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Freight Rail Safety Issues in the 119th Congress

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SUMMARY

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August 1, 2025

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Freight Rail Safety Issues in the 119th Congress

The February 3, 2023, train derailment and chemical spill in East Palestine, OH, raised the profile of rail safety issues. Railroad labor organizations and some state and local governments have voiced concerns about railroad business practices that, in their view, put employees and communities at unnecessary risk. Railroad companies, meanwhile, have characterized more stringent safety requirements as unnecessary given the industry's decades-long record of safety improvement. Bills introduced in the derailment's immediate aftermath concerned hazardous materials transportation by rail, derailment prevention, train length, crew size, and blocked crossings, among other issues. Some of the proposed legislation aligned with indicators that showed a decline in rail safety.

Freight rail safety bills introduced in the 119th Congress include the following:

- H.R. 928, Railway Safety Act of 2025,
- H.R. 971, Reducing Accidents In Locomotives (RAIL) Act of 2025, and
- H.R. 2515, American Tank Car Modernization Act of 2025.

Freight rail safety bills introduced in the 118th Congress (none were enacted) included the following:

- S. 576 (as reported by the Senate Committee on Commerce, Science, and Transportation), Railway Safety Act of 2023, and
- H.R. 1347, Don't Block Our Communities (D-BLOC) Act of 2023,

Hazardous Materials Transportation by Rail

Since 2015, a category of trains known as High Hazard Flammable Trains has been subject to additional federal safety requirements concerning advance notification of emergency responders, lower maximum speeds, and restrictions on using older, less crashworthy railcars. The train that derailed in East Palestine did not qualify as such due to the type and quantity of cargo it carried. Several legislative proposals would create new designations of trains carrying a greater variety of cargo types and quantities in order to extend those safety requirements to more trains.

Preventing Derailments

The East Palestine derailment was said to be likely caused by a defective wheel bearing that overheated, causing a wheel and axle to come loose. Several legislative proposals have focused on preventing this type of derailment in the future. Some proposals concern wayside devices known as defect detectors that can identify a bearing in danger of failing; others involve mandating more rigorous physical inspection of train cars before they depart from a yard or terminal. Train length has also been identified as a potential factor in some derailments, as the unequal distribution of weight on a long train could put excessive strain on freight cars and couplers when braking. Several technologies exist that could improve the reliability of train brakes.

Other Issues

Legislation has been introduced that would create a federal nationwide limit on how long a train may occupy or block a highway-rail crossing. State and local laws that forbid this practice repeatedly have been found to be preempted by federal law and unenforceable, even though no federal statute or regulation directly forbids the practice. Other issues under consideration include labor protections, such as minimum train crew size requirements and compulsory participation in a Confidential Close Call Reporting System (C3RS) for all railroads.

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Introduction

The February 3, 2023, train derailment and chemical spill in East Palestine, OH, raised the profile of rail safety issues. Railroad labor organizations and state and local governments have voiced concerns about railroad business practices that, in their view, put employees and communities at unnecessary risk. Railroad companies, meanwhile, have characterized more stringent safety requirements as unnecessary given the industry's record.[1] Several bills introduced in the 119th Congress concern hazardous materials (hazmat) transportation by rail, derailment prevention, train length, crew size, and blocked crossings, among other issues. Some of the proposed legislation aligns with indicators that show a decline in rail safety. The bills discussed in this report are as follows:

- H.R. 2515, American Tank Car Modernization Act of 2025,
- H.R. 971, Reducing Accidents In Locomotives (RAIL) Act of 2025, and
- H.R. 928, Railway Safety Act of 2025.

Some of these bills were first introduced in the 118th Congress and have been reintroduced in the 119th Congress. Other bills first introduced in the 118th Congress discussed in this report include

- S. 576 (as reported by the Senate Committee on Commerce, Science, and Transportation), Railway Safety Act of 2023, and
- H.R. 1347, Don't Block Our Communities (D-BLOC) Act of 2023.

Starting in the late 2010s, some railway safety indicators began trending worse after a decades-long trend of continuous improvement. In 2024, there were 963 fatalities and 6,535 injuries on America's railroads.[2] Although the number of injuries was the third-lowest in 20 years, the number of fatalities was the second-highest in at least that long (there were 968 fatalities in 2023). Trespassers and road-rail crossing incidents accounted for the majority of rail fatalities in 2024, and on-duty employees accounted for roughly half of all injuries. Per-train-mile rates of train incidents have remained comparatively low, and rates of injuries or fatalities have held steady; grade crossing incident rates have risen and erased earlier safety gains. Trespassing deaths, in particular, have nearly doubled on a per-train-mile basis since 2015 after over a decade of stability (see **Figure 1**).

The number of railroad hazmat spills has remained low, both in comparison with railroad performance in past years and with other modes; no hazmat-by-rail spill has resulted in a fatality in over a decade. However, hazmat-by-rail releases tend to result in more damage (as measured in dollars) per incident than highway or pipeline spills.[3]

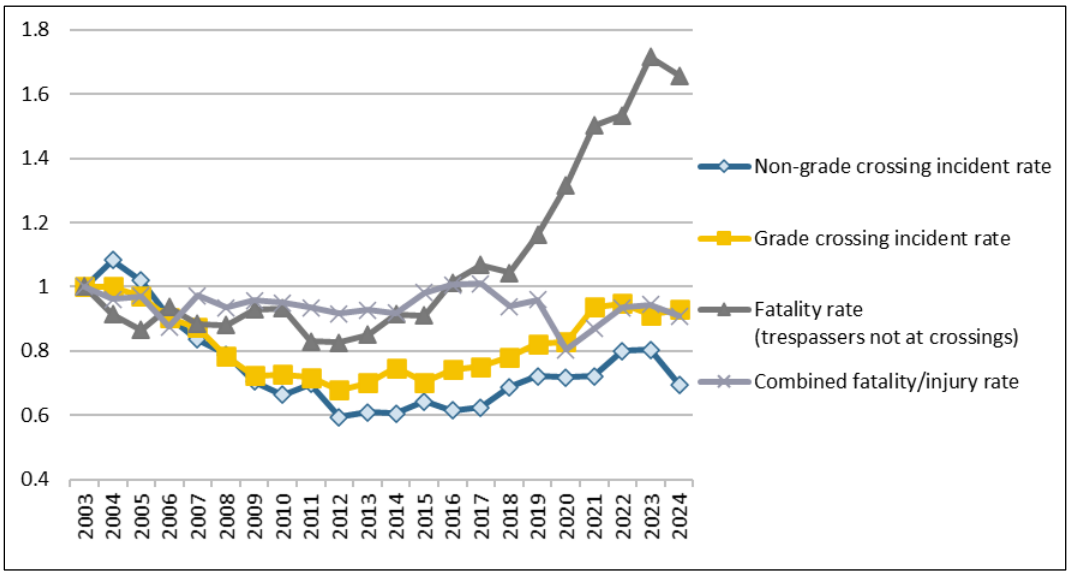
[1] See Government Accountability Office, *Information on Precision-Scheduled Railroading*, GAO-23-105420, December 2022, at https://www.gao.gov/assets/gao-23-105420.pdf.

[2] U.S. Department of Transportation (DOT), Federal Railroad Administration (FRA), Office of Safety Analysis, "Ten Year Accident/Incident Overview," https://safetydata.fra.dot.gov/OfficeofSafety/publicsite/Query/TenYearAccidentIncidentOverview.aspx.

