



National Transportation Safety Board

Washington, DC 20594

Office of the Chairman

July 5, 2016

The Honorable Ron Wyden
United States Senate
221 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Jeff Merkley
United States Senate
313 Hart Senate Office Building
Washington, DC 20510

Dear Senator Wyden and Senator Merkley:

Thank you for your June 9, 2016, letter regarding the recent crude-by-rail accident that occurred in Mosier, Oregon on June 3, 2016. While we did not launch a full investigative team, the National Transportation Safety Board (NTSB) recognizes the impact of this accident on your constituents and understands the concerns of those affected. Accordingly, we are actively collecting and assessing information from the FRA and Union Pacific to determine whether this accident warrants additional recommendations.

The NTSB has been long concerned about the integrity of rail tank cars and the transport of hazardous materials. That is why we included this issue on our Most Wanted List of Transportation Safety Improvements. Over the last decade, we have investigated a number of rail tank car derailment accidents and have issued a total of twelve safety recommendations to the Federal Railroad Administration (FRA) and the Pipeline and Hazardous Materials Safety Administration (PHMSA).

In addition, as you are aware, we will be holding a roundtable on July 13, 2016, which will look at the current state of flammable liquid tank car retrofits and replacements mandated by the FAST Act. The meeting is intended to discuss issues that are critical to ensuring timely implementation of new safety standards for the existing tank car fleet, including those that were involved in the Oregon derailment. Invitations to participate in the roundtable have been extended to individuals from Oregon representing industry and regulatory oversight, and we will provide your staff an update when more information regarding their participation is available.

We take your concerns very seriously and we look forward to working with both of your offices to ensure that NTSB safety recommendations relative to tank car performance, railroad emergency response, and community emergency planning are aggressively implemented to avoid and mitigate the severity of future accidents. Meanwhile, I trust that the enclosed responses to your questions will provide you the information you are seeking regarding rail tank car safety.

NTSB Responses to Senator Wyden and Merkley's letter dated June 9, 2016

1. Please explain why the NTSB decided not to send an investigatory team to the Mosier derailment.

Based upon information we gathered from the Federal Railroad Administration (FRA), the operator (Union Pacific), and local responders to understand the circumstances related to the accident, the NTSB decided not to launch on the Mosier derailment due to limited resources and the current investigative workload in the Office of Railroad, Pipeline and Hazardous Materials Investigations (RPH). This information indicated that the circumstances of this accident did not pose any new significant safety issues. The tank cars were breached in a manner similar to those that we have seen in other accident investigations. In addition, the derailment resulted in no injuries or fatalities. Although we did not send an investigative team, RPH investigative staff have been in close communication with the FRA and are gathering facts to determine if there are any new significant safety issues.

2. Given that the NTSB has been investigating multiple freight and passenger rail accidents in recent years, does the NTSB have sufficient resources to carry out its safety mission as related to crude-by-rail and other accidents involving unit trains of Class 3 flammable liquids? In answering this question, please include information regarding:

a. The number of rail investigators the NTSB employs;

The NTSB has 13 railroad investigators on staff. The 13 investigators include 3 each for the specialties of track, signal and train control, and motive power and equipment. In addition, there are 4 specialists in railroad operations. The railroad investigators are also supported by 2 human performance investigators and 2 survival factors investigators as well as recorder specialists, metallurgists, and fire investigators. A typical launch team is composed of an investigator-in-charge (IIC) and an investigator from each of the specialty areas. Therefore, a launch requires the resources of 5 to 7 investigators (plus many other staff during the course of the investigation).

b. The number of hazardous materials investigators the NTSB employs;

The NTSB has 3 hazardous materials investigators on staff. These investigators support hazardous material release investigations in all modes of transportation.

c. The number of open investigations in the railroad and hazardous materials divisions, respectively, and the number of employees who are or were devoted to each investigation;

There are 23 open investigations in the Railroad Division and 4 open investigations in the Hazardous Materials Division. Depending on the type of accident, (e.g. freight or passenger service) and whether there are certain safety issues involved, such as tank cars, the RPH generally has 5-7 investigators investigating each accident. Investigators typically

support multiple investigations simultaneously. Each investigator investigates a specific portion of the accident, such as operations, signals, track, mechanical, or hazardous materials. Additional investigators from the RPH Human Performance and Survival Factors Division, and those from other NTSB offices, may also be assigned to an investigation.

- d. Any additional activities, such as forums, that the divisions currently have planned or recently completed, and the number of employees devoted to each;**

Railroad staff recently presented their findings for both the WMATA L'Enfant Plaza Electrical Arcing and Smoke Accident (January 12, 2015) and the Philadelphia Amtrak Derailment (May 12, 2015) at Board meetings on May 3 and May 17, 2016, respectively. All of the railroad investigators were involved in these two investigations. In addition, one of our hazardous materials investigators recently presented his findings for the *Carla Maersk* and *Conti Peridot* Houston ship channel collision at a Board meeting on June 7, 2016. Our other two hazardous materials investigators are working on a roundtable discussion on tank car safety scheduled for July 13, 2016.

- e. Any additional relevant information related to employee levels or NTSB resources**

Section 1131 of title 49, United States Code, requires NTSB to investigate railroad accidents involving one or more fatalities or substantial property damage, or that involve a passenger train. The NTSB is required to list all of the accidents that could not be investigated due to lack of staff resources in its Annual Report to Congress. This list averages several hundred accidents each year. A copy of the most recent annual report (2015) along with the list of accidents that could not be investigated is at <http://www.nts.gov/about/reports/Documents/2015AnnualReport.pdf>.

- 3. Please provide a list of all accidents in the United States since 2010 involving unit trains transporting crude oil, ethanol or other Class 3 flammable liquids. In addition to the location of the accident and the rail carrier involved, please list**
 - a. The volume of product that leaked;**
 - b. Whether there was an evacuation;**
 - c. The estimated property damage incurred;**
 - d. Whether NTSB conducted an investigation; and**
 - e. In cases in which NTSB conducted an investigation, please note which of the three types of investigatory teams that was sent:**
 - i. A full launch with a board member on scene;**
 - ii. A regional launches in which investigators are present at the accident scene; or**
 - iii. An accident in which FRA was the lead agency but NTSB took a consulting role.**

Please refer to Attachment 1 - List of accidents since 2010 involving unit trains transporting crude oil, ethanol or other Class 3 flammable liquids.

4. **We note that the NTSB investigated the crude-by-rail accident in Casselton, North Dakota, but the docket (DCA14MR004), shows that more than two-and-a-half years later, the NTSB has only released a preliminary report. The Board's online docket shows that the last public release of information was more than a year ago.**

- a. **When will the NTSB release a final report on the Casselton accident?**

As a result of the NTSB's investigation into the Casselton accident, we recommended that the Association of American Railroads (AAR) require that secondhand-use railroad axles undergo nondestructive testing specifically designed to locate internal material defects in axles (R-14-10). This recommendation letter provided extensive information related to the proximate cause of the accident. Please see Attachment 2 – Recommendations to AAR. The public docket for the Casselton accident was opened on April 27, 2015. The final report on the Casselton accident will be issued before the end of 2016.

The NTSB Office of Research and Engineering conducted a study on electronically controlled pneumatic (ECP) braking in conjunction with the Casselton investigation that has been included in the accident docket. This study has recently been expanded and any additional analysis will be added to the accident docket. In addition, the NTSB has had discussions with the Government Accountability Office (GAO) for its study on ECP braking which was requested in the Fixing America's Surface Transportation (FAST) Act (Public Law 114-94).

- b. **Please list any other open dockets related to railroad accidents involving trains transporting Class 3 flammable liquids.**

This information is also provided in Attachment 1 - List of accidents since 2010 involving unit trains transporting crude oil, ethanol or other Class 3 flammable liquids.

5. **The legislation we introduced in 2015, the Hazardous Materials Rail Transportation Safety Improvement Act, seeks to implement six NTSB recommendations, including two related to track conditions. Please provide the overall status of each recommendation:**

A summary of each recommendation and current status is below. Please refer to Attachment 3 – Status of Safety Recommendations, for additional details on status of each recommendation.

- a. **Recommendation R-7-2, dated April 25, 2007 (relating to real-time information regarding the identity and location of all hazardous materials on a train);**

Recommendation R-7-002; Issued 4/25/07

TO THE FEDERAL RAILROAD ADMINISTRATION: Assist the Pipeline and Hazardous Materials Safety Administration in developing regulations to require that railroads immediately

provide to emergency responders accurate, real-time information regarding the identity and location of all hazardous materials on a train.

Recommendation Status: OPEN-ACCEPTABLE RESPONSE

- b. Recommendation R-14-14, dated August 22, 2014 (relating to railroads providing communities and States with current commodity flow data and assisting with development of emergency operation and response plans);**

Recommendation R-14-014; Issued 8/22/14

TO THE UNITED STATES DEPARTMENT OF TRANSPORTATION: Require railroads transporting hazardous materials through communities to provide emergency responders and local and state emergency planning committees with current commodity flow data and assist with the development of emergency operations and response plans.

Recommendation Status: OPEN-UNACCEPTABLE RESPONSE

- c. Recommendation R-14-18, dated August 22, 2014 (relating to ensuring that emergency response information carried by train crews is consistent with the Emergency Response Guidebook);**

Recommendation R-14-018; Issued 8/22/14

TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Take action to ensure that emergency response information carried by train crews is consistent with and is at least as protective as existing emergency response guidance provided in the Emergency Response Guidebook.

Recommendation Status: OPEN-UNACCEPTABLE RESPONSE

- d. Recommendations R-14-75 and R-14-76, dated December 30, 2014 (relating to allowable limits for track conditions); and**

Recommendation R-14-075; Issued 12/30/14

TO THE FEDERAL RAILROAD ADMINISTRATION: Revise Title 49 *Code of Federal Regulations* Part 213 to define specific allowable limits for combinations of track conditions, none of which individually amounts to a deviation from Federal Railroad Administration regulations that requires remedial action, but, which when combined, require remedial action.

Recommendation Status: OPEN-ACCEPTABLE RESPONSE

Recommendation R-14-076; Issued 12/30/14

TO THE FEDERAL RAILROAD ADMINISTRATION: Once you have completed the actions specified in Safety Recommendation R-14-75, program your geometry inspection vehicles to detect combinations of conditions that require remedial action.

Recommendation Status: OPEN-ACCEPTABLE RESPONSE

- e. Recommendation R-14-19, dated August 22, 2014 (relating to developing, implementing and periodically evaluating requirements for railroads that**

transport hazardous materials to conduct public education programs for communities along railroad hazardous materials routes).

Recommendation R-14-019; Issued 8/22/14

TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION:
Require railroads transporting hazardous materials to develop, implement, and periodically evaluate a public education program similar to Title 49 *Code of Federal Regulations* Parts 192.616 and 195.440 for the communities along railroad hazardous materials routes.

Recommendation Status: OPEN-UNACCEPTABLE RESPONSE

6. **We are concerned not just with mitigating the damage of crude oil and ethanol derailments when they occur, but with preventing such derailments in the first place. Data contained in your 2014 letter to us underscored that the railroad industry has experienced a massive influx over the last decade of Class 3 flammable liquids cargo being shipped in the United States and Canada.**
 - a. **How has the changing energy landscape of the United States, e.g. growing railroad shipments of crude oil and ethanol, affected transportation safety, and, specifically, railroad safety?**

Ethanol production and the resulting transportation by rail ramped up between 2002 and 2010 and levelled off through 2015. Crude oil transportation by rail, specifically using unit trains, increased significantly in 2012-2013, partially due to the price differential between imported crude oil and domestic crude oil production, as well as the improvements in oil well production technology. The pipeline infrastructure was not sufficient to meet the demand, especially in the Bakken play. Rail transportation was able to step in and absorb the increased shipping demands. These commodity increases resulted in a significant ethanol and crude oil transportation using the existing fleet of DOT 111 tank cars.

At the same time, the industry was moving forward with building the CPC 1232 tank cars for hazardous liquids, which were designed with improved crashworthiness features. In 2014-2015, PHMSA and the FRA developed regulations to require improved tank car designs, both in retrofitting the existing fleet and requiring new tank cars to improve crashworthiness. The new regulations mandating replacing the fleet of less robust hazardous liquid tank cars were issued in 2015 (HM-251, May 2015). The FAST Act added additional requirements. However, crude oil prices collapsed to \$20/bbl in late 2015, resulting in a significant downturn in domestic production and transportation by rail. At the same time, pipeline capacity has been increasing.

Domestic crude oil production is expected to remain relatively flat over the next five or more years. Ethanol production and transportation by rail will also remain relatively flat. Based on 2015 data, rail transportation of crude oil is down, both due to reduced production and increased availability to transport by interstate pipelines. Fewer tank cars on the rail results in a lower probability of a derailment involving hazardous liquids. However, the reduced demand and uncertain future need have reduced the rail industry's incentives to expedite the tank car replacement effort.

b. How has the changing face of energy transportation and related safety issues affected railroad maintenance needs for track, rolling stock and other aspects of railroad networks?

The NTSB Office of Research and Engineering looked at existing FRA railroad accident data to determine if the increased use of unit trains with heavier loads has increased the failure rate of track and rolling stock. We determined that there was insufficient data available to conduct such an analysis. However, the NTSB has investigated many railroad accidents involving hazardous materials and has issued safety recommendations in all areas of railroad maintenance. Our accident investigation of the New Brighton, Pennsylvania derailment that occurred on October 20, 2006, resulted in five safety recommendations with three of those specifically addressing track maintenance and defect detection.

