

**Federal  
Railroad  
Administration**

**Railroad Signal International  
Crossing Safety and Signaling Showcase  
August 14, 2014**

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## *Our Focus*

**The mission of the Federal Railroad Administration (FRA)** is to enable the safe, reliable, and efficient movement of people and goods for a strong America, now and in the future.

- Safety is our number one priority
- We are laying a foundation for higher performing rail
- Promulgating and enforcing rail safety regulations
- Investing in America's rail corridors
- Facilitating and conducting research and technology development

**Vision:** *RAIL— Moving America Forward*



## *Safety is our number one priority*

### Rail Has Never Been Safer

Every regulation and enforcement action we issue is based on facts and sound research. New records in safety have been achieved four of the past five years.

- Over the past decade, train accidents have declined 47 percent
- Highway-rail grade crossing accidents are down 35 percent

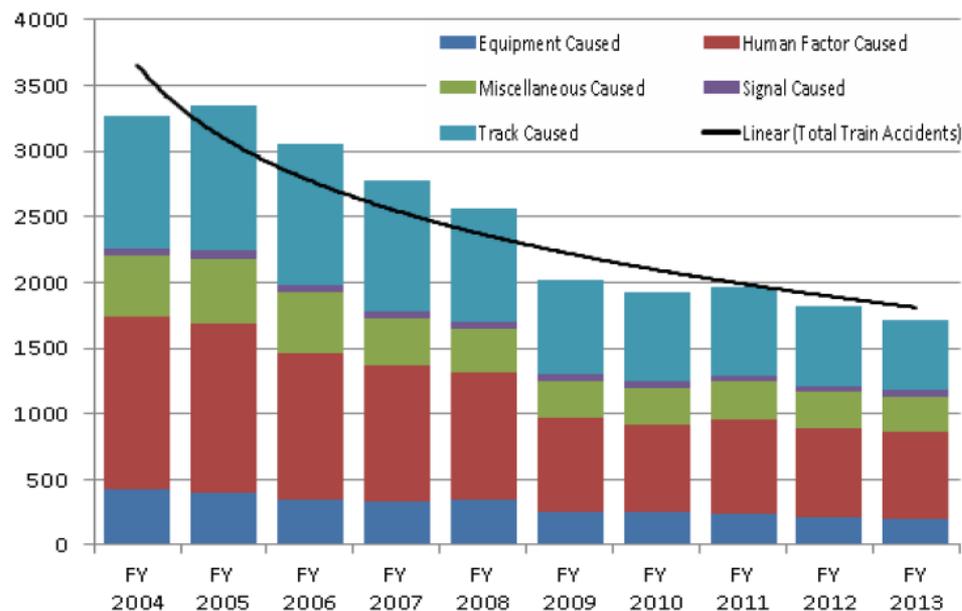
And employee fatalities have been reduced by 59 percent