[3] DOT, Pipeline and Hazardous Materials Safety Administration (PHMSA), "10 Year Incident Summary Reports," https://portal.phmsa.dot.gov/analytics/saw.dll?Portalpages&PortalPath=%2Fshared%2FPublic%20Website%20Pages%2F_portal%2F10%20Year%20Incident%20Summary%20Reports.

Figure 1. Change in Rail Safety Incident Rates, 2003-2024 (Index)

1 = 2003 rate per train-mile



Source: CRS analysis of U.S. Department of Transportation, Federal Railroad Administration, "Rail Safety Overview Report (1.12)," https://data.transportation.gov/stories/s/dsuf-xcni.

Note: Data are for calendar years. Data exclude suicides and suicide attempts.

The Federal Railroad Administration (FRA), part of the Department of Transportation (DOT), issues and enforces rail safety regulations. FRA's authority originates in the Federal Rail Safety Act of 1970 (FRSA; P.L. 91-458), which gives the agency power to "prescribe regulations and issue orders for every area of railroad safety […]." Since FRSA became law, the number of derailments, collisions, and railroad injuries have all decreased by 80%-90%, even as the number of train-miles operated decreased by 25%.[4]

Hazardous Materials Transportation by Rail

The East Palestine derailment focused attention on the safety of hazmat moved by rail. According to the quintennial economic census, hazmat accounted for roughly 7.2% of the total tons hauled by freight railroads in 2017 and roughly 7.5% of railroad ton-miles.[5] These percentages are closely in line with the two previous censuses, but the volume of hazmat moved by rail decreased in raw terms over the 10-year period from 2007 to 2017 (**Table 1**).

[4] DOT, Bureau of Transportation Statistics (BTS), *National Transportation Statistics*, Table 2-43: Railroad System Safety and Property Damage Data (excludes highway-rail grade-crossing accidents).

[5] U.S. Census Bureau, *The 2017 Commodity Flow Survey Final Tables*, November 4, 2022, https://www.census.gov/data/tables/2017/econ/cfs/aff-2017.html.

Table 1. Volume of Hazardous Materials Transported by Rail in 2007, 2012, and 2017

	2007	2012	2017
Hazmat tons by rail (millions)	129.7	111.0	90.4
… as % of all freight tons	1.0%	1.0%	0.7%
… as % of all rail tons	7.0%	6.8%	7.2%
Hazmat ton-miles by rail (billions)	92.2	84.9	61.7
… as % of all freight ton-miles	2.8%	2.9%	2.0%
… as % of all rail ton-miles	6.9%	7.0%	7.5%

Sources: U.S. Department of Transportation, Bureau of Transportation Statistics (BTS), "Freight Activity in the United States: 1993, 1997, 2002, 2007, 2012 and 2017," https://www.bts.gov/content/freight-activity-united-states-1993-1997-2002-and-2007; BTS, "U.S. Hazardous Materials Shipments by Transportation Mode, 2017," https://www.bts.gov/content/us-hazardous-materials-shipments-transportation-mode-2007; and BTS, "Table 1b. Hazardous Material Shipment Characteristics by Mode of Transportation for the United States: 2012 and 2007," July 15, 2015, https://www.bts.gov/archive/publications/commodity_flow_survey/2012/hazardous_materials/table1b.

Notes: Hazmat = hazardous materials. Figures are for the "rail alone" mode only and do not include multimodal shipments, such as by rail and truck or rail and barge.

Congress and the public have shown increased interest in hazmat-by-rail safety in the past. A surge of crude oil production in the mid-2010s and a series of high-profile spills led to increased regulatory scrutiny of the transportation of flammable liquids by rail. Flammable liquids made up roughly half of all hazmat shipments by rail in 2018.[6] Since then, the number of incidents, incident rate per train-mile, and severity of hazmat releases has remained fairly steady. Nevertheless, the high-profile nature of the East Palestine derailment and spill has led to calls for further legislation around hazmat-by-rail safety, in many cases building on crude-by-rail regulations put in place in 2015.[7]

High-Hazard Flammable Trains

The 2015 rule created a new official classification for high-hazard flammable trains (HHFTs), defined as any train carrying 20 or more carloads of Class 3 flammable liquids in a continuous block or 35 or more carloads of Class 3 flammable liquids in any order throughout the train.[8] Under the rule, rail carriers operating HHFTs must complete periodic routing analysis to reduce risks to populated areas, notify state emergency response commissions of the volume of HHFTs passing through given areas, and operate at a lower top speed than might otherwise be permitted. The rail industry had its own voluntary standards at the time of the 2015 rule, known as AAR Circular OT-55, which apply to a wider set of trains—including all HHFTs—but do not require proactive local notification.

[6] Railway Supply Institute, "Hazmat shipments by class – U.S. and Canada 2018," at https://tankcarresourcecenter.com/tankcar101/#1499694206621-d3e6b712-ac21.

[7] DOT, PHMSA "Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains," 80 *Federal Register* 71952, November 18, 2015.

[8] 49 C.F.R. §171.8. A subset of high-hazard flammable trains (HHFTs), designated high-hazard flammable unit trains (HHFUTs), is defined as any train carrying 70 or more carloads of Class 3 flammable liquids. These trains were briefly required to be equipped with electronically controlled pneumatic (ECP) braking systems, discussed later in this report. Class 3 flammable liquids, one of nine classes of hazardous materials, are defined as liquids that give off a flammable vapor within certain temperature thresholds.

Certain bills in the 118th and 119th Congresses contain provisions that would expand the definition of HHFT or create new classifications that would apply to commodities beyond flammable liquids (a comparison of these provisions alongside current law and industry standards is in **Table 2**, below). For example, H.R. 928 (119th Congress) would direct FRA to issue new requirements for hazmat-by-rail shipments not already covered by the HHFT rules. The bill does not specify a threshold in terms of the number of loaded cars, which would effectively allow FRA to establish those thresholds when it issues the new regulations. The version of S. 576 reported by the Senate Committee on Commerce, Science, and Transportation in the 118th Congress would have established a new category of trains, high-hazard trains (HHTs), which would have included some trains carrying hazmat other than flammable liquids; the same categorization was reintroduced in the 119th Congress in H.R. 971. Under S. 576 (118th Congress), HHTs would have been held to a set of requirements similar to those applicable to HHFTs.