- Require railroads to develop rail inspection and maintenance programs based on damage-tolerance principles, and approve those programs. Include in the requirement that railroads demonstrate how their programs will identify and remove internal defects before they reach critical size and result in catastrophic rail failures. Each program should take into account, at a minimum, accumulated tonnage, track geometry, rail surface conditions, rail head wear, rail steel specifications, track support, residual stresses in the rail, rail defect growth rates, and temperature differentials. (R-08-009, Closed – Acceptable Action)
- Require railroads to develop rail inspection and maintenance programs based on damage-tolerance principles, and approve those programs. Include in the requirement that railroads demonstrate how their programs will identify and remove internal defects before they reach critical size and result in catastrophic rail failures. Each program should take into account, at a minimum, accumulated tonnage, track geometry, rail surface conditions, rail head wear, rail steel specifications, track support, residual stresses in the rail, rail defect growth rates, and temperature differentials. (R-08-010, Closed – Acceptable Action)
- Require that railroads use methods that accurately measure rail head wear to ensure that deformation of the head does not affect the accuracy of the measurements. (R-08-011, Closed – Acceptable Alternate Action)

We have seen the same rolling contact fatigue track issue identified in New Brighton, in subsequent investigations in Columbus, Ohio and Ellicott City, Maryland (coal train).

The FRA has created two specific working groups within its Rail Safety Action Committee (RSAC) to address track maintenance and defect detection issues. On April 16, 2014, the RSAC adopted the recommendations from the Rail Failure Working Group. The FRA stated that the FRA Administrator would formally issue the guidance document to railroads. (Documentation can be found in the final Accident Brief for the Norfolk Southern Railway Company Train Derailment and Hazardous Materials Release, NTSB/RAB-14/08).

The NTSB investigation of the December 30, 2013, Casselton, North Dakota accident found a defective axle on the grain train that caused it to derail in the path of the crude oil. The defective axle was traced to one specific batch of axles from one manufacturer. Safety Recommendation R-14-010 was issued to the Association of American Railroads. Including the defective axle in this accident, five additional defective axles from this batch have been identified and removed from service. This recommendation is classified as “Closed – Acceptable Action.”

The NTSB also recommended that AAR standards be revised to require reused axles to be nondestructively tested specifically for internal material defects prior to reuse.

The on-going investigation of the May 6, 2015, accident in Heimdal, North Dakota has identified a vertical split rim wheel defect. This same type of defect was identified in the Gogama, Ontario, accident and in the Galena, Illinois, accident (the NTSB did not launch to either). The ongoing investigation is evaluating possible recommendations to address this type of failure.

- c. Given that several crude-by-rail accidents have been related to track failures, what NTSB recommendations related to maintenance and track-related safety issues should Congress consider in light of the changing energy transportation systems? Please note the status of each recommendation.**

NTSB safety recommendations R-08-009, R-08-010, and R-08-11 (described above) and recommendations from the RSAC working groups.

- d. What NTSB recommendations related to routing of trains transporting hazardous materials should Congress consider? Please note the status of each recommendation.**

The Board issued its first recommendation addressing hazardous materials train routing in response to the July 2013 Lac-Megantic, Quebec, Canada crude oil train derailment. It recommended PHMSA and the FRA work together to “where technically feasible, require key train rerouting ... to avoid transportation through populated and other sensitive areas.” The recommendations were classified Closed-Acceptable Action on September 16, 2015, after PHMSA and the FRA worked together to issue the Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High Hazard Flammable Trains (HM-251). HM-251 requires that routes for high-hazard flammable trains be analyzed and selected using the minimum 27 safety and security risk factors specified in 49 CFR 172, Appendix D, including population density and the presence of sensitive areas.

The Board issued a second recommendation addressing hazardous materials train routing shortcomings identified in its July 2014 report on the Paulsboro, New Jersey derailment with vinyl chloride release. The recommendation to PHMSA and the FRA requested the two agencies “collaborate with the American Short Line and Regional Railroad

Association” to develop a risk assessment tool that addresses the known limitations and shortcomings of the Rail Corridor Risk Management System (RCRMS) software tool. (R-14-16, and -20).

Railroads use the RCRMS route analysis tool to comply with PHMSA regulation for route analysis. Although the PHMSA regulation requires the analysis to consider 27 risk factors to select a lower risk route, the regulation does not require the company to consider additional risk mitigation actions when a single route is the only choice. For example, a high-hazard flammable train could have a speed reduction applied that is below the normal timetable speed permitted on the route. In this example, slower speed would reduce the likelihood of a derailment as well as reduce the likelihood of a release of the hazardous material in the event of a derailment.

In the Paulsboro accident, the train was transporting chlorine, a poison-by-inhalation hazardous material, along the only available route that included moving the hazardous material across a semi-automatic movable bridge that continued to malfunction. An improved route analysis could have identified the need to augment the bridge inspection before a hazardous materials train crossed it. Had the railroad company required the bridge to be inspected by a qualified inspector immediately prior to allowing the accident train to cross it, the derailment would most likely not have occurred.

The recommendations to improve the route analysis methodology are currently classified Open-Acceptable Action. Congress could consider requesting that PHMSA and the FRA redouble their effort to complete the actions needed to close the recommendations.

Attachments:

Attachment 1 - List of accidents since 2010 involving unit trains transporting crude oil, ethanol or other Class 3 flammable liquids

Attachment 2 – Recommendations to AAR

Attachment 3 – Status of Safety Recommendations

ATTACHMENT 1 - List of accidents since 2010 involving unit trains transporting crude oil, ethanol or other Class 3 flammable liquids

Accidents occurring within the United States:

Date	Location	Carrier	Cars Derailed	Commodity	Volume Released (gal.)	Evacuations	Property Damage (\$million)	NTSB Invest.	Invest. Type
6/3/2016	Mosier, Oregon	Union Pacific	16	Petroleum crude oil	Under investigation	Under investigation	Under investigation	No	
3/1/2016	Ripley, New York	Norfolk Southern	16	Ethanol, propane	1,526	8	0.45	No	
11/8/2016	Watertown, Wisconsin	Canadian Pacific	15	Petroleum crude oil	1,000	102	0.5	No	
11/7/2015	Alma, Wisconsin	BNSF	25	Ethanol	20,413	75	1.3	No	
9/19/2015	Lesterville, South Dakota	BNSF	7	Ethanol	49,743	0	1.1	Yes Docket open	Regional launch
7/16/2015	Culbertson, Montana	BNSF	22	Petroleum crude oil	27,201	50	0.64	No	
5/6/2016	Heimdal, North Dakota	BNSF	6	Petroleum crude oil	96,486	30	5.0	Yes Docket open	Regional launch
2/16/2015	Mount Carbon, West Virginia	CSX	27	Petroleum crude oil	378,034	300	2.5	Yes Docket open	FRA lead; NTSB limited on-scene investigation
5/9/2014	LaSalle, Colorado	Union Pacific	5	Petroleum crude oil	7,932	0	0.3	No	
4/30/2014	Lynchburg, Virginia	CSX	17	Petroleum crude oil	29,868	350	1.2	Yes Docket open	Regional launch
2/13/2014	North Vandergrift, Pennsylvania	Norfolk Southern	21	Petroleum crude oil and propane	9,800	16	4.5	No	
1/31/2014	New Augusta, Mississippi	Illinois Central	11	Petroleum crude oil	25,450	16	2.1	No	
12/30/2013	Casselton, North Dakota	BNSF	20	Petroleum crude oil	476,437	1,400	6.1	Yes Docket open	Full launch
11/8/2013	Aliceville, Alabama	CN	26	Petroleum crude oil	455,520	0	5.0	No	
3/27/2013	Parkers Prairie, Minnesota	Soo Line Corp.	14	Petroleum crude oil	10,000	0	0.2	No	

Date	Location	Carrier	Cars Derailed	Commodity	Volume Released (gal.)	Evacuations	Property Damage (\$million)	NTSB Invest.	Invest. Type
8/5/2012	Plevna, Montana	BNSF	17	Ethanol	179,710	0	2.0	No	
7/11/2012	Columbus, Ohio	Norfolk Southern	17	Ethanol (3 cars)	54,748	100	1.2	Yes Docket open	Full launch
10/7/2011	Tiskilwa, Illinois	IAIS	26	Ethanol	162,014	800	1.6	Yes Docket open	Regional launch
2/6/2011	Arcadia, Ohio	Norfolk Southern	32	Ethanol	786,245	25	9.4	No	

Canadian accidents monitored by NTSB

Date	Location	Carrier	Cars Derailed	Commodity	Volume Released (gal.)	Evacuations	Property Damage (\$million CAD)	NTSB Invest.	Invest. Type
3/7/2015	Gogama, Ontario	CN	39	Petroleum crude oil	Not reported	0	Not reported	No	
2/14/2015	Gogama, Ontario	CN	29	Petroleum crude oil, petroleum distillates	>360,000	0	Not reported	No	
1/8/2014	Plaster Rock, New Brunswick	CN	17	Petroleum crude oil, LPG	60,000	150	Not reported	Yes Docket open	NTSB Observer
7/6/2013	Lac-Megantic, Quebec	Montreal Maine and Atlantic	63	Petroleum crude oil	1,600,000	2,000	460	Yes Docket open	NTSB Assisted TSB Canada



National Transportation Safety Board

Washington, DC 20594

Safety Recommendation

Date: April 7, 2014

In reply refer to: R-14-10

Mr. Edward R. Hamberger
President and Chief Executive Officer
Association of American Railroads
425 Third Street, SW
Washington, DC 20024

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation—railroad, highway, marine, and pipeline. The NTSB determines the probable cause of the accidents and issues safety recommendations aimed at preventing future accidents. In addition, the NTSB carries out special studies concerning transportation safety and coordinates the resources of the federal government and other organizations to provide assistance to victims and their family members affected by major transportation disasters. The NTSB urges the Association of American Railroads (AAR) to take action on the safety recommendation issued in this letter.

This recommendation addresses the need for more thorough nondestructive testing (NDT) of secondhand-use railroad axles.¹ The recommendation is derived from the NTSB's ongoing investigation of the BNSF Railway Company (BNSF) accident that occurred on December 30, 2013, near Casselton, North Dakota. As a result of the investigation to date, the NTSB is issuing one safety recommendation to the AAR. Information supporting this recommendation is discussed below.

On Monday, December 30, 2013, at 2:11 p.m. central standard time, westbound BNSF grain unit train G-RYLRGT9-26A derailed 13 cars at milepost 28.5 near Casselton, North Dakota. The grain train, operating on main track 1, consisted of 2 head-end locomotives, 1 rear distributive power unit (DPU) locomotive, and 112 cars. The 45th car from the head end of the grain train derailed onto main track 2, blocking the track.

¹ *Secondhand-use* refers to reusing an axle, which is a common industry practice used when installing new wheels or bearings on axles.

Eastbound BNSF petroleum crude oil unit train U-FYNHAY4-05T, operating on main track 2, collided with the derailed grain train car that was blocking the track. The crude oil train consisted of 2 head-end locomotives, 1 rear DPU locomotive, and 106 cars. The 2 head-end locomotives and the first 21 cars of the crude oil train derailed during the collision, releasing nearly one-half million gallons of crude oil and fueling a fire. An estimated 1,400 people were evacuated from the town of Casselton. No injuries to the public were reported. The accident occurred on the BNSF KO Subdivision, where train movements were governed by the signal indications of a traffic control system.

During the examination of the wreckage, NTSB investigators located a broken axle—an AAR Class K (6 1/2 X 9) axle manufactured for freight car service. Mounted to the axle were two 36-inch AAR 1-B wide-flange wheels with a 1:20 taper for freight car service. Each wheel was stamped with a manufacturing date of January 2010. The serial number stamped on the end of the broken axle was SSD 1102 7A1 E 0912 F, indicating Standard Steel, LLC manufactured it in November 2002.² As part of the ongoing investigation, NTSB investigators are examining the broken axle at the NTSB Materials Laboratory. Initial findings indicate the axle fractured because of a void defect along its longitudinal center axis.³

NTSB investigators researched BNSF maintenance records, which showed the wheel axle assembly had been replaced on two of the derailed cars from the grain train in the 4 years before the accident. Records also showed the bearings and wheels on the broken axle had been remounted in April 2010 at the BNSF Havelock Wheel Shop, in Havelock, Nebraska.

The mandatory interchange rules governing wheel shop practices are defined in the AAR *Manual of Standards and Recommended Practices* (MSRP), Section G—Part II, “Wheel and Axle Manual.”⁴ Specifically, Rule 1.1.8 of the MSRP states that wheel seats, journals, and journal fillet portions of unmounted secondhand axles in freight car service must be inspected by qualified persons holding NDT level I certifications using a magnetic particle inspection (MPI) method before being remounted.⁵

MPI is a commonly used, low-cost, rapid NDT method for ferromagnetic materials, such as steels and cast irons.⁶ Although MPI reveals cracks and flaws on or near the material surface, it cannot reveal defects that may be present below the surface of the material being examined outside the applied magnetic field.

According to MSRP Specification M-101, dated May 1, 1998, newly manufactured axles are ultrasonically inspected after the ends are machined and centered. Ultrasonic testing (UT) is a

² An AAR serial number designation contains a heat identification number (to identify a production run) stamped on the end of an axle. The heat number is assigned by the manufacturer and used for quality control. This axle had heat number E0912.

