for repair reports, activity codes, and defect/non-defect codes. This course will also provide participants with a thorough overview of the new MP&E Compliance Manual.

The course consists of a series of short interactive lectures using a slide presentation, participant guides, and job aids, followed by practical team exercises for each learning module.

Objectives: At the completion of the course, participants will be able to:

1. Prepare a MP&E Violation Report (F6180.109), based on a given scenario.
2. Prepare a Special Notice for Repair Report (F6180.8), based on a given scenario.
3. Recall appropriate MP&E activity codes.
4. Use appropriate MP&E defect/non-defect codes.
5. Use the MP&E Compliance Manual.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
<i>MP&amp;E 301C</i>	<i>36</i>	<i>MP&amp;E 301</i>	<i>FRA/Contractor</i>

### ***Course Name***

Steam Locomotive Inspection Fundamentals

### ***Description and Objectives***

Description: This course is intended for Federal GS-12 or GS-13 Motive Power & Equipment Inspectors, Specialists, and Chief Inspectors assigned to perform steam locomotive inspections. This course will provide individuals with the knowledge, skills, and abilities necessary to perform steam locomotive inspections to determine compliance with Federal Regulations.

Participants will receive classroom lecture in conjunction with a slide presentation and participant guide. Lectures will focus on steam locomotive design, operation, maintenance, repair, feedwater systems, valve gear, and running gear. Participants will also engage in a series of practical exercises emphasizing maintenance, repair and/or alteration procedure, and inspection methodologies on both exterior and interior portions of the boiler proper, firebox, smokebox, tender, and running gear. Although there are no prerequisites for attending other courses prior to attending this training, those selected must:

- Be willing and able to perform inspections inside confined spaces that are likely to be foul with dirt; and,
- Read the book titled "Fundamentals of the Steam Locomotive". (This book will be furnished by the SIDT upon request.)

Objectives: At the completion of this course, participants will be able to:

1. Apply FRA Inspection and Maintenance Standards when inspecting steam locomotives.
2. Recognize FRA policies and/or directives when inspecting steam locomotives.
3. Identify deviations from the standards.
4. Understand steam locomotive construction, classification, operation, and boiler configuration.
5. Identify Non-destructive Examination (NDE) processes and procedure.
6. Differentiate between an accepted national standard and an established railroad practice for repairs and alterations to boilers.
7. Apply the logic path associated with objectives 1, 5 and 6.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
OP 201A	24	None	FRA

***Course Name***

OP Fundamentals - Phase One

***Description and Objectives***

Description: This course is intended for recently hired Federal and State Operating Practices Inspectors. During this course, each inspector will have an opportunity to learn the fundamentals of conducting routine operating practices inspections.

This course introduces the participants to 49 CFR Parts 217, 218, 220, 221 and a review of the OP Compliance Manual, with emphasis on the Focused Inspection approach and the Switching Operations Fatality Analysis initiative. The course will also emphasize personal safety requirements when performing inspections on or about railroad tracks or property. The course mixes classroom learning examples with simulated exercises to gain an application level knowledge of topics covered.

The course is divided into two separate week-long courses, with Phase Two covering 49 CFR Parts 219, 225, 228, 238, and 240.

Objectives: At the conclusion of this course participants will be able to:

1. Explain how each item of personal safety equipment is used by inspectors.
2. Favor the correct interpersonal skills necessary to perform quality inspections.
3. Select the appropriate methods for addressing safety issues identified during inspections.
4. Discuss the philosophy of operations testing.
5. Recognize the preparatory responsibilities of inspectors conducting onboard train inspections and yard inspections.
6. Ensure compliance with blue signal protection and utility employee provisions of Part 218 within a railroad yard.
7. Ensure compliance with 49CFR Part 220 and associated railroad operating rules.
8. Ensure compliance with 49CFR Part 221.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
OP 207A	32	None	FRA

### *Course Name*

OP Recurrency 2004

### *Description and Objectives*

Description: The course is intended for all Federal and State Operating Practices Inspectors who may be assigned to perform a FRA inspection, complaint investigation, waiver investigation, violation report, or individual liability action. There are seven learning modules covering roadway worker protection, waiver petitions, enforcement actions against railroads, inspection reports, complaint investigation, individual liability, and violation reports.

The course consists of a series of short interactive lectures using a PowerPoint slide presentation and participant guides, followed by practical exercises for each of the modules. The participants, using a given practical exercise, write a complaint investigation memorandum, inspection report, violation report, and a regional warning letter. A building block concept is used for the practical exercises so that the learning lessons are reinforced throughout the course. There is a 25 question, multiple choice, pre and post test that is designed to evaluate participant knowledge levels at the beginning and end of the course.