Table 2. Current and Previously Proposed High-Hazard Train Categories

	Category in Current Law	AAR Circular OT-55	H.R. 928 (119th Congress)	S. 576 (RS) (118th Congress)
Designation	High-Hazard Flammable Train (HHFT)	Key Train	n/a	High-Hazard Train (HHT)
Threshold	35+ carloads of any Class 3 flammable liquid; or 20+ carloads of any Class 3 flammable liquid in a continuous block of cars	20+ carloads or intermodal portable tank loads of any combination of hazardous materials (hazmat); or 1+ carload of Poison or Toxic Inhalation Hazard (PIH or TIH) (Hazard Zone A, B, C, or D), anhydrous ammonia (UN1005), ammonia solutions (UN3318), Spent Nuclear Fuel (SNF), or High-Level Radioactive Waste (HLRW)	Hazmat other than HHFTs	20+ carloads of flammable liquid; or 1+ carload of Poison or Toxic Inhalation Hazard (PIH or TIH), Spent Nuclear Fuel (SNF), High-Level Radioactive Waste (HLRW); or 10+ carloads of explosives; or 5+ carloads of flammable gas; or 20+ combined carloads of flammable liquid, flammable gas, and/or explosives
Local Notification	Routing analysis Disclosures to state/tribal emergency response commissions	n/a	Advance notice of hazmat shipments to state/tribal emergency response commissions, including a written gas discharge plan	Availability of real-time train consist information Disclosures to state emergency response commissions Emergency response plans

	Category in Current Law	AAR Circular OT-55	H.R. 928 (119th Congress)	S. 576 (RS) (118th Congress)
Maximum Speed	50 miles per hour (mph) 40 mph in high-threat urban areas* unless all tank cars meet or exceed Department of Transportation (DOT)-117/117P/117R standards	50 mph 30 mph if a wayside detector reports a defective bearing, until next detector or mechanical inspection	As determined to be necessary by the Secretary of Transportation	50 mph 40 mph in high-threat urban areas* if carrying 20+ carloads of flammable liquids, unless all tank cars meet or exceed DOT-117/117P/117R standards
Other Requirements	Brakes must use a two-way end-of-train device or distributed power	Sidings and auxiliary tracks must meet Federal Railroad Administration Class 2 standards (able to support 25 mph) or better Cars must be equipped with roller bearings	Reduce or eliminate blocked crossings Additional requirements regarding train length and weight; train consist; route analysis and selection; track standards; track, bridge, and railcar maintenance; signaling and train control; response plans; and any other requirements that the Secretary determines necessary	n/a

Source: Full text for indicated bill(s) on Congress.gov, https://www.congress.gov/.

Notes: RS = as reported by committee in the Senate; n/a = not applicable; AAR = Association of American Railroads.

* High threat urban areas (HTUAs), as designated by the Transportation Security Administration based on various risk factors, consist of a city limit or combined adjacent city limits plus a 10-mile buffer zone extending from the city border(s). For the full list of HTUAs, see Appendix A to 49 C.F.R. Part 1580, https://www.ecfr.gov/current/title-49/subtitle-B/chapter-XII/subchapter-D/part-1580/appendix-Appendix%20A%20to%20Part%201580.

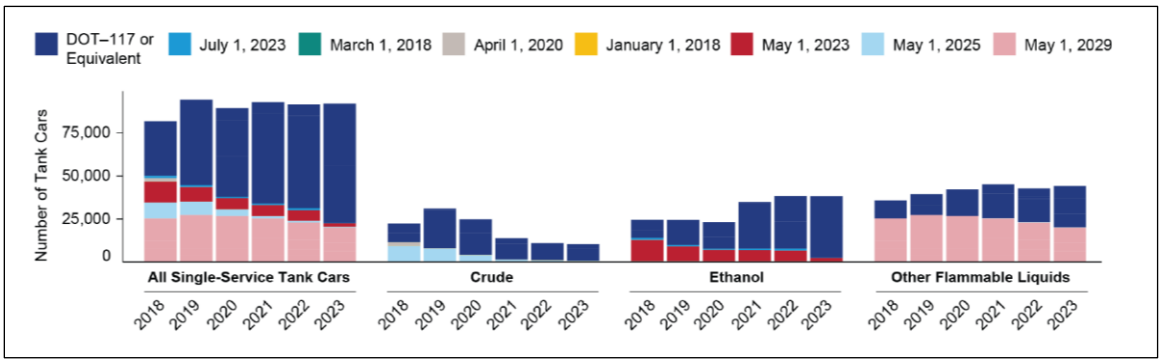
Tank Car Crashworthiness

Section 7304 of the Fixing America's Surface Transportation Act of 2015 (FAST Act; P.L. 114-94) mandated a commodity-specific phaseout of older tank cars used to transport Class 3 flammable liquids. Under the corresponding regulations issued by DOT's Pipeline and Hazardous Materials Safety Administration (PHMSA), certain commodities and certain older tank car specifications were to be phased out faster than others. PHMSA assigned the most aggressive deadlines to crude oil (all tank cars were required to meet the newest specifications by May 1, 2025); other types of flammable liquid can be transported in older specifications of tank cars until May 1, 2029, with the possibility of extensions into 2031 if the Secretary of Transportation were to find that shop capacity is insufficient to retrofit old cars or manufacture new ones in time. Newer cars have thicker shells and other features that make them less likely to rupture. These requirements apply only to unpressurized tank cars that carry flammable liquids; flammable gas of the type that was vented and burned in East Palestine is transported in pressurized tank cars that are required to be equipped with more robust crashworthiness features. The requirements do not apply to unpressurized tank cars carrying hazardous materials that are not flammable liquids.

A 2024 Bureau of Transportation Statistics report found that most crude oil and ethanol cars conform to the enhanced standards required by the FAST Act, and roughly half of cars used to carry other flammable liquids do not (**Figure 2**).

Figure 2. FAST Act Compliant and Noncompliant Tank Cars Operating, 2018-2023

Color-coded by statutory phaseout date



Source: U.S. Department of Transportation, Bureau of Transportation Statistics (special analysis based on data provided by the Association of American Railroads), *Progress Towards Safer Rail Tank Cars Transporting Flammable Liquids: 2024 Report*, https://rosap.ntl.bts.gov/view/dot/77411.

Several cars in the East Palestine train were (lawfully) carrying flammable liquids in tank cars built to specifications that are to be phased out; one of these cars ruptured and spilled its contents. The National Transportation Safety Board (NTSB) investigated the incident and recommended that PHMSA obtain authority from Congress to accelerate the phaseout of such cars.[9] Several legislative measures have been proposed to that effect. As introduced in the 118th Congress, the Railway Safety Act of 2023 would have accelerated the phaseout date for all non-ethanol, non-crude cars from May 1, 2029, to May 1, 2025. The version reported by the Senate Commerce, Science, and Transportation Committee would have accelerated that phaseout process to December 31, 2027, with the possibility of a one-year extension similarly to existing law. A similar bill (H.R. 1633, 118th Congress) would have accelerated the phaseout date by one year, to May 1, 2028. In the 119th Congress, one bill (H.R. 928) would adopt a May 1, 2027, deadline without the possibility of an extension; another (H.R. 971) would preemptively extend the deadline to May 1, 2030, while removing the possibility of further extensions (**Table 3**). The updated deadline would affect about 25,000 tank cars in service.

Table 3. Current and Previously Proposed Tank Car Phaseout Deadlines

For DOT-111 and CPC-1232 tank cars carrying flammable liquids in Packing Group II/III

Current Law	118th Congress			119th Congress	
	S. 576 (IS)	S. 576 (RS)	H.R. 1633	H.R. 928	H.R. 971
5/1/2029**	5/1/2025	12/31/2027*	5/1/2028	5/1/2027	5/1/2030

Source: Full text for indicated bill(s) on Congress.gov, https://www.congress.gov/.

[9] National Transportation Safety Board (NTSB), *Norfolk Southern Railway Derailment and Hazardous Materials Release*, Railroad Investigation Report RIR-24-05, June 25, 2024, https://www.ntsb.gov/investigations/AccidentReports/Reports/RIR2405%20CORRECTED.pdf. Separately, NTSB recommended that PHMSA establish a replacement schedule for all unpressurized tank cars carrying hazardous materials, not just those carrying flammable liquids, and seek (if necessary) legislative authority to do so.