³ A *void* is a manufacturing defect in an otherwise solid material that can lead to premature failure of a component.

⁴ See Segment 1.0, S-659, “Mandatory Rules Governing Wheel Shop Practices as Required by Interchange Rules,” dated February 2008.

⁵ NDT level I certification is the first, or lowest, of three certification levels defined in the American Society for Nondestructive Testing Recommended Practices SNT-TC-1A, latest edition.

⁶ *Ferromagnetic material* is defined as material that can be magnetized or strongly attracted by a magnetic field, and its magnetic permeability is dependent on the magnetizing force.

commonly used, low-cost, and rapid NDT method that uses high-frequency acoustic energy to detect internal flaws. Specification M-101 was in effect when the axle that broke in the Casselton accident was manufactured in 2002, and it required manufacturers to conduct axial UT on the axle end faces (or free ends) to check for internal defects. A known issue with free-end UT is distinguishing between flaws in the axle material and changes in the axle profile.⁷ MSRP Specification M-101 was updated in July 2009 and now requires radial UT of the axle along the barrel length after the initial turning step during manufacture, which complements the axial free-end UT performed after axle end facing and center drilling. This testing is required only for new axles.

NTSB investigators have learned there were two recent failures of axles from the same manufacturing heat, or production run. The two other failures also were caused by void defects, which can occur in material during casting or forging⁸ Standard Steel stated that it manufactured 48 axles in 2002 with the heat number E0912.

On January 23, 2014, the AAR issued a maintenance advisory to all member railroads requesting the inspection and removal of suspect Class K (6 1/2 X 9) axles.⁹ The maintenance advisory instructs railroads to inspect wheel sets arriving in wheel and axle shops for axles in the serial number range SSD 1102 1A1 E0912 through SSD 1102 12B2 E0912. Identified axles must be immediately removed from the production line, isolated, tagged, and sent to Standard Steel for examination. Standard Steel will advise the AAR of the examination results.

Federal regulations at Title 49 *Code of Federal Regulations* Section 215.105 state the following:

- A railroad may not place or continue in service a car, if –
- (a) An axle on the car has a crack or is broken;
 - (b) An axle on the car has a gouge in the surface that is –
 - (1) Between the wheel seats; and
 - (2) More than one-eighth inch in depth;
 - (c) An axle on the car, used in conjunction with a plain bearing, has an end collar that is broken or cracked;
 - (d) A journal on the car shows evidence of overheating, as evidenced by a pronounced blue black discoloration; or
 - (e) The surface of the plain bearing journal on the axle, or the fillet on the axle, has –
 - (1) A ridge;
 - (2) A depression;
 - (3) A circumferential score;
 - (4) Corrugation;
 - (5) A scratch;
 - (6) A continuous streak;
 - (7) Pitting;

⁷ Gary L. Workman, Doron Kishoni, and Patrick Moore, eds., "Ultrasonic Testing of Axles," in *Ultrasonic Testing*, 3rd ed., (Columbus, OH: American Society of Nondestructive Testing, Inc., 2007), 538–540.

⁸ *Casting* is a manufacturing process of pouring molten metal into a mold to produce an object of desired shape. *Forging* is a manufacturing process of working metal to a desired shape using pressure or impact, typically performed at elevated temperatures.

⁹ Association of American Railroads, Maintenance Advisory C-12095, MA-144, "Inspection & Removal of Suspect Class K (6-1/2 X 9) Axles," January 23, 2014.

- (8) Rust;
- (9) Etching.

The axle that broke in the Casselton accident underwent all required NDT prescribed in MSRP S-659 in April 2010 at the BNSF Havelock Wheel Shop; however, the inherent limitations of MPI testing preclude detection of voids or other defects located deep within the material. A more thorough type of NDT, such as UT, is capable of locating internal material defects, including centerline voids. The NTSB concludes that had the broken axle from the Casselton, North Dakota, accident been subjected to more thorough NDT when its bearings and wheels were remounted in 2010, the internal material defect would likely have been found and the axle would not have been allowed to be returned to service.

Therefore, the National Transportation Safety Board makes the following recommendation to the Association of American Railroads:

Require secondhand-use railroad axles to undergo nondestructive testing specifically designed to locate internal material defects in axles. (R-14-10)

NTSB investigators are still examining issues related to the Casselton, North Dakota, accident. At this time, the NTSB has not yet determined the probable cause of this accident. Nonetheless, the NTSB has identified the safety issue described above, which needs to be addressed promptly.

Chairman HERSMAN, Vice Chairman HART, and MEMBERS SUMWALT, ROSEKIND, and WEENER concurred in these recommendations.

The NTSB is vitally interested in this recommendation because it is designed to prevent accidents and save lives. We would appreciate receiving a response from you within 90 days detailing the actions you have taken or intend to take to implement it. When replying, please refer to the safety recommendation by number. We encourage you to submit your response electronically to correspondence@ntsb.gov. If your response exceeds 10 megabytes, including attachments, please e-mail us at the same address for instructions. Please do not submit both an electronic copy and a hard copy of the same response.

[Original Signed]

By: Deborah A.P. Hersman
Chairman

Recommendation Report

NTSB Report #: Rec #: R-07-002

Notation Id: 7870A_1

Accident Date: 07/10/05

Issue Date: 04/25/07

City/State: Anding, MS

NTSB Report #: RAR-07-01

Most Wanted: No

On Sunday, July 10, 2005, about 4:15 a.m., central daylight time, two CN freight trains collided head on in Anding, Mississippi. The collision occurred on the CN Yazoo Subdivision, where the trains were being operated under a centralized traffic control signal system on single track. Signal data indicated that the northbound train, IC2 1013 North, continued past a stop (red) signal at North Anding and collided with the southbound train, IC 1023 South, about 1/4 mile beyond the signal. The collision resulted in the derailment of 6 locomotives and 17 cars. About 15,000 gallons of diesel fuel were released from the locomotives and resulted in a fire that burned for about 15 hours. Two crewmembers were on each train; all four were killed. As a precaution, about 100 Anding residents were evacuated; they did not report any injuries. Property damages exceeded \$9.5 million; clearing and environmental cleanup costs totaled about \$616,800.

Recommendation # : R-07-002 **Overall Status:** Open - Acceptable Response **Priority:** CLASS II

TO THE FEDERAL RAILROAD ADMINISTRATION: Assist the Pipeline and Hazardous Materials Safety Administration in developing regulations to require that railroads immediately provide to emergency responders accurate, real-time information regarding the identity and location of all hazardous materials on a train.

of Addressees: 1

Overall Date Closed: N/A

Addressee: FRA

Open - Acceptable Response

Addressee Date Closed: N/A

In Progress NTSB 201600437

10/25/07 Addressee 2070616 Letter Mail Controlled 10/30/2007 12:56:21 PM MC# 2070616: - From Joseph H. Boardman, Administrator: The importance of providing adequate hazardous materials documentation to emergency responders in a timely manner is nothing new to FRA. Early on, FRA's Office of Safety realized that proper hazardous materials documentation, including notice to train crews reflecting the current position in the train of all rail cars containing hazardous materials, was of utmost importance to the safety of responders, the general public, and the environment. Later on, FRA, in conjunction with the Research and Special Programs Administration (now PHMSA), added a requirement that a member of the train crew must update the document to show any changes in the position of a rail car within the train to ensure continued safety during transportation of hazardous materials by rail.

As a result of these emergency response delays in the midst of various railroad accidents, FRA approached the AAR and asked them to consider whether additional requirements to the regulations were necessary to ensure the availability of hazardous materials information in the event the train crew became incapacitated. Consequently, FRA conducted several meetings with the AAR, various railroads, and emergency response organizations to further discuss the necessity and type of enhancements that would provide access to hazardous materials information during an accident.

From these meetings, positive changes to the way emergency response information would be accessed and exchanged can be witnessed by the following milestones:

Beginning in March 2005, the AAR amended its Recommended Operating Practices Circular No. OT-55 G to afford local emergency responders with a ranked listing of the top 25 hazardous materials being transported by rail through their community. This important step allowed emergency responders to plan and train in

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advance of an actual chemical release. In July 2005, CSX Transportation, Inc. (CSXT) and CHEMTREC entered into an agreement to implement a pilot project so designed that CHEMTREC could immediately access specific train information, which included hazardous materials documentation from CSXT's computer system. The system, developed to provide real-time information, relies in part on train position information on those locomotives equipped with Global Positioning System (GPS) receivers. That pilot project remains in effect and appears to be providing good results.

During December 2006, the American Short Line and Regional Railroad Association, with FRA's encouragement, launched a second pilot project to evaluate the use of Railinc Corporation's FreightScope. This program was equipped with the capability to search for hazardous materials shipments. When installed at CHEMTREC, the system improved availability and rapid deployment of real-time hazardous materials information about shipments on shortline and regional railroads.

Lastly, FRA, in conjunction with PHMSA, will issue a Notice of Proposed Rulemaking (NPRM) addressing toxic inhalation hazard tank safety. In a public meeting notice supporting the rulemaking activity (see 71 Federal Register 67015, dated November 17, 2006), FRA asked interested persons to submit comments on nine issues it was considering. One of the questions concerned whether installation of bearing sensors or other onboard tracking/monitoring systems capable of monitoring, for example, tank car pressure, temperature, and safety conditions, would improve the safety and security of hazardous materials shipments by railroad tank car and, if so, whether implementing such a system is feasible.

In response to this question, commenters generally noted that many hazardous materials shippers have already implemented onboard tracking and monitoring systems for a variety of reasons. One commenter suggested that many detailed practicalities of such a system would need to be addressed (e.g., monitors attached to individual cars or through a system of wayside detectors, the utilization of data collected, and communication of that data to affected parties).

While the development of a national system that could electronically track tank car shipments of hazardous materials is being considered, the current practice of requiring the hand-off of train consists and other hazardous materials documentation to emergency responders remains the most accurate method of transferring this information when an event occurs. Train crews are required, by industry operating rules, to provide this information and to assist emergency responders in understanding the information. FRA currently has no reason to believe that regulatory revisions are necessary to federalize the current industry standard. However, if a systematic problem is identified, FRA would not hesitate to mandate the passing of information.

07/31/09	NTSB	2070616	<p>The NTSB notes the FRA's position that, although the development of a national system that could electronically track tank car shipments of hazardous materials is being considered, the current practice of requiring the hand-off of train consists and other hazardous materials documentation to emergency responders remains the most accurate method of transferring this information when an event occurs. We further note that the FRA does not believe that regulatory revisions are necessary to federalize this industry standard.</p> <p>As the NTSB stated in its accident investigation report:</p> <p>The accident at Anding demonstrates that accurate train consists may not be available if the on-board documents are destroyed in an accident. Also, the death or injury of crewmembers may prevent or hinder emergency response personnel from accessing accurate consist information in a timely manner. Given the critical importance of providing timely and accurate information to emergency responders about the hazardous materials on an accident train, the NTSB does not consider a</p>
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railroad's reliance upon the on-board consist as the only up-to-date listing to be prudent or responsive, especially when a railroad is transporting hazardous materials. The NTSB concludes that to ensure the safety of emergency responders and the public, railroads must have the ability to quickly provide emergency responders complete information about the specific hazardous materials being transported on a train and their location within it, regardless of the availability of the on-board consist.

The NTSB is aware of the actions that some AAR member railroads have taken regarding community awareness, emergency planning, and incident response for the transportation of hazardous materials. We are also aware of the technology in use by some railroads. However, although some railroads have experimented or are experimenting with various electronic technologies to maintain available and up-to-date consist information, other railroads have not. Electronic tracking systems and modern computer and communication systems can provide a railroad with flexibility and capability to generate, maintain, retrieve, and promptly deliver up-to-date consists for any of its operating trains to emergency responders. To bring about the implementation of such systems nationwide was the intention of the NTSB in issuing this recommendation.

The NTSB acknowledges the usefulness of CHEMTREC® the Network Operations Workstation, and the other programs discussed in the FRA's letter; however, most of these programs have been in place for several years and do not specifically address this recommendation. For example, railroads could provide emergency responders with a train consist via CHEMTREC®, but current regulations do not ensure that this would occur in all instances. Given the advanced technology available today, there is no sound reason for railroads not to have the capability to provide a real-time consist independent of the consist physically carried on the locomotive. We urge the FRA to reconsider its current position that federal regulations are not needed to adequately address this recommendation. Accordingly, pending the FRA's reconsidering its position and acting with PHMSA to pursue the development and requirement of a national system that can electronically track tank car shipments of hazardous materials, Safety Recommendation R-07-02 is classified OPEN -- UNACCEPTABLE RESPONSE. The NTSB would appreciate receiving progress reports on this endeavor.