Objectives: At the completion of the course, participants will be able to:

1. List the procedures for issuance of a permanent or temporary waiver petition.
2. Prepare an inspection report (F6180.96) based on a given practical exercise.
3. Perform complaint investigations in accordance with FRA policy.
4. Prepare a complaint investigation memorandum based on a given scenario.
5. Identify the six types of enforcement tools available against railroads, and the seven factors that should be analyzed in determining whether or not to recommend civil penalties.
6. Prepare violation reports.
7. Identify the types of individual liability tools available for use by FRA.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
<i>OP 210</i>	<i>32</i>	<i>None</i>	<i>Contractor</i>

***Course Name***

Train Handling Techniques

***Description and Objectives***

Description: This course is intended for all Operating Practices Inspectors, Specialists, and Chief Inspectors with an OP background. It will provide an overview of locomotive and car air brake systems, including a review of the newer control valve features (i.e., ABDX), brake systems on longer cars (i.e., stack cars and spine cars), new technology electronic air brake systems, ICE systems, track train dynamics, and train handling techniques as demonstrated by locomotive simulator practice time. The course includes a four hour module delivered by FRA, to ensure participants are aware of, and adhere to, FRA policy and protocols when applying the learning to inspection activities.

Objectives: At the conclusion of the training, participants will be able to:

1. Select a particular territory and train, for inspection based on specific criteria.
2. Organize various data sources for analysis (accident, grade, maintenance, etc.).
3. Determine the appropriate interpersonal skills necessary to perform a quality inspection.
4. Select the appropriate methods for addressing safety issues identified during the inspection.
5. Explain the various train air brake systems and appliances on locomotives and cars, including new technologies.
6. Demonstrate train handling techniques used by the BNSF Railroad.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
OP 212	36	None	Contractor

### ***Course Name***

Operating Rules - Methods of Operation

### ***Description and Objectives***

Description: This course provides participants with a detailed understanding of the railroad industry operating rules, particular to methods of operation. The rules covered are those in effect according to the following codes of operating rules: GCOR, NORAC, CSX, and NS. The course will also emphasize personal safety requirements when performing inspections on or about railroad tracks and property. The course mixes classroom learning examples with simulated exercises, to gain an application level knowledge of the methods of operation in effect in the rail industry.

Objectives: At the conclusion of this course, participants will be able to:

1. Explain how each item of personal safety equipment is used by inspectors when conducting inspections.
2. Demonstrate knowledge of commonly used signal aspects and indications, and be able to apply rules to train operations.
3. Interpret and apply instructions contained in a typical railroad timetable. Interpret and apply special instructions and track warrants in a simulated train run.
4. Demonstrate knowledge of the rules governing authority for the movement of trains at the application level, included in GCOR, NORAC, CSX and NS rule books, through simulated train runs.
5. Identify, at the application level, the various signal aspects and indications included in GCOR, NORAC, CSX and NS rule books.
6. Detect non-compliance with operating rules in a simulated train ride exercise.
7. Demonstrate understanding and application of railroad operating rules by completion of a comprehensive rules exam.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
<i>S&amp;TC 204C</i>	<i>24</i>	<i>None</i>	<i>FRA</i>

***Course Name***

S&TC Recurrency 2004

***Description and Objectives***

Description: This course is intended for all Federal and State S&TC inspectors who may be assigned to perform FRA inspections and investigations on a variety of signal systems and components currently in use in the rail industry.

The course consists of a series of short interactive lectures using a PowerPoint slide presentation and participant guides, followed by practical team exercises. The participants review proper inspection techniques and current FRA inspection policies, learn how to accurately perform 236 Subpart H inspections, learn correct Part 234 inspection procedures and identify recent changes to Part 234 and 236 regulations. A building block concept is used for the practical exercises so that the learning lessons are reinforced throughout the course. There is a multiple choice, pre-test and post-test designed to evaluate participant knowledge levels at the beginning and end of the course.

Objectives: At the completion of the course, participants will be able to:

1. Apply interpretative requirements of the Part 234 and Part 236 Compliance Manuals.
2. Outline how new signal technologies relate to S&TC regulations.
3. Explain the general operation of new S&TC system technologies.
4. Outline the relevant sections of Part 236, Subpart H.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
<i>S&amp;TC 207</i>	<i>32</i>	<i>None</i>	<i>Contractor</i>

### ***Course Name***

Microprocessor Technology - Fundamentals

### ***Description and Objectives***

Description: This course is intended for all Federal and State inspectors who may be assigned to perform FRA inspections and investigations on a variety of signal systems and components currently in use in the rail industry.

The course consists of a series of short interactive lectures using a PowerPoint slide presentation and participant guides, followed by practical team exercises in a qualified laboratory. The participants review the standard practices of troubleshooting and analyzing specific types of electronic, and advanced microprocessor based systems and the various software configurations utilized in today's railroad signal and train control applications. A building block concept is used for the practical exercises, so that the learning lessons are reinforced throughout the course. There is a multiple choice, pre and post test designed to evaluate participant knowledge levels at the beginning and end of the course.