Notes: IS = as introduced in the Senate; RS = as reported by committee in the Senate. Packing Group II/III refers to a subset of flammable liquids other than crude oil or ethanol. Deadlines for phasing out DOT-111 or CPC-1232 tank cars carrying crude oil, ethanol, or other flammable liquids in Packing Group I have passed or would remain unchanged. If the Secretary finds that a shortage of capacity exists for retrofit or replacement of noncompliant tank cars, an extension may be granted for one (*) or two (**) years.

Train Braking

Trains generally use compressed air to lift brakes away from train wheels while a train is in motion. When pressure in the main compressed air hose drops (whether commanded by the train driver or in a derailment), the brakes will engage. On a long train, this loss of air pressure can take several seconds to reach cars at the far end(s). This is one reason why, as noted in **Table 2** under "Other Requirements," HHFTs are required to be equipped with a device capable of engaging the brakes from the rear of the train as well as the front. A provision of S. 1044 (118th Congress) would have required FRA to update its regulations to require more frequent communication between locomotives and end-of-train devices. A provision of S. 576, as reported in the 118th Congress, would instead have directed the Railroad Safety Advisory Committee (RSAC) to review those regulations and submit recommendations if it were found that requiring more frequent communication would improve safety during braking.

Another technology, electronically controlled pneumatic (ECP) braking, uses electrical signals instead of air pressure to engage brakes simultaneously, potentially reducing the distance needed to fully stop a moving train and reducing the "in-train" forces caused by some cars braking before others. Longer trains may be more susceptible to dangerous in-train forces due to being heavy and in situations when one part of the train might be moving uphill and decelerating while another part of the same train might be moving downhill and accelerating.

Opposition to ECP brakes in freight rail service generally stems from costs associated with implementation, especially the transition from compressed air brakes to ECP brakes. For *any* car equipped with ECP brakes to function properly, *all* locomotives and cars on the train must also be equipped with ECP brakes. Because railroads regularly interchange railcars between and among themselves and railcars can have relatively long service lives, all railcars would either need to be retrofitted to work with ECP brakes *or* traditional compressed air brakes to function properly. Once the entire railcar fleet were ECP-equipped, traditional air brakes could be phased out without affecting the ability to interchange cars.

In their 2015 crude-by-rail safety rulemaking, PHMSA and FRA initially required all high-hazard flammable unit train (HHFUTs) to be equipped with ECP brakes. HHFUTs generally shuttle loads between one point of origin and one destination without transferring cars to other trains, which could make ECP implementation more straightforward. However, later in 2015, a provision in Section 7311 of the FAST Act (P.L. 114-94) required DOT to conduct additional testing and analysis of the costs and benefits of the ECP brake rule. When the rule's costs were found to exceed its benefits, the ECP requirement was removed in 2018 in fulfillment of the FAST Act provision.[10]

[10] DOT, PHMSA, "Hazardous Materials: Removal of Electronically Controlled Pneumatic Brake System Requirements for High Hazard Flammable Unit Trains," 83 *Federal Register* 48393, September 25, 2018, https://www.federalregister.gov/documents/2018/09/25/2018-20647/hazardous-materials-removal-of-electronically-controlled-pneumatic-brake-system-requirements-for.

Emergency Response Training

State or local emergency services are usually the first to respond to a hazmat release.[11] Local first responders may not know exactly what hazmat release to prepare for until it occurs, as railroads generally do not share specific information about the contents and schedules of individual freight trains with the communities along their routes. PHMSA has several emergency response planning and training grant programs authorized under 49 U.S.C. §5116. One such program, the Alert Grant Program authorized under Section 5116(j), is specifically worded to support the creation of training materials for responding to railroad chemical and oil spills. These grants are generally issued from a fund that holds fees and fines collected by PHMSA; several bills introduced in the 118th and 119th Congresses would add or increase those fees to make more such grant funding available.

Section 7302 of the FAST Act originally directed DOT to issue regulations requiring Class I railroads transporting hazmat to generate accurate, real-time information about the train's contents for distribution to first responders in case of an emergency within a year of enactment (i.e., December 2016).[12] Section 26003 of the Infrastructure Investment and Jobs Act of 2021 (IIJA; P.L. 117-58) later extended this deadline to December 5, 2022, and PHMSA published a notice of proposed rulemaking in June 2023.[13] Since 2014, the Association of American Railroads (AAR), the International Association of Fire Chiefs, the Operation Respond Institute, and others have voluntarily maintained an app-based system, AskRail, which satisfies some—but not all—of the real-time information requirements in the FAST Act. Two issues identified with AskRail are that not all first responders are aware of the program, and functionality suffers in areas with poor wireless data connectivity. Provisions of H.R. 8996 in the 118th Congress would have (1) directed states receiving certain FRA grant funds to notify first responders of the program, and (2) directed FRA to create a pilot program to identify areas where improved AskRail connectivity should be prioritized, authorizing $25 million each year for four years to fund the program.

Prevention of Train Derailments

Derailments account for roughly two-thirds of rail safety incidents (not including grade crossing incidents). In raw terms and on a per-train-mile basis, most derailments tend to occur on yard, siding, or industry tracks, as opposed to occurrences on main line tracks as in the East Palestine derailment. (See **Table 4**, below.)

[11] For the federal role in responding to oil and chemical spills, see CRS Report R43251, *Oil and Chemical Spills: Federal Emergency Response Framework*, by David M. Bearden and Jonathan L. Ramseur.

[12] The largest freight rail carriers, as measured by operating revenue, are termed "Class I" railroads. These railroads own roughly two-thirds of the country's railroad tracks and account for over 90% of industry revenue. As of the publication of this report, six Class I railroads serve the United States: Union Pacific, BNSF Railway, Norfolk Southern, CSX Transportation, Canadian National, and Canadian Pacific Kansas City. Since 2021, a Class I railroad has been defined as one with operating revenues exceeding $900 million in 2019 dollars. See Surface Transportation Board, "Surface Transportation Board Adopts Final Rule Amending Thresholds for Classifying Rail Carriers," press release, April 5, 2021, https://www.stb.gov/news-communications/latest-news/pr-21-16/.

[13] DOT, PHMSA, "Hazardous Materials: FAST Act Requirements for Real-Time Train Consist Information," 88 *Federal Register* 41541, June 27, 2023, https://www.federalregister.gov/documents/2023/06/27/2023-13467/hazardous-materials-fast-act-requirements-for-real-time-train-consist-information.

Table 4. Number of Derailments and Other Rail Safety Incidents, Excluding Grade Crossing Incidents, 2014-2024

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Derailments	1,322	1,351	1,213	1,273	1,377	1,344	1,119	1,115	1,229	1,300	1,081
On main line tracks	*358*	*324*	*272*	*335*	*320*	*344*	*313*	*297*	*291*	*309*	*288*
On yard, siding, or industrial tracks	*964*	*1,027*	*941*	*938*	*1,057*	*1,000*	*806*	*818*	*938*	*991*	*793*
Other Incidents	564	579	511	516	620	653	557	568	675	662	626

Source: CRS analysis of U.S. Department of Transportation, Federal Railroad Administration, "Rail Safety Overview Report (1.12)," https://data.transportation.gov/stories/s/dsuf-xcni.