11/17/09	Addressee 2090704	<p>MC# 2090704 - From Joseph C. Szabo, Administrator: AAR amended its recommended operating practices Circular Number OT-55G to afford local emergency responders with a ranked listing of the top 25 hazardous materials being transported by rail through their community. In July 2005, CSX Transportation (CSXT) and Chemtrec entered into an agreement to implement a pilot project designed so that Chemtrec could immediately access specific train information, which included hazardous materials documentation from CSXT's computer system. In December 2006, the American Short Line and Regional Railroad Association launched a second pilot project to evaluate the use of Railinc Corporation's FreightScope. The system is installed at Chemtrec and has improved availability and rapid deployment of real-time hazardous materials information about shipments on shortline and regional railroads. In October 2007, FRA sent an initial recommendation response letter to NTSB requesting this recommendation be reclassified as "Open-Acceptable Action." FRA is awaiting a formal response from NTSB. The FRA respectfully requests NTSB classify this Safety Recommendation as "Open-Response Received," until such time as NTSB staff and Board members have determined a classification based upon PRA's initial recommendation response letter.</p>
01/10/11	NTSB 2090704	<p>The NTSB classified Safety Recommendation R-07-2 "Open-Unacceptable Response" on July 31, 2009. Although the initiatives of CSX Transportation, Chemtrec, and the American Shortline and Regional Railroad Association to improve the availability and deployment of real-time hazardous materials information to emergency responders are positive, the intent of this recommendation is for the FRA to require railroads to provide to emergency responders information about the identity and location of hazardous materials on a train at the time of an accident. The NTSB is disappointed that the initiatives cited</p>

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			<p>in the FRA's letter are not those of the FRA, as recommended. To date, the FRA has not identified any initiatives it has taken to move this recommendation forward. The NTSB is interested in learning from the FRA what measures it has taken or is planning to initiate toward addressing this recommendation. In the meantime, Safety Recommendation R-07-2 remains classified OPEN – UNACCEPTABLE RESPONSE.</p>
04/12/11	Addressee	201100449	<p>-From Ray LaHood, Secretary of the United States Department of Transportation: NTSB Classification and Actions Taken by FRA: Open – Unacceptable Response. FRA regulations require that information on the identity and location of hazardous materials shipments on a train be maintained for the benefit of emergency responders. However, with FRA's encouragement, the AAR issued a circular offering to provide hazardous materials information on the top 25 commodities to local emergency response organizations to assist in training and preparing for emergencies. The most current version of the circular is available on the AAR/Bureau of Explosives Web site at http://boe.aar.com/boe/download/circular_ot-55-j.pdf. In addition, with FRA's encouragement, CSX Transportation, Inc., and Chemtrec established a real-time information process that provides car content and train consist information on a "one-call" basis. FRA continues to evaluate this process to determine if additional regulations are necessary. NTSB has requested that FRA work with PHMSA to pursue the development and requirement of a national system that can electronically track tank car shipments of hazardous materials, and has classified the recommendation as "Open – Unacceptable Response," pending initiation of rulemaking efforts to implement it.</p> <p>Actions Needed to Be Taken by FRA: Issue regulations, as necessary.</p>
12/01/11	NTSB	201100449	<p>CC# 201100449 was closed administratively; no response was written or mailed.</p>
03/02/12	NTSB	-1	<p>R-07-002 was reiterated in the greensheet issuing recommendations R-12-3 and R-12-4, issued on March 2, 2012. R-12-3 and R-12-4 resulted from the June 19, 2009 freight train derailment at a highway/ rail grade crossing in Cherry Valley, Illinois. All the derailed cars were carrying denatured fuel ethanol, a flammable liquid, which caught fire.</p> <p>From the greensheet: As a result of its investigation of the Anding, Mississippi, train collision, the NTSB recommended that the FRA (Safety Recommendation R-07-2) and PHMSA (Safety Recommendation R-07-4) work together to develop PHMSA regulations requiring that railroads immediately provide to emergency responders accurate, real-time information about the identity and location of all hazardous materials on a train.</p> <p>PHMSA, in a January 22, 2008, response to Safety Recommendation R-07-4, indicated to the NTSB that it was examining (1) ways to improve the availability of accurate and immediate information for emergency responders on the scene of an accident, and (2) strategies for enhancing emergency response planning and training efforts. Additionally, PHMSA indicated that it was evaluating the emergency response issues raised in the safety recommendation and the Federal, state, and local government, and industry programs intended to address those issues. Based on this response, the NTSB classified Safety Recommendation R-07-4 "Open Acceptable Response."</p> <p>In an October 10, 2007, response to Safety Recommendation R-07-2, the FRA noted the ongoing efforts of the AAR, CHEMTREC, and the American Short Line and Regional Railroad Association to enhance the availability of hazardous materials information during an accident. But the FRA maintained that the current practice of requiring the physical hand-off of train consists and other hazardous materials information "remains the most accurate method of transferring this information when an accident occurs." The FRA stated that it had no reason to believe that regulatory revisions are necessary to address this issue.</p> <p>In an April 12, 2011, follow-up response to the safety recommendation, the FRA noted that its regulations require that information on the identity and location of</p>

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hazardous materials shipments on a train be maintained by a member of the train crew for the benefit of emergency responders. Further, with the FRA's encouragement, the AAR issued a circular offering to provide hazardous materials information on the top 25 commodities to local emergency response organizations to assist in training and preparing for emergencies. Finally, with the FRA's encouragement, CSX Transportation, Inc., and CHEMTREC established a real-time information process that provides car content and train consist information on a "one-call" basis. The FRA indicated that it continues to evaluate this process to determine if additional regulations are necessary.

While acknowledging the activities and contributions of the AAR, CHEMTREC, and industry stakeholders to facilitate the rapid communication of hazardous materials information, in a January 10, 2011, letter, the NTSB reminded the FRA that the intent of Safety Recommendation R-07-2 was to require railroads to provide to emergency responders information about the identity and location of hazardous materials on a train at the time of an accident and that the FRA had not identified any initiatives it had taken to move this recommendation forward. Therefore, the NTSB continues to classify Safety Recommendation R-07-2 "Open—Unacceptable Response."

The NTSB also supports the HM-ACCESS initiative of PHMSA, which will allow the electronic communication of shipping paper information and improve the availability and accuracy of hazard communications to emergency responders. If implemented as envisioned, railroads will be able to quickly transmit electronically updated and accurate train consist data to emergency responders when accidents occur.

However, PHMSA began its HM-ACCESS initiative with public meetings on October 13–14, 2009, to discuss an upcoming proof-of-concept study on the use of electronic documents for hazardous materials shipments, no rulemaking has been initiated by PHMSA or the FRA to require railroads to immediately provide accurate consist information to emergency responders. Therefore, the NTSB reiterates Safety Recommendations R-07-2 and R-07-4 to the FRA and PHMSA, respectively.

05/15/12	Addressee 201200255	<p>-From Joseph C. Szabo, Administrator: As the NTSB investigation discovered, the carrier failed to comply with Title 49 Code of Federal Regulations Section 174.26, which requires a train crew to have a consist that accurately reflects the position of railcars containing hazardous materials. In general, lack of compliance with an existing regulation does not justify establishing new regulations. In this case, after reviewing the regulation, FRA is considering an amendment to the regulations that will clarify the requirement.</p> <p>FRA is also identifying and evaluating existing systems for obtaining information regarding the location of tank cars containing hazardous materials in a train. FRA has met with the AAR and ASLRRRA to provide an overview of the recommendation and our path forward. In addition, FRA and the Pipeline and Hazardous Materials Safety Administration (PHMSA) have discussed the application of HM-ACCESS in this regard. A meeting involving FRA, AAR, ASLRRRA, and PHMSA was held on May 2, 2012, to discuss the available systems and identify the systemic gaps and measures to close the gaps. FRA and PHMSA will provide NTSB with periodic updates on our progress. Until such time as FRA is able to fully address this safety recommendation, we respectfully request that NTSB classify Safety Recommendation R-07-02 "Open-Acceptable Response."</p> <p>I appreciate your interest in this important transportation matter. We look forward to working with you.</p>
07/18/12	NTSB 201200255	<p>In our January 10, 2011, letter (enclosure 2), the NTSB acknowledged the activities and contributions of the AAR, CHEMTREC, and industry stakeholders to facilitate the rapid communication of hazardous materials information. However, we also reminded the FRA that the intent of Safety Recommendation R-07-2 was to require railroads to provide to emergency responders information about the identity and location of hazardous materials on a train at the time of an accident. Further, we pointed out that, in its letter of November 17, 2009 (enclosure 1), the FRA had identified no initiatives it had taken to move this recommendation forward.</p>

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Accordingly, Safety Recommendation R-07-2 remained classified “Open—Unacceptable Response.”

The NTSB understands that, in response to the Cherry Valley accident, the FRA has met with the AAR and ASLRRRA to provide an overview of Safety Recommendation R-07-2 and its plans to address this recommendation, and that the FRA and PHMSA have discussed the application of HM-ACCESS (Hazardous Materials-ACCESS). Further, we note that, on May 2, 2012, the FRA met with the AAR, ASLRRRA, and PHMSA to discuss available systems and to identify systemic gaps and measures to close those gaps. We also note that the FRA and PHMSA will be providing periodic updates on their progress.

Although we are encouraged that the FRA appears to be taking some action, the agency has yet to clearly identify any specific initiatives underway to address Safety Recommendation R-07-2. Accordingly, pending receipt of detailed information on how and when the FRA will implement the recommendation, it remains classified OPEN—UNACCEPTABLE RESPONSE.

08/02/12	NTSB	201200291	<p>On May 15, 2012, the FRA informed the NTSB that it had met with the AAR and the American Short Line and Regional Railroad Association (ASLRRRA) to provide an overview of Safety Recommendation R-07-2 and its plans to address this recommendation. The FRA further informed us that it had discussed with PHMSA the application of HM-ACCESS (Hazardous Materials—Automated Cargo Communications for Efficient and Safe Shipments). We note that, on May 2, 2012, the FRA met with the AAR, the ASLRRRA, and PHMSA to discuss the available systems and to identify the systemic gaps and measures to close those gaps.</p> <p>Although PHMSA did not address Safety Recommendation R-07-4 in its May 30, 2012, letter, we are encouraged that FRA and PHMSA appear to be making some progress in addressing this issue. In our most recent exchanges of correspondence with PHMSA regarding this recommendation (enclosed), PHMSA indicated that it was “evaluating the emergency response issues raised in the recommendation and the Federal, State, and local government and industry programs intended to address those issues.” However, this information is several years old, and we are eager to learn of specific plans that PHMSA has made or actions it has taken since January 2008 to address Safety Recommendation R-07-4. In the meantime, pending our receipt of an update regarding action PHMSA has taken or intends to take to address this recommendation, it remains classified “Open—Acceptable Response.”</p>
08/26/14	NTSB	-1	<p>From the report "Conrail Freight Train Derailment with Vinyl Chloride Release" Paulsboro, New Jersey, November 30, 2012, Notation 8475A, RAR-14-01, adopted July 29, 2014, published August 26, 2014: In a May 15, 2012, response to Safety Recommendation R-07-02, the FRA informed the NTSB that it had met with the AAR, the American Short Line and Regional Railroad Association (ASLRRRA), and PHMSA to discuss the available systems and to identify systemic gaps and formulate measures to close those gaps. Although the FRA appears to be taking some action, the agency as of the issuance of this report had not clearly identified any specific initiatives to address Safety Recommendation R-07-02. Therefore, Safety Recommendation R-07-02 is classified “Open—Unacceptable Response.” On September 6, 2013, PHMSA published an advance notice of proposed rulemaking (Federal Register 2013, 66326), seeking comment on the implementation of a response to Safety Recommendation R-07-04. The NTSB commented that it continues to investigate accidents where emergency responders did not receive timely and accurate hazard information from railroad operators, including the November 30, 2012, Paulsboro, New Jersey, derailment. The NTSB believes that available technologies can and should be used to supplement the paper-based train consist for improving the dissemination of chemical hazard information to emergency responders. However, Safety Recommendation R-07-04 has remained open for more than 5 years. The NTSB is encouraged by the PHMSA Hazardous Materials Automated Cargo NTSB Railroad Accident Report 33 Communications for Efficient and Safe Shipments program and notes that PHMSA has instituted a paperless hazard communication pilot program</p>