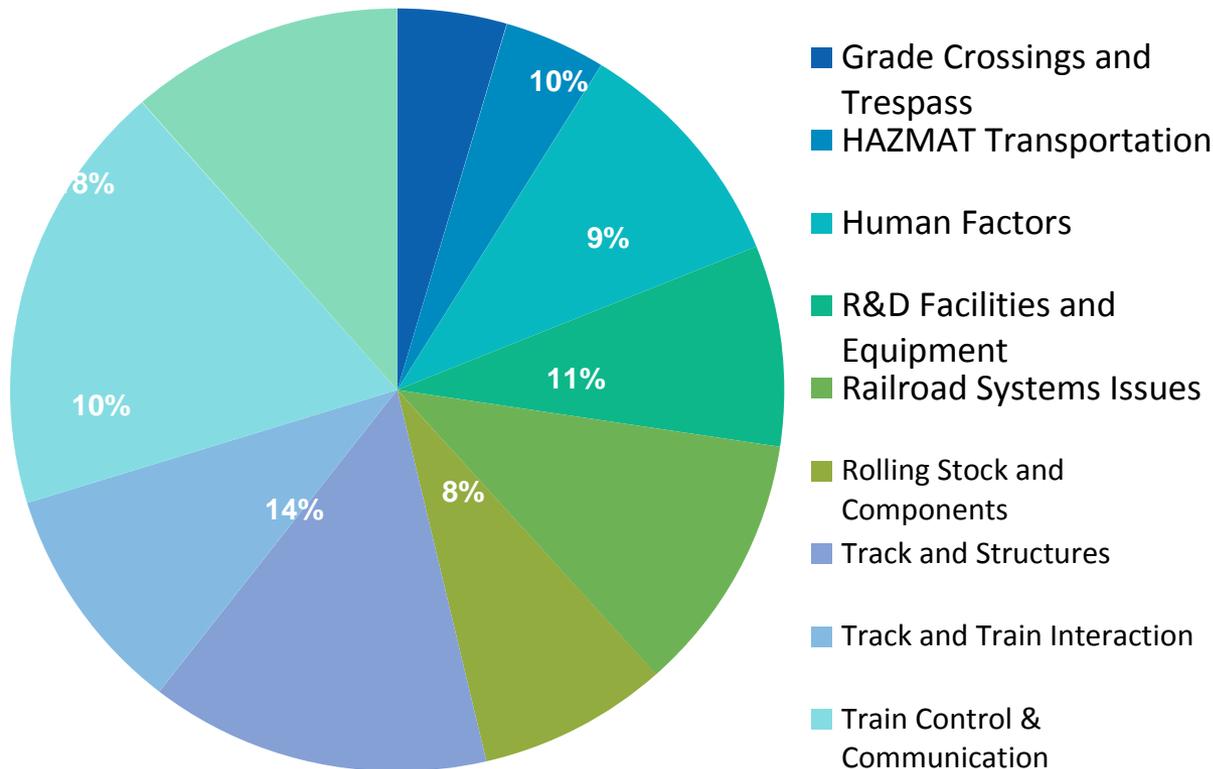
### Ten-Year Trend for Accident Reductions