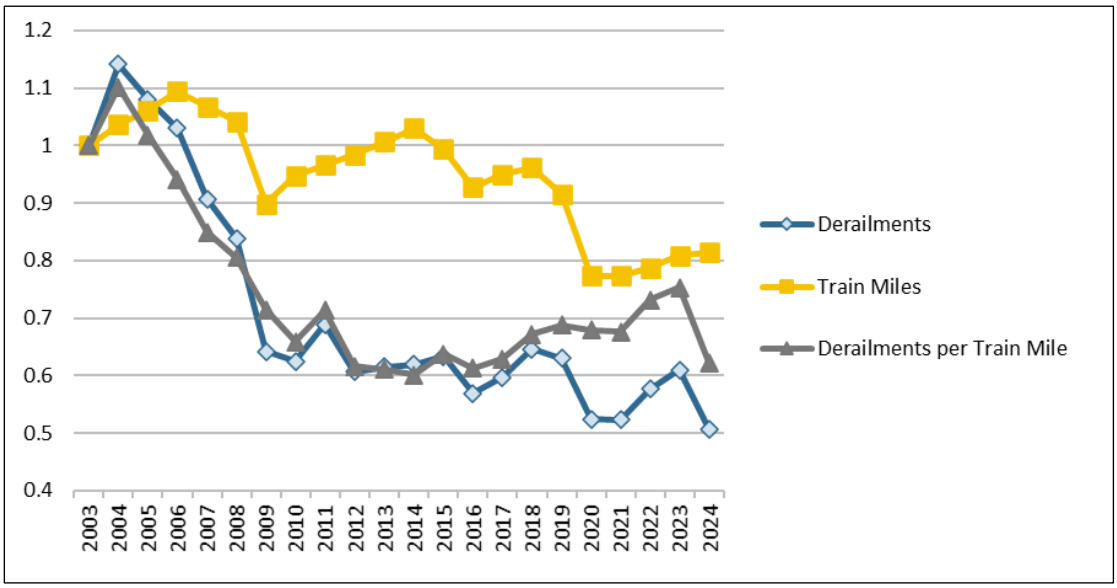
Note: On- and off-mainline derailments may add to more than total derailments due to cases where multiple reports were filed for the same incident.

The rate of train derailments, measured in derailments per 100 million train-miles, decreased by roughly 30%-40% between 2004 and 2010 and has remained relatively steady since then (**Figure 3**). This is far below the historical high, as the derailment rate in 1980 was over four times higher than in 2022.[14] The rate of derailments per train-mile has tended to increase or decrease in close proportion to the change in the overall number of derailments. However, those two figures began diverging around 2020, when both the number of train-miles and derailments fell (likely due to changes in traffic volume during the COVID-19 pandemic), and the derailment rate per train-mile did not.

[14] CRS analysis of DOT, BTS, Table 2-41: Train Fatalities, Injuries, and Accidents by Type of Accident, https://www.bts.gov/archive/publications/national_transportation_statistics/table_02_41; and DOT, BTS, Table 2-43: Railroad System Safety and Property Damage Data (Excludes highway-rail grade-crossing accidents), https://www.bts.gov/archive/publications/national_transportation_statistics/table_02_43.

Figure 3. Change in Derailments, Train-Miles, and Derailment Rate per Train-Mile, 2003-2024 (Index)

1 = 2003 value

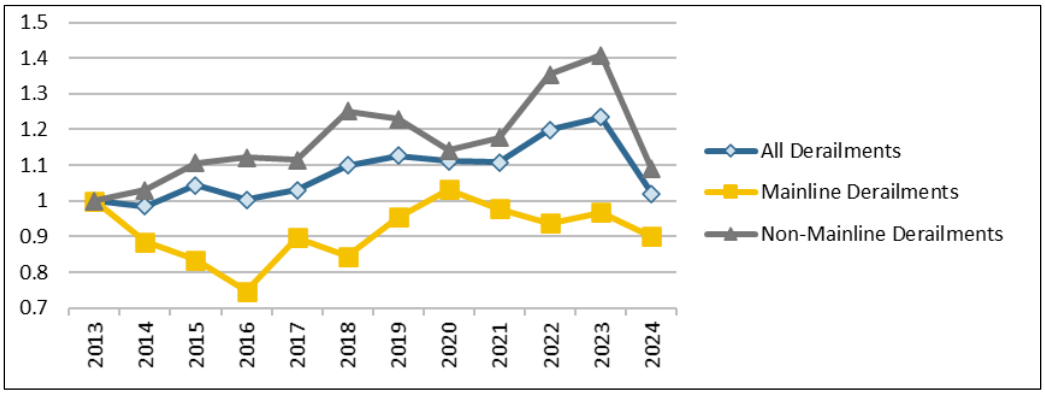


Source: CRS analysis of U.S. Department of Transportation, Federal Railroad Administration, "Rail Safety Overview Report (1.12)," https://data.transportation.gov/stories/s/dsuf-xcni.

An increase in the overall derailment rate from 2014 to 2023 appears to have been driven largely by derailments on yard, siding, or industrial tracks, as the rate of all derailments on mainline tracks—such as the East Palestine derailment—has remained close to or below 2013 levels (**Figure 4**). A drop in the overall derailment rate in 2024 similarly appears to have been driven by a lower rate of derailments off mainline track.

Figure 4. Change in Derailment Rate per Train-Mile by Track Type, 2013-2024 (Index)

1 = 2013 value



Source: CRS analysis of U.S. Department of Transportation, Federal Railroad Administration, "Rail Safety Overview Report (1.12)," https://data.transportation.gov/stories/s/dsuf-xcni.

Note: Mainline and non-mainline derailment rates calculated using mainline and non-mainline train-miles, respectively.

As discussed below, several legislative proposals have come before Congress with the aim of reducing the risk of derailments. Some of these proposals aimed to prevent derailments from occurring, such as by requiring trackside detectors that can identify damaged equipment before it fails or additional inspections before a train can clear a yard. These requirements would have primarily affected derailments on mainline track, which is not where most derailments occur. Other proposals, such as increased civil penalties for safety violations, were intended to affect all aspects of train operations.

Wayside Defect Detectors

Wheel or axle failure is a relatively common cause of derailments. According to the National Transportation Safety Board's preliminary findings, a wheel bearing on one of the East Palestine train's freight cars overheated, which led to the failure of one of the car's axles.[15] One analysis of Class I freight derailments on mainline track from 2006 to 2015 indicated that defects in railcar wheels or axles were the second-leading cause of derailments, after track defects.[16]

Railroads use sensors alongside the tracks called wayside bearing failure detectors, or "hot box" detectors, to identify overheating bearings and address them before axle failure and resulting derailments occur. If a detector locates an overheating bearing, it transmits a message to the locomotive engineer, who can then slow the train to a safer speed or stop it to conduct a visual inspection. Other sensors can detect cracked wheels or dragging equipment or can identify defective bearings acoustically instead of by temperature. Federal regulations do not currently require the use of wayside defect detectors or specify temperature thresholds for inspection or removal of cars with overheating bearings. FRA has published guidance concerning their placement and use,[17] but NTSB has recommended that FRA formally establish minimum requirements for placement and alert thresholds, informed by research into the effectiveness of current bearing defect detection systems.[18] AAR publishes its own industry standards, one of which—AAR Circular OT-55—calls for wayside detectors along tracks used by trains deemed particularly hazardous (so-called "key trains") or along tracks that carry large quantities of hazmat on an annual basis ("key routes").