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	<p>to evaluate the feasibility and effectiveness of paperless electronic communication systems. Therefore, Safety Recommendation R-07-04 is classified "Open—Acceptable Response."</p> <p>While Conrail did verbally relay information about the hazardous materials to emergency responders, the train consist and emergency response information were not provided to the incident command for more than 3 hours. The NTSB concludes that during the early hours following the accident, Conrail personnel did not immediately provide critical hazardous materials information to emergency responders that could have assisted in executing a safer response to this accident. Therefore, the NTSB reiterates Safety Recommendation R-07-02 to the FRA and Safety Recommendation R-07-04 to PHMSA.</p>
<p>11/24/14 Addressee 201401503</p>	<p>-From Joseph C. Szabo, Administrator: Thank you for your August 22, 2014, letter to the Federal Railroad Administration (FRA) regarding the National Transportation Safety Board's (NTSB) Safety Recommendations R-14-15 through R-14-17, R-12-03, and R-07-02. Safety Recommendation R-14-15 calls for FRA to promulgate a regulation for permitting a train to pass a red signal aspect protecting a movable bridge. Safety Recommendations R -14-16 and R -14-17 call for FRA to collaborate with the Pipeline and Hazardous Materials Safety Administration (PHMSA) and the American Short Line and Regional Railroad Association (ASLRRA) to develop a risk assessment tool and conduct audits of shortline and regional railroads to ensure that proper route risk assessments are being performed. These recommendations were issued as a result of the November 30, 2012, accident in which a Conrail train containing hazardous materials derailed while traveling over a movable bridge with an unsecured swing span, spilling vinyl chloride into Mantua Creek in Paulsboro, New Jersey.</p> <p>In the enclosure, FRA responds to Safety Recommendations R -14-15 through R -14-17 and explains the actions that FRA intends to take or has taken in response to the recommendations. Therefore, FRA respectfully requests that NTSB classify Safety Recommendation R-14-15 as "Closed-Acceptable Action." In addition, FRA requests that NTSB classify Safety Recommendations R-14-16 and R-14-17 as "Open-Acceptable Response." FRA will address Safety Recommendations R-12-03 and R-07-02 in a separate letter.</p> <p>We look forward to continuing to work with you on important safety issues.</p>
<p>12/10/14 Addressee 201401575</p>	<p>-From Joseph C. Szabo, Administrator: FRA is conducting a retrospective review of Part 174 of the HMR, which governs the acceptance and transportation of hazardous materials by rail. This review was conducted in accordance with Executive Order 13563, Improving Regulation and Regulatory Review, to identify regulations that may be outmoded, ineffective, insufficient, or excessively burdensome. FRA and PHMSA are working together to determine the best path forward to modify, streamline, expand, or repeal regulations in Part 174 that would, in part, address Safety Recommendation R-07-2 and the companion Safety Recommendation R-07-4 issued to PHMSA. On August 27-28, 2013, FRA and PHMSA held a public meeting with industry stakeholders to solicit input on a comprehensive review of safety regulations contained in part 174 applicable to the safe transportation of hazardous materials by rail. PHMSA and FRA have initiated a rulemaking (RIN 2137-AF07) to address comments received as a result of the public meeting.</p> <p>Among those regulations identified as potentially outmoded and insufficient is the requirement for notice to train crews of the current position of hazmat rail car(s) at existing § 174.26. FRA and PHMSA are considering the use of technology by railroads to update train consist information on a real-time basis, which would identify the current location of all rail cars, including the positions of rail car(s) containing hazardous materials. This may include regulations requiring real-time updates on the position of hazmat cars that would specifically address the current gaps in availability of the most current information. These gaps may occur due to train operations activity (car pickups and setouts) performed between automatic equipment identification (AEI) readers that are only able to update the train consist after a train passes an AEI reader. Additionally, FRA believes that better identification of rail cars moving under one-time movement approvals (OTMAs) listed on the train consist would provide further benefit to emergency responders,</p>

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as these cars generally have some manner of defect.

FRA is also cooperating with PHMSA on completion of the "Hazardous Materials Automated Cargo Communication for Efficient and Safe Shipping" (HM-ACCESS) project. PHMSA is considering two key initiatives under HM-ACCESS, both of which may lead to regulatory changes. First, PHMSA continues evaluating several special permit applications for the use of electronic shipping papers. Second, the Moving Ahead for Progress in the 21st Century Act (MAP-21) instructs PHMSA under § 33005 to conduct pilot tests to evaluate the feasibility and effectiveness of paperless hazard (e-HM) communication systems. PHMSA has completed a series of public meetings and has obtained stakeholder feedback regarding e-HM that will be helpful in the implementation of HM-ACCESS. FRA has agreed to actively participate in multimodal pilot tests of electronic communications that PHMSA will be initiating in the coming months.

Continued progress on these two projects will result in modernizing and improving the way hazardous materials information is immediately communicated to emergency responders and others by all modes of transportation, including the location of hazmat cars on a train. These efforts will enhance safety as well as address Safety Recommendation R-07-02.

01/23/15	NTSB	201401503	We note that you will provide an update regarding FRA actions to address Safety Recommendations R-07-2 and R 12 3 in a separate letter.
03/17/15	NTSB	201401575	<p>In a November 24, 2014, letter from PHMSA regarding companion recommendation R 07-4, we learned that PHMSA was working with the FRA to address this issue, and that PHMSA had almost finished research on a pilot program for paperless hazard communications, Hazardous Materials Automated Cargo Communications for Efficient and Safe Shipments (HM ACCESS). We understand that the Office of Management and Budget granted approval for information collection, authorizing PHMSA to begin pilot tests and inspections of emergency response simulations in three or four US regions, including one rural area. We learned that these pilot tests would start in early 2015, that they would collect data to analyze the impacts of using electronic systems to communicate information regarding the shipping of hazardous materials, and that the results of the program would be submitted to Congress later this year.</p> <p>Because you are collaborating with PHMSA on this issue, pending completion of the pilot testing and our review of the results, Safety Recommendation R-07-2 is classified OPEN—ACCEPTABLE RESPONSE.</p>
05/16/16	Addressee	201600437	<p>-From Sarah E. Feinberg, Administrator: This letter is to update you on the status of the Federal Railroad Administration's (FRA) responses to certain National Transportation Safety Board (NTSB) Safety Recommendations (R-01-02 R-04-07 R-05-17 R-07-02 R-08-12 R-14-02 R-14-16 and R-14-17) issued to the FRA. In the enclosure, FRA responds to these Safety Recommendations and explains the actions it has taken in response to them. FRA's actions, once implemented, will satisfy the intent of these open NTSB recommendations and FRA will keep the NTSB informed of their completion.</p> <p>FRA continues to work actively with PHMSA to complete and publish an NPRM to amend 49 CFR Part 174 (Part 174), which applies to persons who accept and transport hazardous material by rail. As FRA noted in previous correspondence to the NTSB, the proposed rule is based on FRA's retrospective review of Part 174 under Executive Order 13563, Improving Regulation and Regulatory Review, to identify regulations that may be outmoded, ineffective, insufficient, or excessively burdensome. As part of this rulemaking initiative, FRA and PHMSA are considering enhancements to the existing requirement to document the placement of railcars transporting hazardous material in a train by leveraging existing automatic equipment identification (AEI) reader technology and railroad communication protocols to ensure accurate real-time information is available to the train crew, dispatching office, and emergency response personnel. We anticipate that, once implemented, this rule will address not only Safety Recommendation R-07-2, issued to FRA and the companion Safety Recommendation R-07-3 issued to</p>

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PHMSA, but also the Congressional mandate of Section 7302 of the Fixing America's Surface Transportation Act.

Recommendation Report

Total Number of Recommendations for Recommendation Report: 1

Recommendation Report

NTSB Report #: Rec #: R-14-014

Notation Id: 8475A

Accident Date: 11/30/12

Issue Date: 08/22/14

City/State: Paulsboro, NJ

NTSB Report #: RAR-14-01

Most Wanted: No

This report discusses the 2012 accident in which a Consolidated Rail Corporation (Conrail) train derailed while traveling over a moveable bridge in Paulsboro, New Jersey. Three tank cars containing vinyl chloride came to rest in Mantua Creek, of which one was breached and released about 20,000 gallons of vinyl chloride. On that day, 28 residents sought medical attention for possible exposure, and the train crew and many emergency responders were also exposed. Damage estimates were \$451,000 for equipment and about \$30 million for emergency response and remediation.

This report addresses safety issues: training and qualification of train crews for moveable bridge inspection; Conrail safety management; timeliness of hazardous materials communications to first responders; failure of the incident commanders to follow established hazardous materials response protocols; firefighter training and qualifications; inadequacies of emergency planning, emergency preparedness, and public awareness for hazardous materials transported by train; and rail corridor risk management analysis. Safety recommendations to: Conrail, US Department of Transportation, Federal Railroad Administration, Pipeline and Hazardous Materials Safety Administration, Association of American Railroads, American Short Line and Regional Railroad Association, International Association of Fire Chiefs, National Volunteer Fire Council, four New Jersey state agencies, with three reiterated.

Recommendation # : R-14-014 **Overall Status:** Open - Unacceptable Response **Priority:** CLASS II

TO THE UNITED STATES DEPARTMENT OF TRANSPORTATION: Require railroads transporting hazardous materials through communities to provide emergency responders and local and state emergency planning committees with current commodity flow data and assist with the development of emergency operations and response plans.

of Addressees: 1

Overall Date Closed: N/A

Addressee: DOT

Open - Unacceptable Response

Addressee Date Closed: N/A

09/29/14	NTSB	201400924	<p>The National Transportation Safety Board (NTSB) has reviewed the Pipeline and Hazardous Materials Safety Administration's (PHMSA) August 1, 2014, notice of proposed rulemaking (NPRM), Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains. In this notice, PHMSA, in coordination with the Federal Railroad Administration (FRA), proposes new operational requirements and improved tank car standards for certain trains transporting large volumes of hazard class 3 flammable liquids. It also proposes revising the general requirements for offerors to ensure proper classification and characterization of mined gases and liquids. PHMSA notes that the proposed requirements are designed to reduce the frequency and consequences of accidents involving certain trains transporting large volumes of flammable liquids. The risks posed by such trains are illustrated in the catastrophic consequences of recent derailments at Casselton, North Dakota; Aliceville, Alabama; and Lac-Mégantic, Quebec, Canada.</p> <p>Proposed 49 CFR 174.310(a)(2) would apply to any railroad that transports in a single train 1 million gallons or more of petroleum crude oil, hazard class 3 (identification number UN 1267), sourced from the Bakken shale formation in the Williston Basin (centered in North Dakota but extending to South Dakota and Montana in the United States and to Saskatchewan and Manitoba in Canada). The proposed rule would require railroads to provide written notification to SERCs of the estimated number of such trains expected to travel per week through each county in each state and of the routes over which the crude oil is to be transported. The notification would also describe the crude oil, give applicable emergency response information, and list at least one railroad point of contact.</p> <p>We recently completed our investigation of a November 2012 Conrail freight train derailment in Paulsboro, New Jersey, in which vinyl chloride was released. We concluded that active participation by railroads in local emergency planning would</p>
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yield safer and more efficient responses to railroad accidents that result in the release of hazardous materials. In addition to notifying SERCs and local communities about the volume of hazardous materials traffic through their areas, we believe that carriers should provide communities with comprehensive emergency planning assistance. Accordingly, we issued the following safety recommendation to the DOT:

Require railroads transporting hazardous materials through communities to provide emergency responders and local and state emergency planning committees with current commodity flow data and assist with development of emergency operations and response plans. (R-14-14)

Although the NPRM does not specifically address Safety Recommendation R-14-14, it proposes that railroads notify emergency responders whenever a single hazardous commodity, Bakken crude oil, is transported in quantities of more than 1 million gallons through their area. The intent of Safety Recommendation R 14-14, however, is to urge you to require railroads to provide notification and emergency planning assistance for all classes of hazardous material transported through communities, at thresholds such as the those established in the Emergency Planning and Community Right-to-Know Act for fixed facilities. We urge you to fully and expeditiously address Safety Recommendation R-14-14 in this rulemaking. We disagree with restricting the proposed notification requirement to petroleum crude oil sourced exclusively from the Bakken shale formation. We believe that proposed 49 CFR 174.310(a)(2) should apply at a minimum to all class 3 flammable liquids transported in an HHFT. The properties that make crude oil flammable and hazardous are not limited to oil sourced from the Bakken formation. As one recent study concludes, “Bakken crude oil does not pose risks significantly different from other crude oils or other flammable liquids.” Bakken crude is also reported to be similar to crude oils from other geologic formations. For example, the light ends (ethane, propane, butane, pentane) of Bakken crude have been found to be comparable to those of oils produced elsewhere in North America, such as in the Eagle Ford formation in Texas.

We are particularly concerned that ethanol, the other hazard class 3 commodity commonly transported in unit trains, is not included in the proposed notification requirements. While comparative accident data are limited, we believe it likely that if ethanol rather than crude oil had been transported in the train that derailed in Lac-Mégantic, a similar massive pool fire would have resulted. Notification to emergency planners and responders of the presence of tank car shipments of ethanol in their jurisdictions is critical for the same reasons you propose notification requirements for shipments of crude oil. Communities must be prepared to respond to the firefighting challenges posed by ethanol accidents—by having alcohol-resistant firefighting foam readily available, for example—and to the difficulties associated with recovering ethanol released to the environment.

Question 1. Whether codifying the requirements of the Order in the HMR is the best approach for the notification requirements, and whether particular public safety improvements could be achieved by requiring the notifications be made by railroads directly to emergency responders, or to emergency responders as well as SERCs or other appropriate state delegated entities.

We note in our report on the Paulsboro, New Jersey, accident that unlike fixed facilities, railroads transporting hazardous materials are not required to work with communities to develop emergency plans. Emergency planning responsibilities should include providing (1) emergency planning notification to both local and state emergency planning committees, (2) an emergency coordinator who participates in the local emergency planning process, (3) notice of any operational changes that could affect emergency planning, and (4) any information necessary to develop and implement local emergency plans.

The absence of a regulatory requirement for railroads to notify and assist local emergency planning committees leaves communities unprepared to deal with releases of hazardous materials. We believe that the DOT emergency restriction/prohibition order targeting railroad transportation of crude oil from a single geographic region in the United States does not go far enough, and that community notification and planning should be required for all hazardous materials transported by rail. We have found that despite voluntary outreach and community awareness programs, such as the Transportation Community Awareness and

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Emergency Response program, many communities and emergency responders are unaware of and unprepared for the risks associated with hazardous materials traffic on railroads. For this reason, we issued the following safety recommendation to PHMSA:

Require railroads transporting hazardous materials to develop, implement, and periodically evaluate a public education program similar to 49 CFR Parts 192.616 and 195.440 for the communities along railroad hazardous materials routes. (R 14-19)

We believe that the best approach to regulating notification would be to codify the requirements detailed in Safety Recommendations R-14-14 and R-14-19.