\*Fiscal Year Representing Absolute Numbers

Source: FRA

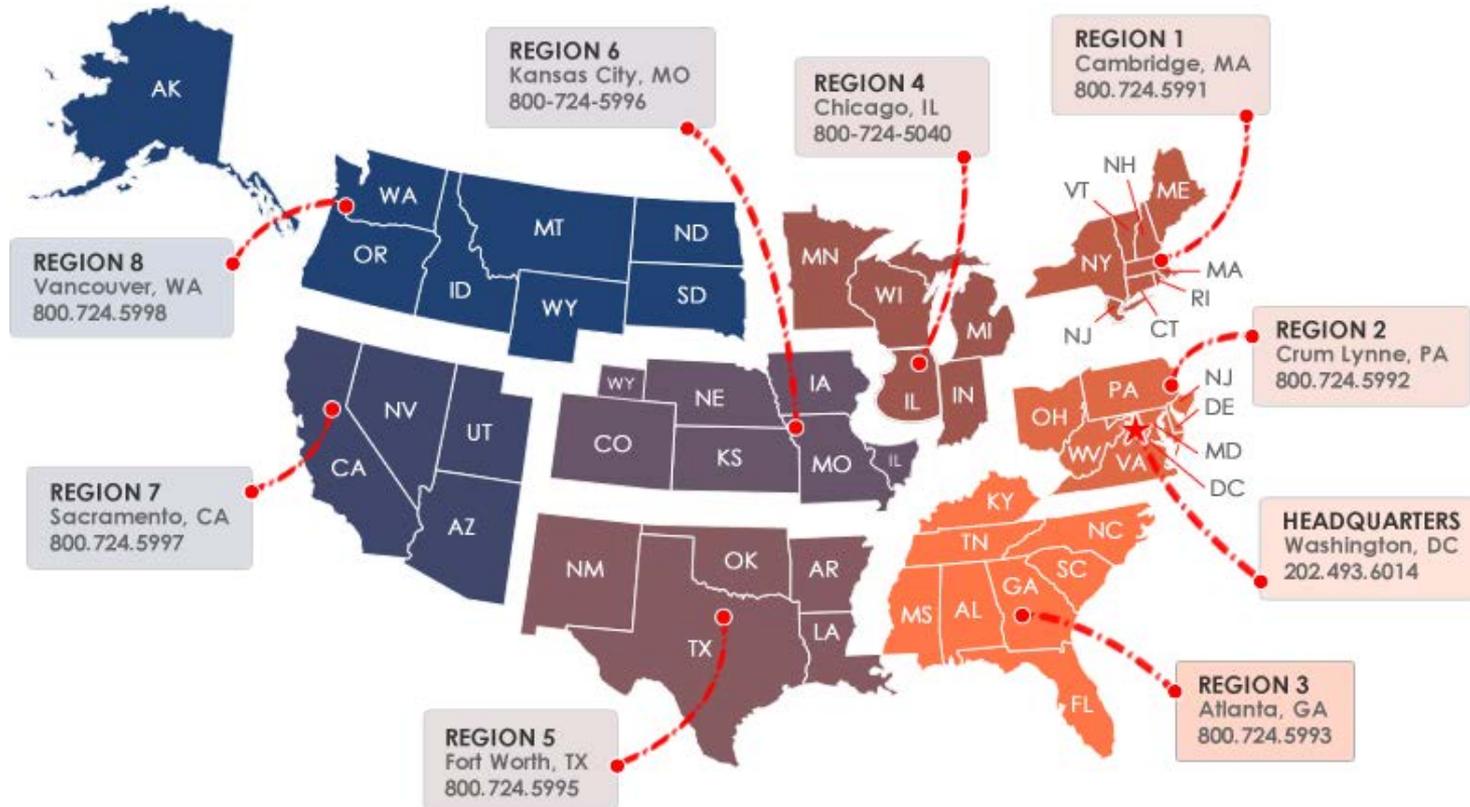


## Investments in Research and Development



Since 2006, we have steadily invested nearly \$35 million in research and development annually.

## Office of Railroad Safety—Signal & Train Control Division



## 2013 Signal & Train Control Inspection Data

Region	Inspection Reports	Inspection Days	Units	Sub Units	Defects Taken	Defect Ratio	Recom. Violation	Violation Ratio	Railroads Inspected	Companies Inspected
1	859	802	7629	20523	2967	0.39	28	0.0037	84	2
2	1256	1135	7299	43000	2762	0.38	48	0.0066	135	18
3	1482	1395	15745	40670	3896	0.25	46	0.0029	114	7
4	988	867	7435	16094	2138	0.29	51	0.0069	109	10
5	868	752	7005	23302	1693	0.24	27	0.0039	113	2
6	882	682	5547	13223	1732	0.31	107	0.0193	79	9
7	980	852	6687	31406	1897	0.28	16	0.0024	103	6
8	598	573	4110	26752	3311	0.81	137	0.0333	62	5
<b>Total</b>	<b>7913</b>	<b>7058</b>	<b>61457</b>	<b>214970</b>	<b>20396</b>	<b>0.3319</b>	<b>460</b>	<b>0.0075</b>	<b>799</b>	<b>59</b>

7, 913 Signal & Train Control Inspection Reports

61, 457 Signal Units Inspected

20, 396 Defects Taken – 33% Defect Ratio

460 Violations Recommended - .75% Violation Ratio

## **Title 49 Code of Federal Regulations Part 234:**

- Grade Crossing Signal Systems Safety.  
(59 FR 50086, September 30, 1994) Final Rule;  
Effective 1/1/1995
- Grade Crossing Signal Systems Safety.  
(61 FR 31802, June 20, 1996) Interim Final Rule
- State Highway-Rail Grade Crossing Action Plans.  
(75 FR 36551, June 28, 2010) Final Rule
  - Rail Safety Improvement Act of 2008; Section 202
- Systems for Telephonic Notification of Unsafe Conditions at Highway-Rail and Pathway Grade Crossings.  
(77 FR 35164, June 12, 2012) Final Rule
  - Rail Safety Improvement Act of 2008; Section 205

## Part 234—Grade Crossing Safety, Including Signal Systems, State Action Plans, And Emergency Notification Systems

### §234.5 Definitions:

- **Activation Failure**—Highway-Rail Grade Crossing Warning System Provides Less Than 20 Seconds Of Warning Time
  - This failure indicates to the motorist that it is safe to proceed across the railroad tracks when, in fact, it is not safe to do so
  - §234.9 Each railroad shall report to the to FRA within 15 days each AF occurrence on FRA Form No. 6180-83

# Federal Railroad Administration

## §234.9 Grade crossing signal system failure reports.

Each railroad shall report to FRA within 15 days each activation failure

**HIGHWAY-RAIL GRADE CROSSING WARNING SYSTEM ACTIVATION FAILURE REPORT**  
OMB Approval No. 2150-0034

Public reporting burden for this information collection is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any aspect of this collection of information, including suggestions for reducing the burden, to Washington Headquarters Office, Paperwork Reduction Project (2150-0034), Washington, DC 20503.