Several bills introduced in the 118th and 119th Congresses would require certain lines to be equipped with defect detectors at prescribed intervals (**Table 5**). However, the number of defect detectors is not the only factor in preventing derailments due to axle failure. Before reaching East Palestine, the train that derailed passed several detectors measuring an increase in the bearing's temperature above normal levels but not above thresholds set by Norfolk Southern that would have required stopping the train for inspection. A detector in East Palestine itself showed the

[15] National Transportation Safety Board (NTSB), *Norfolk Southern Railway Derailment and Hazardous Materials Release*, Railroad Investigation Report RIR-24-05, June 25, 2024, https://www.ntsb.gov/investigations/AccidentReports/Reports/RIR2405%20CORRECTED.pdf.

[16] Brandon Z. Wang, Christopher P.L. Barkan, and M. Rapik Saat, "Quantitative Analysis of Changes in Freight Train Derailment Causes and Rates," *Journal of Transportation Engineering*, Part A: Systems, vol. 146, no. 11 (November 2020). The study indicates that mainline freight derailments for U.S. Class I railroads declined 49% from 2006 to 2015.

[17] DOT, FRA, *An Implementation Guide for Wayside Detector Systems*, May 2019, https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/18667/Wayside%20Detector%20Implementation%20Guide.pdf.

[18] National Transportation Safety Board (NTSB), *Norfolk Southern Railway Derailment and Hazardous Materials Release*, Railroad Investigation Report RIR-24-05, June 25, 2024, https://www.ntsb.gov/investigations/AccidentReports/Reports/RIR2405%20CORRECTED.pdf.

bearing had risen above a "critical" temperature threshold, requiring the car to be removed from the train; by then it was too late to stop the train before it derailed.[19]

Table 5. Current and Proposed Hot Bearing Detector Requirements

Bill	Bearing Detector Frequency
AAR Circular OT-55	Every 40 miles on "Key Routes"*
119th H.R. 928/H.R. 971	Every 10 miles on routes used by trains carrying hazardous materials (hazmat)
118th S. 576 (RS)/H.R. 8996	Every 20 miles on main lines** equipped with acoustic bearing detectors or similar technology; Every 15 miles on main lines** not equipped with acoustic bearing detectors or similar technology; and At least 10 miles before entering any urbanized area with a population of at least 75,000 **OR** An alternative detection plan approved by the Secretary, subject to review at least triennially
118th H.R. 1633	Every 10 miles on routes used by trains carrying hazmat Placards on hazmat cars must withstand temperatures of 180 degrees.***
118th H.R. 5871	No minimum interval stipulated, but the Secretary is directed to include frequency of detector placement in new regulations.

Source: Full text for indicated bill(s) on Congress.gov, https://www.congress.gov/.

Notes: RS = as reported by committee in the Senate; AAR = Association of American Railroads.

S. 576 (RS)/H.R. 8996 would have authorized the appropriation of "such amounts as may be necessary" to be distributed by formula to eligible commuter rail authorities in proportion to the number of detectors required for compliance but would have made no funding directly available to freight railroads.

* AAR Circular OT-55 defines "Key Routes" as any track with a combination of 10,000 carloads or intermodal portable tank loads of hazmat, or a combination of 4,000 car loadings of PIH or TIH (Hazard zone A, B, C, or D), anhydrous ammonia, flammable gas, Class 1.1 or 1.2 explosives, environmentally sensitive chemicals, Spent Nuclear Fuel (SNF), and High-Level Radioactive Waste (HLRW) over a period of one year.

** S. 576 (RS) defines "main line" as any segment or route of railroad tracks with over 5 million annual gross tons of railroad traffic and a maximum allowable speed greater than 25 miles per hour (FRA Class 3 track or higher) and any intercity or commuter passenger rail line over which high-hazard trains (HHTs) operate.

*** This provision is grouped with defect detector requirements in the bill text but is more closely related to tank car safety standards.

Railcar Inspections and Inspector Qualifications

The danger of a defective bearing can be mitigated if the defect is found before a train departs from its yard or terminal. FRA regulations require that "[a]t each location where a freight car is placed in a train, the freight car shall be inspected before the train departs. This inspection may be made before or after the car is placed in the train."[20] These inspections are conducted by railroad employees who have satisfied the qualification requirements established by the railroads pursuant

[19] National Transportation Safety Board (NTSB), *Norfolk Southern Railway Derailment and Hazardous Materials Release*, Railroad Investigation Report RIR-24-05, June 25, 2024, https://www.ntsb.gov/investigations/AccidentReports/Reports/RIR2405%20CORRECTED.pdf.

[20] 49 C.F.R. §215.13(a).

to federal standards and guidelines.[21] Some rail labor organizations have argued that reductions in the railroad workforce, combined with aggressive performance targets, have resulted in unrealistic workloads for certain personnel. This could in turn incentivize rushed inspections, fewer removals of potentially defective cars so as not to delay a departing train, or both.

Some rail safety bills in the 118th Congress would have established a minimum time requirement for each inspection of an individual railcar or locomotive and would require additional inspections for equipment in trains carrying hazmat.[22] In the 119th Congress, H.R. 971 includes a less stringent measure; it would ban railroads from establishing maximum car inspection times (as opposed to establishing a minimum). Another bill introduced in the 119th Congress, H.R. 2515, proposes new programs to outfit railcars with onboard sensors capable of delivering real-time condition data while a train is in motion, supplementing wayside sensors and pre-departure inspections.

Railroad employees carry out most routine safety inspections required by law or regulation. FRA also employs inspectors, who may verify that those inspections have been conducted and documented correctly and may conduct their own inspections. H.R. 5871 (118th Congress) contained provisions related to FRA inspector hiring, which would have addressed the need to attract and retain qualified inspectors while adding inspector positions. Provisions in the bill would have set minimum staffing requirements for different inspection specialties, authorized additional funding to hire new inspectors to meet those minimums, and allowed the promotion of inspectors to higher pay scales to make compensation more competitive. FRA employed roughly 350 inspectors in FY2023, down from 390 in FY2018-FY2020.[23]

Civil Penalties

FRA has the authority to assess civil penalties for rail safety violations, as well as for violations of PHMSA hazmat safety regulations occurring on the rail system. FRA collects between $10 million and $20 million in penalties annually, roughly one-quarter of which comes from hazmat violations. These penalties are primarily intended to serve as a deterrent rather than a revenue source.[24] The maximum civil penalty amounts for rail safety violations were last amended by the Rail Safety Improvement Act of 2008 (P.L. 110-432, Div. A); hazmat safety penalty amounts were last amended by the Moving Ahead for Progress in the 21st Century Act of 2012 (MAP-21; P.L. 112-141). Several bills have been introduced that propose to raise the maximum amount of a civil penalty FRA may assess, with some bills proposing a sliding cap based on the annual income of the penalized party. As reported by the Senate Committee on Commerce, Science, and Transportation, S. 576 (118th Congress) did not propose a sliding cap but did propose a lower maximum for "small business concerns," which may have encompassed some shippers and short-line railroads.

[21] These standards and guidelines are codified in 49 C.F.R. Part 243, *Training, Qualification, and Oversight for Safety-Related Railroad Employees.*

[22] See S. 576/H.R. 1674 and H.R. 1633, all from the 118th Congress.

[23] For budget estimates for FY2018-FY2024, see DOT, "Budget, Performance, and Finance," https://www.transportation.gov/budget.