Question 2. Whether the 1,000,000-gallon threshold is appropriate, or whether another threshold such as the 20-car HHFT threshold utilized in this NPRM's other proposals is more appropriate. If you believe that a threshold other than 1,000,000 gallons is appropriate, please provide any information on benefits or costs of the change, including for small railroads.

We are concerned that 1 million gallons is significantly above a reasonable risk threshold. At that value, notification would apply only to trains with more than about 35 tank car loads. Yet catastrophic derailment failure involving even a single tank car loaded with flammable liquid can cause extensive destruction and loss of life. Therefore, we believe that the notification threshold should be significantly lower. In addition, the threshold should be based on the worst-case consequences of a derailment resulting in fire. At a minimum, the threshold should be set no higher than the value in the proposed definition of an HHFT.

Question 6. Whether such information should be deemed SSI, and the reasons indicating why such a determination is appropriate, considering safety, security, and the public's interest in information.

We believe that notification information should raise the awareness of both the general public and stakeholders about hazardous materials routes running through their communities. Having an informed public along rail routes could supplement a carrier's safety measures and help reduce the consequences of emergencies involving hazardous materials. Classifying routing information about hazardous materials as "security sensitive" would unreasonably restrict the public's access to information that is important to its safety.

An informed public can be prepared to implement protective actions when accidents occur. While the general public may not require detailed information, such as the specific numbers, dates, and times of hazardous materials tank cars traveling on a route, people need to know whether they live or work near a hazardous materials route. They also need to be aware of the hazards associated with releases, what rail carriers do to prevent accidents and mitigate consequences, how to recognize and respond to an emergency, what protective action to take in the event of a hazardous materials release, and how to contact rail carriers regarding specific concerns.

12/15/14	Addressee 201401550	<p>-From Timothy P. Butters, Acting Administrator: PHMSA agrees with the NTSB's conclusion that exchange of accurate information regarding hazardous material (hazmat) traveling through a community, and active participation by railroads in local emergency planning and preparedness, would result in safer and more efficient emergency responses to railroad accidents involving hazmat releases. We are actively engaged in a rulemaking to address safety hazards from rail transport of flammable liquids such as crude oil and ethanol. As part of the August 1, 2014 Notice of Proposed Rulemaking, we proposed a requirement for notification of State Emergency Response Commissions of crude oil transportation (for specific crude oil shipments). Commenters both supported and opposed this measure. For those opposed, the consensus was that the applicability for notification would be too narrow. Specifically, commenters wanted the threshold quantity for applicability decreased; and the subject material to be expanded to include all Class 3 flammable liquid. This coincides with the NTSB's September 26, 2014 comment to the docket for this rulemaking urging PHMSA to fully address this recommendation (to apply to all classes of hazardous material) or, for purposes of the rulemaking, apply to all Class 3 materials at a minimum. Based on the comments to the rulemaking as well as this recommendation, we will take all options into</p>
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consideration as we proceed with our rulemaking effort.

Additionally, we will continue to pursue our non-regulatory outreach efforts to affect exchange of information and railroad participation through the Transportation Community Awareness and Emergency Response (TRANSCAER?) program, in which PHMSA and the Federal Railroad Administration are active participants. PHMSA will encourage and support ongoing industry efforts such as CIRCULAR NO. OT-55-N issued by the Association of American Railroads. Furthermore, PHMSA provides grants through its Hazardous Materials Emergency Preparedness (HMEP) Grant Program, and those grants can be used to conduct commodity flow studies, among other things. A recent case study from North Carolina illustrates successful use of this program to obtain commodity flow data. In 2009, PHMSA awarded a grant to the North Carolina Division of Emergency Management to conduct a statewide study to document hazmat facilities and shipments by motor carrier, rail, pipeline and barge. The study was completed in 2013. One particular positive outcome of the study was that it realigned planning requirements to enhance response plans and public protective actions. We encourage more states to follow suit and will continue to promote the availability of HMEP planning grants for this purpose.

02/26/15	NTSB	201401550	<p>We understand that you are currently considering our September 26, 2014, comments to the docket for PHMSA's August 1, 2014, notice of proposed rulemaking, Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains. We believe that your considering options as you proceed with rulemaking is a positive step, as are your continuing efforts to reach out through the Transportation Community Awareness and Emergency Response (TRANSCAER®) program. However, you have indicated that both these efforts address the problem of transporting flammable liquids only, and not all hazardous materials as recommended. We emphasize that, to satisfy Safety Recommendation R-14-14, the rulemaking must apply to all classes of hazardous material. Therefore, pending your confirmation that rulemaking will address all hazardous materials, Safety Recommendation R 14-14 is classified OPEN—UNACCEPTABLE RESPONSE.</p>
05/04/15	Addressee	201500448	<p>-From Timothy P. Butters, Deputy Administrator: This letter responds to the National Transportation Safety Board's (NTSB) April 3, 2015, letter urging the Pipeline and Hazardous Materials Safety Administration (PHMSA) to take action on new Safety Recommendations concerning rail transportation of Class 3 flammable liquids. These new Safety Recommendations, R-15-14 through R-15-17, resulted from the NTSB's examination of damaged tank cars following the February 16, 2015, derailment of a CSX Transportation crude oil unit train in Mount Carbon, West Virginia, as well as a review of data collected from several other crude oil unit train accidents occurring in the same timeframe. These Safety Recommendations address the retrofit of Specification DOT-111 tank cars with thermal protection systems that are used to transport Class 3 flammable liquids (hereafter referred to as "flammable liquid").</p> <p>We thank the NTSB for its vigilance on this transportation safety issue and its continued investigative efforts to improve rail transportation safety for crude oil, ethanol, and other flammable liquids. We share your commitment to enhancing the safety of rail transportation, and are pleased to inform you that Secretary Anthony R. Foxx has signed and announced a final rule entitled "Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains" (HM-251). Pending publication of the final rule in the Federal Register, we posted the signed version at our website homepage for public viewing. This rule focuses on prevention, mitigation, and response, to manage and reduce the risk posed by the transportation of flammable liquids by rail tank car. Through tremendous collaborative efforts with the Federal Railroad Administration (FRA), we established a comprehensive solution designed to reduce the probability and minimize the consequences of an accident. We have adopted risk mitigation requirements that address braking, classification, operating speeds, and routing to reduce the probability of accidents. Finally, we adopted enhanced design and performance standards for rail tank cars in flammable liquid service to minimize the consequence of an accident. The required safety measures and the timeline for</p>

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phase-out and retrofit of legacy tank cars used in high-hazard flammable train (HHFT) a service will strike a balance between the safety needs of rail transportation of flammable liquids and the economic viability of the rail industry. Upon consideration of shop capacity, the comments received on the Notice of Proposed Rulemaking (NPRM), and the potential impacts associated with the retrofit schedule, PHMSA recognizes the need to upgrade the rail car fleet, but finds that a targeted phase-out of the DOT-111 tank cars is the most prudent and protective approach.

We concur with this recommendation. This recommendation was issued to DOT as a result of a train derailment on November 30, 2012. While traveling over a moveable bridge in Paulsboro, New Jersey, three tank cars containing vinyl chloride came to rest in Mantua Creek, of which one was breached and released about 20,000 gallons of vinyl chloride (a division 2.1 flammable gas). Nearby residents sought medical attention for possible exposure, and the train crew and many emergency responders were also exposed. Damage estimates were \$451,000 for equipment and about \$30 million for emergency response and remediation.

As discussed above for Safety Recommendation R-14-4, this final rule will require additional (route) planning requirements for rail carriers. As part of the route planning requirement, a rail carrier transporting an HHFT will now have to annually compile HHFT commodity flow data for the previous calendar year based on route, line segment or series of line segments, and must use this data to analyze the safety and security risks of those and alternative routes. Additionally, the rail carrier must provide a point of contact to State and/or regional Fusion Centers that have been established to coordinate with state, local, and tribal officials on security issues and provide a point of contact to state, local and tribal officials in jurisdictions that may be affected by a rail carrier's routing decision.

We had proposed a requirement for notification of State Emergency Response Commissions of crude oil transportation (for specific crude oil shipments). Commenters both supported and opposed this measure. For those opposed, the consensus was that applicability for notification would be too narrow. This coincides with the NTSB's September 26, 2014 comment to the docket for this rulemaking, urging PHMSA to fully address this recommendation (to apply to all classes of hazardous material) or, for purposes of the rulemaking, apply to all Class 3 flammable materials at a minimum.

Not adopting the proposed separate notification requirements and instead relying on the expansion of the existing route analysis and consultation requirements of 49 CFR 172.820 to include HHFTs allows for consistency with the route planning regulatory scheme in the 49 CFR. Specifically, this provides for consistency of notification requirements for rail carriers transporting security sensitive hazardous materials subject to the routing requirements. Additionally, it allows for applicability to all flammable liquids transported as part of a HHFT. Furthermore, on January 27, 2015, AAR's Safety and Operations Management Committee made changes to OT-55 (AAR Circular No. OT-55-O), to revise the Transportation Community Awareness and Emergency Response Implementation (TRANSCAER®) program. The circular now states that "railroads will assist in implementing TRANSCAER, a system-wide community outreach program to improve community awareness, emergency planning, and incident response for the transportation of hazardous materials." Specifically, the key revised text of OT-55-O is "[u]pon written request, AAR members will provide bona fide emergency response agencies or planning groups with specific commodity flow information covering all hazardous commodities transported through the community for a 12-month period in rank order." (Emphasis added).

The request must be made using an authorized form by an official emergency response or planning group. The formality of this process reflects that the railroad industry considers this information to be restricted information of a security sensitive nature. The recipient of the information must agree to release the

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information only to bona fide emergency response planning and response organizations and not distribute the information publicly in whole or in part without the railroad's express written permission. It should be noted that commercial requirements change over time, and it is possible that a hazardous material transported tomorrow might not be included in the specific commodity flow information provided upon request, since that information may not have been available at the time the list was generated. We believe the combination of the new route planning requirements for HHFTs, the updated AAR OT-55 circular, and our efforts through our Hazardous Materials Emergency Preparedness (HMEP) Grant Program to provide grants to entities to conduct commodity flow studies, as related in our December 15, 2014 letter to the NTSB; speak to the intent of providing current commodity flow data and assistance with developing emergency response operations and plans.

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Total Number of Recommendations for Recommendation Report: 1

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NTSB Report #: Rec #: R-14-018

Notation Id: 8475A

Accident Date: 11/30/12

Issue Date: 08/22/14

City/State: Paulsboro, NJ

NTSB Report #: RAR-14-01

Most Wanted: No

This report discusses the 2012 accident in which a Consolidated Rail Corporation (Conrail) train derailed while traveling over a moveable bridge in Paulsboro, New Jersey. Three tank cars containing vinyl chloride came to rest in Mantua Creek, of which one was breached and released about 20,000 gallons of vinyl chloride. On that day, 28 residents sought medical attention for possible exposure, and the train crew and many emergency responders were also exposed. Damage estimates were \$451,000 for equipment and about \$30 million for emergency response and remediation.

This report addresses safety issues: training and qualification of train crews for moveable bridge inspection; Conrail safety management; timeliness of hazardous materials communications to first responders; failure of the incident commanders to follow established hazardous materials response protocols; firefighter training and qualifications; inadequacies of emergency planning, emergency preparedness, and public awareness for hazardous materials transported by train; and rail corridor risk management analysis. Safety recommendations to: Conrail, US Department of Transportation, Federal Railroad Administration, Pipeline and Hazardous Materials Safety Administration, Association of American Railroads, American Short Line and Regional Railroad Association, International Association of Fire Chiefs, National Volunteer Fire Council, four New Jersey state agencies, with three reiterated.

Recommendation # : R-14-018		Overall Status: Open - Unacceptable Response	Priority: CLASS II
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Take action to ensure that emergency response information carried by train crews is consistent with and is at least as protective as existing emergency response guidance provided in the Emergency Response Guidebook.			
# of Addressees: 1		Overall Date Closed: N/A	
Addressee: PHMSA		Open - Unacceptable Response	Addressee Date Closed: N/A
In Progress	NTSB	201600208	
11/24/14	Addressee	201401488	-From Timothy Butters, Acting Administrator: The NTSB concludes in its report ¹ on this accident that railroad-provided emergency response information that departs from nationally recognized ERG information has the potential to confuse emergency responders faced with making timely isolation and protective action distance decisions in response to hazardous material (hazmat) releases. The ERG contains an indexed list of hazmat and the associated identification number, the general hazards they pose and recommended safety precautions. Moreover, the ERG is a tool that provides emergency responders with critical information and guidance during the initial stages of a hazmat emergency. Taking the proper action during those critical first minutes does have a huge impact on the safety of both first responders and the people they serve. Thus, we acknowledge the NTSB's point and will take it into consideration as we contemplate possible alternatives, including regulatory action, to affect this recommendation.
02/24/15	NTSB	201401488	Although you recognize the importance of protecting emergency responders and state that you intend to consider this issue in formulating possible safety solutions, you have not committed to any specific action that you plan to take to address this recommendation. Pending our receipt of your detailed plans, Safety Recommendation R-14-18 is classified OPEN—UNACCEPTABLE RESPONSE.
03/16/16	Addressee	201600208	-From Marie Therese Dominguez, Administrator: The PHMSA does not concur in part based on our understanding of the construct of the safety recommendation that it would entail a regulatory action to satisfy the recommendation and that such an action would leave the ERG as a de facto regulation rather than as a guidebook. The PHMSA has reservations about taking such a course of action. The PHMSA reminds NTSB that 49 CFR Subpart G of Part 172 of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) specifies the requirements to provide

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and maintain emergency response information (ERI), which is defined as information that can be used in the mitigation of an incident involving hazardous materials. Specifically, section 172.602(a) states that it must include, at a minimum, the following information: 1) The basic description and technical name of the hazardous material; 2) Immediate hazards to health; 3) Risks of fire and explosion; 4) Immediate precautions to be taken in the event of an accident or incident; 5) Immediate methods for handling fires; 6) Initial methods for handling spills or leaks in the absence of fire; and 7) Preliminary first aid measures. The HMR require that this information be presented on a shipping paper or in a document other than a shipping paper that includes the information in section 172.602(a), such as, a material safety data sheet. The ERG is one form of guidance that can be used to satisfy this requirement. The PHMSA does agree with NTSB that providing emergency responders with accurate and accessible ERI is critical in transportation safety. However, we have concerns with taking regulatory action to ensure that emergency response information is as protective as the ERG.