Each railroad shall submit a report of each activation failure to FRA within 15 days after the failure occurs. Copies of this form may be obtained from the Federal Railroad Administration's web site at [www.fra.dot.gov](http://www.fra.dot.gov).

An activation failure means the failure of an active highway-rail grade crossing warning system to indicate the approach of a train at least 20 seconds prior to the train's arrival at the crossing, or to indicate the presence of a train occupying the crossing, unless the crossing is provided with an alternative means of active warning to highway users of approaching trains. (This failure indicates to the motorist that it is safe to proceed across the railroad tracks when, in fact, it is not safe to do so.)

A train means one or more locomotives, with or without cars.

<b>Mailed to:</b>  Federal Railroad Administration Regional Administrator	<b>Name of Railroad</b>	<b>RR Code</b>
	<b>Region/Division (Optional)</b>	
	<b>Reporting Employee (Signature/Title)</b>	<b>Date Signed</b>
	<b>DOT Crossing Number</b>	
	<b>Accident/Incident Involved?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No (Defined in 49 CFR Section 225.5)	

**CLASSIFICATION**

Current Active Warning Device: (Check all that apply)

1  Gales    2  Cantilevered Flashing Lights    3  Flashing Lights    4  Wig Wags    5  Hwy. Traffic Signals    6  Bell  
7  Other (Describe)

**LOCATION**

Street/Road	County/Parish	City	State	RR Mile Post
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**CORRECTIVE ACTION**

Failure Reported/Discovered Date (mm/dd/yyyy)	Time <input type="checkbox"/> AM <input type="checkbox"/> PM	Repairs Completed Date (mm/dd/yyyy)	Time <input type="checkbox"/> AM <input type="checkbox"/> PM
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<b>Cause of Failure Code (Primary &amp; Secondary Required)</b>		<input type="checkbox"/> <input type="checkbox"/>	<b>Provide a Brief Explanation of Failure:</b>
<b>1 Power</b> a Commercial b Railroad c Batteries d Chargers/Transformers e Power Stages f Lightning (Poles, Arresters) g Loose Connections/Physd Wires h Other	<b>2 Rail</b> a Shady b Contaminants on Rail c Contaminants on Train Wheels d Broken Rail e Shorted Rail f Track Connections g Other	<b>3 Equipment</b> a Relays b Motion Detector c Constant Warning Time Device d Other Train Detection (e.g. AFD) e Shunt/Coupler f Crossing Controller g Lamps h Cable, Wiring Harness, or Grounds i Other	
	<b>4 Human Factor</b> a Interference b Vandalism c Design d Testing e Maintenance Procedures f Communication Procedures g Adjustments h Other		

FRA F 6180 83 Rev: 09/19/2011      OMB approval expires 09/30/2013

## Calendar Year 2013:

- Highway-Rail Grade Crossing Collisions: 2,089
- Highway-Rail Grade Crossing Fatalities: 249
- Highway-Rail Grade Crossing Injuries: 952
- Trespasser Fatalities: 462
- Trespasser Injuries: 432
- Activation Failures: 364



## §234.309 Emergency Notification System



## §234.317 Compliance Dates



## §234.261 Highway Traffic Signal Pre-emption



Drawing Courtesy of NTSB: Midland, TX



## Safety Advisories

- **Safety Advisory 2013–04**
  - Importance of Procedures for Temporary Removal From Service of Grade Crossing and Wayside Signal Systems
- **Safety Advisory 2010–03**
  - Sounding Locomotive Horn, Especially at/or Near Grade Crossings, Regardless of Whether Located in Quiet Zones
- **Safety Advisory 2010–02**
  - Signal Recording Devices for Interconnected Highway Traffic Signal Systems.

<http://www.fra.dot.gov/eLib>

## Technical Bulletins

- **S-13-01:** Duration of Wayside Horn Sounding at Highway-Rail Grade Crossings
- **S-12-01:** Appropriate Process for the Inspection of Highway-Rail Grade Crossing Warning System Pre-emption Interconnections with Highway Traffic Signals
- **S-09-02:** Necessary Approval for Signal-Related Results of Inspections and Tests; Electronic Recordkeeping

<http://www.fra.dot.gov/eLib>

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