[24] FRA publishes agency guidelines, which are not considered regulations, recommending penalty amounts that may fall somewhere between the statutory minimum and maximum for various violations. As noted in a March 2023 *Federal Register* notice, "To promote railroad safety by enhancing and maintaining the deterrent effect of the civil penalty program, FRA is doubling its guideline penalties to account for inflation." See FRA, "Notice of Updated Civil Penalty Schedules and Guidelines," 88 *Federal Register* 15116, March 10, 2023, https://www.federalregister.gov/documents/2023/03/10/2023-04957/notice-of-updated-civil-penalty-schedules-and-guidelines.

For a comparison of proposed increases to maximum civil penalties, see **Table 6**, below.

Table 6. Current and Previously Proposed Civil Penalties

		Maximum Penalties (Current Law)		Maximum Penalties (Proposed)	
49 U.S.C. Section (Current)	**Description**	**Statutory**	**Adjusted (FY2025)**	**H.R. 928/ H.R. 971 (119th Cong.)**	**S. 576 (RS) (118th Cong.)**
§5123(a)(1)	Knowing violations of hazardous materials regulations	$75,000	$102,348	The greater of 0.5% of annual (operating) income, or $750,000	No change to current law
§5123(a)(2)	Knowing violations of hazardous materials regulations resulting in death, serious illness, or severe injury to any person or substantial destruction of property	$175,000	$238,809	The greater of 1% of annual (operating) income, or $1,750,000	No change to current law
§21301(a)(2)	Violations of railroad safety regulations issued under Title 49, Chapter 201 the *Code of Federal Regulations* (49 C.F.R.)	$25,000	$36,439	The greater of 0.5% of annual (operating) income, or $250,000	$1,000,000, or $200,000 if committed by a small business concern. May be doubled if the violation follows a pattern of repeated violations or otherwise reflects a deliberate indifference or conscious disregard to conduct. Applies to regulations issued under Chapters 201-211 of 49 C.F.R.
§21301(a)(2)	Grossly negligent violations or a pattern of repeated violations of general railroad safety regulations that have caused, or caused an imminent hazard of, death or injury to individuals	$100,000	$145,754	The greater of 1% of (annual) income or $1,000,000	$5,000,000, or $500,000 if committed by a small business concern. May be doubled if the violation follows a pattern of repeated violations or otherwise reflects a deliberate indifference or conscious disregard to conduct. Applies to regulations issued under Chapters 201-211 of 49 C.F.R.

49 U.S.C. Section (Current)	Description	Maximum Penalties (Current Law)		Maximum Penalties (Proposed)	
		Statutory	Adjusted (FY2025)	H.R. 928/ H.R. 971 (119th Cong.)	S. 576 (RS) (118th Cong.)
§21302(a)(2)	Violations of railroad safety regulations dealing with safety appliances, signal systems, locomotives, or accident/incident reporting (issued under Chapters 203-209 of 49 C.F.R.)	$25,000	$36,439	The greater of 0.5% of annual (operating) income, or $250,000	Repealed
§21302(a)(2)	Grossly negligent violations or a pattern of repeated violations of railroad safety regulations dealing with safety appliances, signal systems, locomotives, or accident/incident reporting that have caused, or caused an imminent hazard of, death or injury to individuals	$100,000	$145,754	The greater of 1% of (annual) income or $1,000,000	Repealed
§21303(a)(2)	Violations of railroad safety regulations dealing with worker hours of service (issued under Chapter 211 of 49 C.F.R.)	$25,000	$36,439	The greater of 0.5% of annual (operating) income, or $250,000	Repealed
§21303(a)(2)	Grossly negligent violations or a pattern of repeated violations of railroad safety regulations dealing with worker hours of service that have caused, or caused an imminent hazard of, death or injury to individuals	$100,000	$145,754	The greater of 1% of (annual) income or $1,000,000	Repealed

Sources: S. 576, H.R. 1674, H.R. 1633, and H.R. 8996 bill text as introduced, available at Congress.gov, https://www.congress.gov/; S. 576 as reported by committee in the Senate; Title 49 of the *U.S. Code*; and DOT, "Revisions to Civil Penalty Amounts, 2025" 89 *Federal Register* 106282, December 30, 2024.

Notes: RS = as reported by committee in the Senate.

The Federal Civil Penalties Inflation Adjustment Act of 1990 (FCPIAA; P.L. 101-410, as amended by the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 [2015 Act; P.L. 114-74, 129 Stat. 599, codified at 28 U.S.C. 2461 note]) requires federal agencies to adjust minimum and maximum civil penalty amounts to preserve their deterrent impact. The 2015 Act amended the formula and frequency of the adjustments. Legislative and statutory text have been paraphrased for length and clarity.

Train Length

Train length has been a topic of recent studies by the Government Accountability Office (GAO) and FRA. Although FRA does not collect data on the lengths of all operating trains, certain data indicate that the number of long trains operating on the rail system is increasing. According to the Bureau of Transportation Statistics, the average length of a Class I railroad train (as calculated by dividing railcar-miles by train-miles, yielding railcars per train) increased by more than 13% over 2014-2022. FRA safety data also reflect a growing proportion of derailments that involve trains hauling 125 or more cars (**Table 7**), though it is unclear whether these trains are derailing any more or less frequently than the system as a whole on a per-train-mile basis.

Table 7. Indicators of Increased Train Lengths, 2014-2023

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Avg. train length (cars)*	71.8	72.5	71.9	73.2	73.5	74.8	77.1	81.8	81.7	81.1
% of derailments involving 125+ car trains	6%	7%	9%	10%	9%	12%	13%	16%	16%	12%
% of derailments involving 150+ car trains	1%	2%	2%	3%	4%	5%	6%	8%	7%	6%

Source: Compiled by CRS using data from U.S. Department of Transportation (DOT), Bureau of Transportation Statistics, "Rail Profile," *National Transportation Statistics*, https://www.bts.gov/content/rail-profile (2014-2020); AAR, *Railroad Facts 2023 Edition*, December 2023 (2021-2022); Surface Transportation Board, "Annual Report Financial Data," Form R-1, schedule 755, line 4-194, https://www.stb.gov/reports-data/economic-data/annual-report-financial-data/ (2023); and DOT, Federal Railroad Administration, Office of Safety Analysis, "Accident Data as reported by Railroads," Forms 6180.54 and 6180.55, https://safetydata.fra.dot.gov/OfficeofSafety/publicsite/on_the_fly_download.aspx.

Note: *Average train length figures apply to Class I railroads only.

Section 22422 of IIJA (P.L. 117-58) directed the Secretary of Transportation to commission a study on the operation of freight trains longer than 7,500 feet, roughly equivalent to 125 cars (there is some variation in freight car lengths, but most are around 60 feet long). The study, which was published in September 2024 by the National Academies of Sciences, Engineering, and Medicine (NASEM), found evidence of a positive (slight) correlation between the length of Class I railroad "manifest" trains and the risk of a derailment caused by train makeup and handling issues.[25] Among the report's recommendations was for FRA to seek additional resources from Congress to provide closer oversight of railroad safety management systems related to operating long trains.[26] A provision of S. 576 (118th Congress) would have required the Secretary to submit an additional report to Congress within three years of completing the IIJA study explaining whether DOT has failed to address any of that study's recommendations.

FRA issued a safety advisory on May 2, 2023, finding that railroads and railroad employees "are aware of the potential complexities associated with operating longer trains and to recommend that they take appropriate measures to address those complexities to ensure the safe operation of such trains." FRA has followed up its previous advisory by proposing additional data collection from

[25] National Academies of Sciences, Engineering, and Medicine (NASEM), *Long Freight Trains: Ensuring Safe Operations, Mitigating Adverse Impacts* (Washington, DC: National Academies Press, 2024), pp. 28-29 (hereinafter NASEM, *Long Freight Trains*, 2024).