First, it is important to note that the ERG is a tool to help emergency responders, not necessarily a national standard, even if viewed as such by NTSB or the public. The ERG is a guide to be relied upon in the absence of any other information. Although it may be a good starting point, the ERG cannot account for every variable that a carrier may encounter in transportation. The PHMSA relies on the shipper or carrier's ability to provide accurate emergency response information based on the specific material, the amount of material being transported, and other route-related variables. Ultimately we support giving flexibility to shippers and carriers to prepare emergency response information based on their own unique scenario.

Furthermore, while part of the ERG is based on scientific data, it may not always be the only correct way to respond to an incident. For instance, a shipper or carrier may use a different evacuation distance based on his or her own analysis using a source other than the ERG. The result may be equally or more effective for initial emergency response. This allowance explains why differences can exist between the ERG and sources like the Association of American Railroads (AAR) Bureau of Explosives Hazardous Materials Shipping Descriptions and Emergency Response database (HAZMAT database). For example, prior to the 2012 ERG publication, AAR contacted PHMSA to address the differences in the guidance for chlorine spillage in Tables 1 and 3; questioning the estimates and usability. The PHMSA recognized that there may be differences, but nonetheless, chose to publish the isolation and protective action distances based on research to support the ERG. However, to date, there is no published evidence, in the NTSB report or otherwise to indicate AAR's guidance on chlorine emergency response as unsafe. The PHMSA does, however, acknowledge NTSB's concerns as expressed via conference calls to discuss this recommendation that the information provided by shippers in accordance with section 172.602(a) is often not verified or validated.

That is, there is no supporting data or analysis for the ERI provided by the shipper. For vinyl chloride, the AAR HAZMAT database recommended, "[i]f material leaking (not on fire) consider evacuation from downwind area based on the amount of material spilled, location, and weather conditions." This type of guidance allows for a more specific response without causing unnecessary evacuation for the surrounding community. A properly trained emergency responder should be able to respond appropriately, based on the size of the spill, location, and weather conditions. In some cases, the emergency responder may conclude that the isolation and protective action distances prescribed by the ERG are not necessary.

Moreover, making the ERG a minimum requirement could have unintended consequences for the emergency response community. We are concerned that this could eventually lead to enforcement actions taken against emergency responders who choose not to follow what is prescribed in the ERG. We support allowing emergency responders to properly assess the situation and respond using their discretion, without fear that their actions will result in a penalty for not following what was provided to them.

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Additionally, there is insufficient evidence to suggest that emergency responder actions would have been different had the train consist had ERI that was consistent with the ERG. In the NTSB accident report, it states, "[i]t is uncertain whether this inconsistent information influenced the emergency responder actions on the day of the accident"¹ and further states that, "the train consist and emergency response information were not provided to the incident command for more than three hours. However, during the first hour of the emergency response, the Conrail director of risk management recommended a 0.5-mile evacuation, similar to what is suggested in the ERG." To conclude, at this time we plan no regulatory action regarding this safety recommendation with respect to the ERG, however, we will initiate action (e.g., an internal working group) to consider an alternative means to provide assurances to the public that ERI provided by train crews is valid. The PHMSA will also take into consideration the results of the Government Accountability Office (GAO) study regarding ERI carried by train crews, in accordance with section 7303 of the Fixing America's Surface Transportation Act (FAST Act).

Recommendation Report

Total Number of Recommendations for Recommendation Report: 1

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NTSB Report #: Rec #: R-14-075

Notation Id: 8613

Accident Date: 07/18/13

Issue Date: 12/30/14

City/State: New York City (Bronx), NY **NTSB Report #:** None

Most Wanted: No

On July 18, 2013, at 8:29 p.m. eastern daylight time, northbound CSX Transportation (CSX) train Q70419, derailed on the Metro-North Hudson Line at milepost (MP) 9.99 on main track 2. The train consisted of 2 locomotives and 24 modified flat cars. Each flat car was loaded with 4 containers of municipal refuse. The 11th through 20th cars derailed. At the point of derailment (POD), NTSB investigators identified a number of track conditions that could contribute to a wide gage including center-bound concrete ties, fouled ballast, profile deviations, and displaced insulators.

The NTSB determined that the probable cause of the accident was excessive track gage due to a combination of fouled ballast, deteriorated concrete ties, and profile deviations resulting from Metro-North's decision to defer scheduled track maintenance.

Recommendation # : R-14-075 **Overall Status:** Open - Acceptable Response **Priority:** CLASS II

TO THE FEDERAL RAILROAD ADMINISTRATION: Revise Title 49 Code of Federal Regulations Part 213 to define specific allowable limits for combinations of track conditions, none of which individually amounts to a deviation from Federal Railroad Administration regulations that requires remedial action, but, which when combined, require remedial action.

of Addressees: 1

Overall Date Closed: N/A

Addressee: FRA

Open - Acceptable Response

Addressee Date Closed: N/A

04/13/15 Addressee 201500450 From Sarah Feinberg, Acting Administrator: Thank you for your December 30, 2014, letter to the Federal Railroad Administration (FRA) regarding the National Transportation Safety Board's (NTSB) Safety Recommendations R-14-75 and R-14-76. These recommendations were a result of the NTSB's investigation of the derailment of a CSX Transportation (CSX) train on Metro-North Railroad's track in Bronx, NY, on July 18, 2013. Safety Recommendation R-14-75 asks FRA to "revise its Track Safety Standards to define specific allowable limits for combinations of track conditions, none of which individually amounts to a deviation from FRA regulations, but when combined, require remedial action." Safety Recommendation R-14-76 asks FRA to "program the FRA track geometry inspection vehicles to detect these combinations of conditions that require remedial action."

The enclosure to this letter contains FRA's response to Safety Recommendations R-14-75 and R-14-76 and explains the actions that FRA has taken to address the recommendations or the underlying safety concerns expressed in the recommendations. FRA respectfully requests that the NTSB classify Safety Recommendations R-14-75 and R-14-76 as "Closed Acceptable Alternative Action."

We look forward to continuing to work with you on important safety issues.

The Federal Railroad Administration (FRA) agrees with this recommendation; however, as part of a rulemaking to revise its Track Safety Standards, FRA had already reviewed various track conditions to determine which combinations of track conditions are unsafe and require remedial action to ensure safe operations. Following this review, FRA published a final rule on Vehicle/Track Interaction (VTI) Safety Standards that established new requirements to address unsafe combinations of track alignment and surface conditions. See Title 49 Code of Federal Regulations (CFR) Sections 213.65 and 213.332; 78 Fed. Reg. 16052 (March 13, 2013). The rule, which was developed with the assistance of FRA's Railroad Safety Advisory Committee (RSAC), also modified the scope section in Part 213 to reflect the adoption of the VTI final rule's combination defects by

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stating, in part, that this section, "in general," prescribes requirements that apply to specific track conditions existing in isolation. See 49 CFR § 213.1(a).

In developing its VTI rule, FRA sought to include revisions that would "serve as practical standards with sound physical and mathematical bases," and arrived at its proposals "through the results of computer simulations of vehicle/track dynamics, consideration of international practices, and thorough reviews of qualification and revenue service test data." See 78 Fed. Reg. 16056-57. In addition to the RSAC consultation process, the proposals were subject to public comment and modified, as appropriate, in the final rule.

01/08/16	NTSB	201500450	<p>We are pleased that you revised your Vehicle/Track Interaction (VTI) Safety Standards contained in Title 49 Code of Federal Regulations Part 213 to address unsafe combinations of track alignment and surface conditions, effective July 11, 2013, and that the requirements of the revised rule apply to specific track conditions existing in isolation. Upon review of this document, we were disappointed to find that the same changes had not also been incorporated into Subparts A through F. Pending your incorporating these revisions into Subparts A through F, Safety Recommendation R 14-75 is classified OPEN—ACCEPTABLE RESPONSE.</p>
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Total Number of Recommendations for Recommendation Report: 1

Recommendation Report

NTSB Report #: Rec #: R-14-076

Notation Id: 8613

Accident Date: 07/18/13

Issue Date: 12/30/14

City/State: New York City (Bronx), NY **NTSB Report #:** None

Most Wanted: No

On July 18, 2013, at 8:29 p.m. eastern daylight time, northbound CSX Transportation (CSX) train Q70419, derailed on the Metro-North Hudson Line at milepost (MP) 9.99 on main track 2. The train consisted of 2 locomotives and 24 modified flat cars. Each flat car was loaded with 4 containers of municipal refuse. The 11th through 20th cars derailed. At the point of derailment (POD), NTSB investigators identified a number of track conditions that could contribute to a wide gage including center-bound concrete ties, fouled ballast, profile deviations, and displaced insulators.

The NTSB determined that the probable cause of the accident was excessive track gage due to a combination of fouled ballast, deteriorated concrete ties, and profile deviations resulting from Metro-North's decision to defer scheduled track maintenance.

Recommendation # : R-14-076 **Overall Status:** Open - Acceptable Response **Priority:** CLASS II

TO THE FEDERAL RAILROAD ADMINISTRATION: Once you have completed the actions specified in Safety Recommendation R-14-75, program your geometry inspection vehicles to detect combinations of conditions that require remedial action.

of Addressees: 1

Overall Date Closed: N/A

Addressee: FRA Open - Acceptable Response **Addressee Date Closed:** N/A

04/13/15 Addressee 201500450 From Sarah Feinberg, Acting Administrator: Thank you for your December 30, 2014, letter to the Federal Railroad Administration (FRA) regarding the National Transportation Safety Board's (NTSB) Safety Recommendations R-14-75 and R-14-76. These recommendations were a result of the NTSB's investigation of the derailment of a CSX Transportation (CSX) train on Metro-North Railroad's track in Bronx, NY, on July 18, 2013. Safety Recommendation R-14-75 asks FRA to "revise its Track Safety Standards to define specific allowable limits for combinations of track conditions, none of which individually amounts to a deviation from FRA regulations, but when combined, require remedial action." Safety Recommendation R -14-7 6 asks FRA to "program the FRA track geometry inspection vehicles to detect these combinations of conditions that require remedial action."

The enclosure to this letter contains FRA's response to Safety Recommendations R-14-75 and R-14-76 and explains the actions that FRA has taken to address the recommendations or the underlying safety concerns expressed in the recommendations. FRA respectfully requests that the NTSB classify Safety Recommendations R-14-7 5 and R -14-7 6 as "Closed Acceptable Alternative Action."

We look forward to continuing to work with you on important safety issues.

The Federal Railroad Administration (FRA) agrees with this recommendation; however, as part of a rulemaking to revise its Track Safety Standards, FRA had already reviewed various track conditions to determine which combinations of track conditions are unsafe and require remedial action to ensure safe operations. Following this review, FRA published a final rule on Vehicle/Track Interaction (VTI) Safety Standards that established new requirements to address unsafe combinations of track alignment and surface conditions. See Title 49 Code of Federal Regulations (CFR) Sections 213.65 and 213.332; 78 Fed. Reg. 16052 (March 13, 2013). The rule, which was developed with the assistance of FRA's Railroad Safety Advisory Committee (RSAC), also modified the scope section in Part 213 to reflect the adoption of the VTI final rule's combination defects by

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stating, in part, that this section, "in general," prescribes requirements that apply to specific track conditions existing in isolation. See 49 CFR § 213.1(a).

In developing its VTI rule, FRA sought to include revisions that would "serve as practical standards with sound physical and mathematical bases," and arrived at its proposals "through the results of computer simulations of vehicle/track dynamics, consideration of international practices, and thorough reviews of qualification and revenue service test data." See 78 Fed. Reg. 16056-57. In addition to the RSAC consultation process, the proposals were subject to public comment and modified, as appropriate, in the final rule.

FRA's track geometry inspection vehicles have all been programmed to detect combinations of the track geometry conditions contained in the March 13, 2013, VTI final rule mentioned above.

01/08/16	NTSB	201500450	We note that all your track geometry inspection vehicles have been programmed to detect combinations of the track geometry conditions contained in the VTI Safety Standards, in Subpart G, but not in Subparts A through F. Please add the conditions specified into Subparts A through F to fully satisfy the intent of Safety Recommendation R-14-76. Pending your taking such action, the recommendation is classified OPEN—ACCEPTABLE RESPONSE.
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Total Number of Recommendations for Recommendation Report: 1

Recommendation Report

NTSB Report #: Rec #: R-14-019

Notation Id: 8475A

Accident Date: 11/30/12

Issue Date: 08/22/14

City/State: Paulsboro, NJ

NTSB Report #: RAR-14-01

Most Wanted: No

This report discusses the 2012 accident in which a Consolidated Rail Corporation (Conrail) train derailed while traveling over a moveable bridge in Paulsboro, New Jersey. Three tank cars containing vinyl chloride came to rest in Mantua Creek, of which one was breached and released about 20,000 gallons of vinyl chloride. On that day, 28 residents sought medical attention for possible exposure, and the train crew and many emergency responders were also exposed. Damage estimates were \$451,000 for equipment and about \$30 million for emergency response and remediation.