Objectives: At the completion of the course, participants will be able to:

1. Compare the functioning of vital and non-vital programmable logic controllers.
2. Identify basic ladder logic and executive software design.
3. Compare microprocessor design with conventional signal circuit design.
4. Recognize logic software features used in microprocessor based signal systems.
5. Identify microprocessor design printed documentation and software programming information printouts, and the various ways of analyzing and interpreting S&TC computerized event logs.
6. Explain the correct ways to store event log and/or event recorder data and summarize computerized event log information.
7. Prepare event log information for report and presentation purposes.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
<i>S&amp;TC 208</i>	<i>24</i>	<i>None</i>	<i>Contractor</i>

***Course Name***

Safetran Advanced Signal Technology

***Description and Objectives***

Description: This course is intended for all Federal and State inspectors who may be assigned to perform FRA inspections and investigations on a variety of signal systems and components, currently in use in the rail industry manufactured by the Safetran Corporation.

The course consists of a series of short interactive lectures using a PowerPoint slide presentation and participant guides, followed by practical team exercises in a qualified laboratory. The participants review the standard practices of troubleshooting and analyzing specific types of electronic and advanced microprocessor based systems, and the various software configurations utilized in the various Safetran signal and train control systems. A building block concept is used for the practical exercises so that the learning lessons are reinforced throughout the course.

Objectives: At the completion of the course, participants will be able to:

1. Recognize the various Safetran signal systems and components.
2. Explain the operation, function, and proper inspection methods of GCP 3000 systems, SEAR II event logging systems, and GEO signal systems and components.
3. Explain the operation, function, and proper inspection methods of Solid State Crossing Controller system.
4. Explain the correct ways to store event log and/or event recorder data, regarding all Safetran systems.
5. Summarize computerized event log information.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
Track 201	36	None	FRA

### ***Course Name***

Track Safety Standards - Fundamentals

### ***Description and Objectives***

Description: This course introduces the participants to 49 CFR Part 213 Subparts A-F Track Safety Standards, general railroad industry safety requirements, and personal safety requirements, when inspectors are on or about the railroads' tracks or property. The course combines classroom learning examples with practical field exercises to gain hands-on experience about the rail industry.

Objectives: At the completion of the course, participants will be able to:

1. Explain how each item of personal safety equipment is used by inspectors when conducting a track inspection.
2. Relate commonly used track terms to actual components in the track structure.
3. Interpret a typical railroad timetable and track chart/profile.
4. Apply railroad safety procedures for the safe operation of a hi-rail vehicle.
5. Use the inspection tools that are necessary to conduct a track inspection.
6. Interpret and analyze data generated by the Automated Track Inspection Program.
7. Clarify the minimum requirements for each subpart of 49 CFR Part 213.
8. Apply the Track Safety Standards and the Track Compliance Manual guidelines during inspections.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
Track 204B	24	None	FRA

### *Course Name*

Track Recurrency 2004

### *Description and Objectives*

Description: This course introduces participants to iPAQ and DTN (Digital Track Notebook) technology. Track inspectors will be trained in this new electronic technology that allows easy access to the regulations contained in 49 CFR Part 213, Track Safety Standards, and quick calculations on simplified worksheets that automate evaluation of equations in the safety standards. This aids the inspector by rapidly capturing and transferring the necessary track measurements and information directly into a digital data acquisition system with the capability to record vital information, then print the inspection information through RISPC, and is adaptable to contain customized railroad rules, procedures, and industry telephone numbers and addresses.

Objectives: At the completion of the course, participants will be able to:

1. Install and synchronize the FRA computer iPAQ and DTN software applications, including customizing voice and note taking features.
2. Understand DTN applications in order to generate a F6180.96 track inspection report.
3. Demonstrate the transfer of track measurements and rule information directly into the DTN using the capability to record and print information through RISPC.
4. Interpret and analyze data generated by the Automated Track Inspection Program downloadable through the DTN, locating track exceptions using the GPS application.
5. Demonstrate the ability to access 49 CFR Part 213, Track Safety Standards using Reg-Trieve.
6. Demonstrate quick calculation methods using automated worksheets to arrive at correct determination of values for given defects.

<i>Course_ID</i>	<i>Hours</i>	<i>Prerequisite</i>	<i>Source</i>
Track 205	32	None	FRA

### ***Course Name***

Track Investigative & Reporting

### ***Description and Objectives***

Description: This course is intended for all Federal and State Track Inspectors. There are six learning modules covering waiver petitions, enforcement actions against railroads, complaint investigations, inspection reports, individual liability, and violation reports.

The course consists of a series of short interactive lectures using a PowerPoint slide presentation and participant guides, followed by practical team exercises. A building block concept is used for the practical exercises so that the learning lessons are reinforced throughout the course. There is a multiple choice, pre and post test designed to evaluate participant knowledge levels at the beginning and end of the course.

Objectives: At the completion of the course, participants will be able to:

1. List the procedures for issuance of a permanent or temporary waiver petition.
2. List the enforcement actions available against railroads.
3. Write a narrative complaint investigation report.
4. Complete a track inspection report.
5. Write a violation report using Form FRA F6180.67.
6. Determine if individual civil penalty actions are advisable for willful conduct.
7. Prepare a regional warning letter for individual liability.