This report addresses safety issues: training and qualification of train crews for moveable bridge inspection; Conrail safety management; timeliness of hazardous materials communications to first responders; failure of the incident commanders to follow established hazardous materials response protocols; firefighter training and qualifications; inadequacies of emergency planning, emergency preparedness, and public awareness for hazardous materials transported by train; and rail corridor risk management analysis. Safety recommendations to: Conrail, US Department of Transportation, Federal Railroad Administration, Pipeline and Hazardous Materials Safety Administration, Association of American Railroads, American Short Line and Regional Railroad Association, International Association of Fire Chiefs, National Volunteer Fire Council, four New Jersey state agencies, with three reiterated.

Recommendation # : R-14-019 **Overall Status:** Open - Unacceptable Response **Priority:** CLASS II

TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Require railroads transporting hazardous materials to develop, implement, and periodically evaluate a public education program similar to Title 49 Code of Federal Regulations Parts 192.616 and 195.440 for the communities along railroad hazardous materials routes.

of Addressees: 1

Overall Date Closed: N/A

Addressee: PHMSA

Open - Unacceptable Response

Addressee Date Closed: N/A

In Progress NTSB 201600208

09/29/14 NTSB 201400924

The National Transportation Safety Board (NTSB) has reviewed the Pipeline and Hazardous Materials Safety Administration's (PHMSA) August 1, 2014, notice of proposed rulemaking (NPRM), Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains. In this notice, PHMSA, in coordination with the Federal Railroad Administration (FRA), proposes new operational requirements and improved tank car standards for certain trains transporting large volumes of hazard class 3 flammable liquids. It also proposes revising the general requirements for offerors to ensure proper classification and characterization of mined gases and liquids. PHMSA notes that the proposed requirements are designed to reduce the frequency and consequences of accidents involving certain trains transporting large volumes of flammable liquids. The risks posed by such trains are illustrated in the catastrophic consequences of recent derailments at Casselton, North Dakota; Aliceville, Alabama; and Lac-Mégantic, Quebec, Canada. Proposed 49 CFR 174.310(a)(2) would apply to any railroad that transports in a single train 1 million gallons or more of petroleum crude oil, hazard class 3 (identification number UN 1267), sourced from the Bakken shale formation in the Williston Basin (centered in North Dakota but extending to South Dakota and Montana in the United States and to Saskatchewan and Manitoba in Canada). The proposed rule would require railroads to provide written notification to SERCs of the estimated number of such trains expected to travel per week through each county in each state and of the routes over which the crude oil is to be transported. The notification would also describe the crude oil, give applicable emergency response information, and list at least one railroad point of contact. We recently completed our investigation of a November 2012 Conrail freight train

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derailment in Paulsboro, New Jersey, in which vinyl chloride was released. We concluded that active participation by railroads in local emergency planning would yield safer and more efficient responses to railroad accidents that result in the release of hazardous materials. In addition to notifying SERCs and local communities about the volume of hazardous materials traffic through their areas, we believe that carriers should provide communities with comprehensive emergency planning assistance. Accordingly, we issued the following safety recommendation to the DOT:

Require railroads transporting hazardous materials through communities to provide emergency responders and local and state emergency planning committees with current commodity flow data and assist with development of emergency operations and response plans. (R-14-14)

Although the NPRM does not specifically address Safety Recommendation R-14-14, it proposes that railroads notify emergency responders whenever a single hazardous commodity, Bakken crude oil, is transported in quantities of more than 1 million gallons through their area. The intent of Safety Recommendation R 14-14, however, is to urge you to require railroads to provide notification and emergency planning assistance for all classes of hazardous material transported through communities, at thresholds such as the those established in the Emergency Planning and Community Right-to-Know Act for fixed facilities. We urge you to fully and expeditiously address Safety Recommendation R-14-14 in this rulemaking. We disagree with restricting the proposed notification requirement to petroleum crude oil sourced exclusively from the Bakken shale formation. We believe that proposed 49 CFR 174.310(a)(2) should apply at a minimum to all class 3 flammable liquids transported in an HHFT. The properties that make crude oil flammable and hazardous are not limited to oil sourced from the Bakken formation. As one recent study concludes, “Bakken crude oil does not pose risks significantly different from other crude oils or other flammable liquids.” Bakken crude is also reported to be similar to crude oils from other geologic formations. For example, the light ends (ethane, propane, butane, pentane) of Bakken crude have been found to be comparable to those of oils produced elsewhere in North America, such as in the Eagle Ford formation in Texas.

We are particularly concerned that ethanol, the other hazard class 3 commodity commonly transported in unit trains, is not included in the proposed notification requirements. While comparative accident data are limited, we believe it likely that if ethanol rather than crude oil had been transported in the train that derailed in Lac-Mégantic, a similar massive pool fire would have resulted. Notification to emergency planners and responders of the presence of tank car shipments of ethanol in their jurisdictions is critical for the same reasons you propose notification requirements for shipments of crude oil. Communities must be prepared to respond to the firefighting challenges posed by ethanol accidents—by having alcohol-resistant firefighting foam readily available, for example—and to the difficulties associated with recovering ethanol released to the environment.

Question 1. Whether codifying the requirements of the Order in the HMR is the best approach for the notification requirements, and whether particular public safety improvements could be achieved by requiring the notifications be made by railroads directly to emergency responders, or to emergency responders as well as SERCs or other appropriate state delegated entities.

We note in our report on the Paulsboro, New Jersey, accident that unlike fixed facilities, railroads transporting hazardous materials are not required to work with communities to develop emergency plans. Emergency planning responsibilities should include providing (1) emergency planning notification to both local and state emergency planning committees, (2) an emergency coordinator who participates in the local emergency planning process, (3) notice of any operational changes that could affect emergency planning, and (4) any information necessary to develop and implement local emergency plans.

The absence of a regulatory requirement for railroads to notify and assist local emergency planning committees leaves communities unprepared to deal with releases of hazardous materials. We believe that the DOT emergency restriction/prohibition order targeting railroad transportation of crude oil from a single geographic region in the United States does not go far enough, and that community notification and planning should be required for all hazardous materials

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transported by rail. We have found that despite voluntary outreach and community awareness programs, such as the Transportation Community Awareness and Emergency Response program, many communities and emergency responders are unaware of and unprepared for the risks associated with hazardous materials traffic on railroads. For this reason, we issued the following safety recommendation to PHMSA:

Require railroads transporting hazardous materials to develop, implement, and periodically evaluate a public education program similar to 49 CFR Parts 192.616 and 195.440 for the communities along railroad hazardous materials routes. (R 14-19)

We believe that the best approach to regulating notification would be to codify the requirements detailed in Safety Recommendations R-14-14 and R-14-19.

Question 2. Whether the 1,000,000-gallon threshold is appropriate, or whether another threshold such as the 20-car HHFT threshold utilized in this NPRM's other proposals is more appropriate. If you believe that a threshold other than 1,000,000 gallons is appropriate, please provide any information on benefits or costs of the change, including for small railroads.

We are concerned that 1 million gallons is significantly above a reasonable risk threshold. At that value, notification would apply only to trains with more than about 35 tank car loads. Yet catastrophic derailment failure involving even a single tank car loaded with flammable liquid can cause extensive destruction and loss of life. Therefore, we believe that the notification threshold should be significantly lower. In addition, the threshold should be based on the worst-case consequences of a derailment resulting in fire. At a minimum, the threshold should be set no higher than the value in the proposed definition of an HHFT.

Question 6. Whether such information should be deemed SSI, and the reasons indicating why such a determination is appropriate, considering safety, security, and the public's interest in information.

We believe that notification information should raise the awareness of both the general public and stakeholders about hazardous materials routes running through their communities. Having an informed public along rail routes could supplement a carrier's safety measures and help reduce the consequences of emergencies involving hazardous materials. Classifying routing information about hazardous materials as "security sensitive" would unreasonably restrict the public's access to information that is important to its safety.

An informed public can be prepared to implement protective actions when accidents occur. While the general public may not require detailed information, such as the specific numbers, dates, and times of hazardous materials tank cars traveling on a route, people need to know whether they live or work near a hazardous materials route. They also need to be aware of the hazards associated with releases, what rail carriers do to prevent accidents and mitigate consequences, how to recognize and respond to an emergency, what protective action to take in the event of a hazardous materials release, and how to contact rail carriers regarding specific concerns.

11/24/14	Addressee 201401488	-From Timothy Butters, Acting Administrator: PHMSA's Office of Hazardous Materials Safety will conduct a review of the public awareness program requirements for pipeline operators implemented by the Office of Pipeline Safety. The results of this review will be used to make a determination on the best course of action to increase public awareness. In the meantime, PHMSA will continue to participate in and promote the efforts of the TRANSCAER program as well as promote voluntary railroad programs and encourage that these programs be used to target the public in addition to the emergency response community.
02/24/15	NTSB 201401488	We note that you plan to review your public awareness program requirements for pipeline operators, after which you will determine the best course of action to take to increase public awareness involving hazardous materials transported by rail. In the interim, you will continue to participate in and promote the efforts of the Transportation Community Awareness and Emergency Response (TRANSCAER®) program and promote voluntary railroad programs, and you will encourage operators to target both the public and the emergency response community through these programs.

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After you provide us with your planned action to increase public awareness involving hazardous materials transported by rail, we will evaluate your response. Pending our receipt of such information, Safety Recommendation R-14-19 is classified OPEN—UNACCEPTABLE RESPONSE.

03/16/16	Addressee 201600208	<p>-From Marie Therese Dominguez, Administrator: The PHMSA concurs with this NTSB recommendation to require railroads to implement a public education program. In response, the Office of Hazardous Materials Safety (OHMS) is engaging our counterparts in the Office of Pipeline Safety (OPS), the Federal Railroad Administration (FRA), and TRANSCAER, to explore ways for railroads to provide effective outreach and information to the communities along hazmat routes. This engagement will explore targeted Hazardous Materials Emergency Preparedness (HMEP) funding criteria, regional survey-based commodity flow studies, and community outreach resource templates, along with other possibilities, to respond to the NTSB recommendation. This may also include providing resources to communities to help them understand what information is needed to appropriately plan for and respond to rail hazmat incidents and whom to contact for this information.</p> <p>Engaging rail carriers in a public awareness program with requirements similar to those outlined under 49 CFR §§ 192.616 and 195.440 for pipeline operators, in a voluntary manner, is a considerable undertaking. We note that the American Petroleum Institute (API) Recommended Practice RP 1162, Public Awareness Programs for Pipeline Operators (API 2003), can help guide public awareness programs that help communities understand how to prevent and respond to emergencies. However, its focus on pipeline emergencies, and the codified requirements for pipeline operators limit its application to a voluntary program for rail carriers.</p> <p>The Department of Transportation (DOT) and PHMSA continue to engage the emergency response community to improve preparedness and emergency response training associated with the transport of crude oil and other Class 3 flammable liquids by rail. Over the past year, PHMSA has met with subject matters experts from the emergency response community, railroad industry, and other Federal agencies to capture lessons learned and best practices for responding to rail incidents involving crude oil. This engagement led to the publication of the Lessons Learned Roundtable Report and the Commodity Preparedness and Incident Management Reference Sheet for Petroleum Crude Oil. These documents provide emergency responders with an incident management framework, based on pre-incident planning and response best practices, for responding to a rail incident involving flammable liquids, such as crude oil and ethanol.</p> <p>The PHMSA used the Commodity Reference Sheet as a baseline to develop the web accessible Transportation Rail Incident Preparedness and Response (TRIPR) training resource modules. These modules provide emergency responders with critical information on best practices related to rail incidents involving hazard Class 3 flammable liquids. The TRIPR offers a flexible approach to training first responders and emergency services personnel on pre-incident planning and response. The curriculum consists of nine training modules that focus on key response functions and incorporates three animated training scenario videos to facilitate informative tabletop discussions.⁴ In addition to the crude oil-specific initiatives above, PHMSA awards over \$21 million in grants on an annual basis through its HMEP grant program to States, Territories, and Tribes to carry out hazardous materials planning and training activities. These funds ensure state and local emergency responders are properly prepared and trained to respond to hazmat transportation incidents. Eligible activities under this grant include conducting hazmat commodity flow studies, drafting and updating hazmat transportation operations plans, funding emergency response exercises, and offering NFP A-4 725 related training.</p> <p>In September 2015, PHMSA awarded its first Assistance for Local Emergency Response Training (ALERT) grants. This competitive grant opportunity used</p>
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recovered funds from prior years and awarded non-profit organizations that have the ability to provide direct or web based hazardous materials training for volunteer or remote emergency responders. This grant was prioritized for emergency response activities related to the transportation of crude oil, ethanol and other Class 3 flammable liquids by rail. The International Association of Fire Chiefs, the Center for Rural Development, and the University of Findlay (All Hazards Training Center) were recipients of this grant.

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Total Number of Recommendations for Recommendation Report: 1