[26] NASEM, *Long Freight Trains*, 2024, pp. 110.

Class I railroads on train length and by collecting additional information on accident/incident reporting forms from all railroads[27] (and on a monthly basis for Class I railroads[28]).

Longer trains also have been alleged to cause more and/or longer blockages of road-rail grade crossings. The issue of blocked crossings is itself the subject of various policy proposals, discussed in the next section.

Other Issues and Legislative Proposals

Although hazmat safety and derailment prevention were immediately germane to the East Palestine crash—which drew media, public, and lawmakers' attention—other, more long-standing rail safety issues have risen in prominence as a result of additional attention being paid to the industry. Many of these issues have little to no bearing on the East Palestine crash but have been incorporated into bills that amend hazmat-by-rail policy.

Blocked Crossings

Many state, local, and federal officials have received complaints about slow-moving or stopped trains blocking road traffic through a highway-rail crossing (also called a grade crossing). In small towns and rural areas, a single crossing may be the only road connection from one side of the tracks to the other for miles, if another one exists at all. This may incentivize drivers to attempt to beat approaching trains, or pedestrians to cross over or through a stopped train, at great personal risk. To assess the scale of the issue, FRA launched a website to collect blocked crossing information from the public on a voluntary basis in 2019.

IIJA directs FRA to establish a blocked crossing portal to collect and analyze blocked crossing data for a period of three years. An earlier proposal for IIJA passed by the House (H.R. 3684, 117th Congress) contained measures, first introduced in the Don't Block Our Communities Act (D-BLOC, H.R. 3698, 117th Congress), that would have created permanent data collection requirements for railroads and DOT, but these measures were not present in the Senate amendment that ultimately became law. The D-BLOC Act was first introduced in the 116th Congress and was reintroduced in the 117th and 118th Congresses.

No federal laws or regulations specifically ban or penalize trains that block highway-rail crossings. Some state or local ordinances establish a time limit for trains that occupy crossings, ranging from as little as five minutes to as much as 20 minutes. State and federal courts have generally found that these laws are preempted by one or more federal laws, rendering them unenforceable. The Federal Railway Safety Act of 1970, as amended, grants states the ability to enact their own rail safety laws only if neither DOT nor the Department of Homeland Security has issued regulations "covering the subject matter of" the state law. Grade crossing safety can be considered "covered by" existing regulations, such as those in 49 C.F.R. Parts 222 and 234, even if no federal time limit rule exists. The Interstate Commerce Commission Termination Act of 1995 further restricts states from enacting laws that regulate rail transportation. Railroad companies have successfully argued in court that laws setting time limits at crossings are functionally the same as regulating railroad business practices, such as train length and speed or

[27] DOT, FRA, "Proposed Agency Information Collection Activities; Comment Request," 88 *Federal Register* 47551, July 24, 2023, https://www.federalregister.gov/documents/2023/07/24/2023-15626/proposed-agency-information-collection-activities-comment-request.

[28] DOT, FRA, "Proposed Agency Information Collection Activities; Comment Request," 89 *Federal Register* 3984, January 22, 2024, https://www.federalregister.gov/documents/2024/01/22/2024-01044/proposed-agency-information-collection-activities-comment-request.

infrastructure construction, which states are not permitted to do. In a November 2023 brief in one such case, the U.S. Solicitor General recommended against the Supreme Court hearing the case, arguing that a lower court had correctly held that Ohio's blocked crossing laws were preempted by federal ones.[29] The Supreme Court in January 2024 denied Ohio's petition to review the case.[30]

The D-BLOC bill would have created a nationwide 10-minute time limit for blocked crossings (with exceptions), subject to civil penalties, and would have required the creation of a central database for blocked crossing incident reports. It also would have directed rail carriers to publicly disclose a phone number to which blocked crossings may be reported; a similar provision was included in S. 576 in the 118th Congress. The data collection and reporting requirements proposed by D-BLOC could have allowed a more objective assessment of where blocked crossings are most frequent and disruptive. Individual railroads have been subject to similar reporting requirements in the past. For example, when a Canadian-owned Class I railroad acquired a smaller carrier in the Chicago area, one of the conditions imposed on the transaction by the Surface Transportation Board was that the railroad would be required to report monthly on crossings blocked for longer than 10 minutes.[31]

The 2024 NASEM long train study recommended that Congress authorize and direct FRA to obtain data on an ongoing basis from railroads on blocked highway-rail crossings and empower FRA to impose penalties "sufficient in magnitude to prompt good faith negotiations to resolve problematic crossing blockages."[32]

Crew Size

Technological advances and cost-cutting pressures in railroading have led to smaller crews on freight trains, to the point where it is not uncommon for a single train to have a crew of two (one engineer and one conductor) aboard. Railroads have explored the use of one-person train crews to further reduce costs, while unions and some lawmakers have sought to establish a two-person crew minimum on safety grounds. FRA proposed a crew size rule in 2016 after several crashes but withdrew it in 2019, stating that available data "d[o] not establish that one-person operations are less safe than multi-person train crews."[33] FRA subsequently proposed a new crew size rule requiring two-person train crews in most trains in July 2022 after the earlier rule's withdrawal was vacated by a federal court. The final rule, issued in April 2024, requires all trains to have a minimum of two crew members on board except in certain situations, such as on slow-moving freight trains loading or unloading at a mine or similar facility, on tourist trains that are not connected to the general rail transportation system, or on passenger trains covered by an FRA-

[29] State of Ohio, petitioner, v. CSX Transportation, Inc., Brief for the United States as Amicus Curiae, November 21, 2023, https://www.supremecourt.gov/DocketPDF/22/22-459/290315/20231121140521279_22-459%20Ohio%20v.%20CSX.pdf.

[30] U.S. Supreme Court, Case No. 22-459, Proceedings and Orders, at https://www.supremecourt.gov/docket/docketfiles/html/public/22-459.html.

[31] In 2010, the railroad was found to have knowingly failed to comply with this requirement and was fined $250,000. See Surface Transportation Board (STB) decision, Canadian National Railway Company and Grand Trunk Corporation—Control—EJ&E West Company, Decision No. 26, December 17, 2010. STB notes that auditors discovered that many crossings are equipped with "Remote Terminal Units" (RTUs) capable of automatically notifying a railroad dispatcher when crossing gates are engaged for longer than 10 minutes (p. 5).

[32] NASEM, *Long Freight Trains*, 2024, pp. 114-115.

[33] DOT, FRA, "Train Crew Staffing," 84 *Federal Register* 24735, May 29, 2019, https://www.federalregister.gov/documents/2019/05/29/2019-11088/train-crew-staffing.

approved emergency preparedness plan.[34] Railroads seeking to use a one-person crew in cases not covered by a permanent exception must first petition FRA for special approval.

Some bills have been introduced that would codify a two-person minimum crew in statute, with limited exceptions for some short-distance operations such as switching and branch line service. HHTs, as proposed to be defined by H.R. 971 in the 119th Congress, and trains longer than 7,500 feet would be ineligible for any such exceptions. This would not affect most long-haul trains currently operating but could constrain railroads in their plans to redeploy staff to reduce costs. For example, Class I railroad Union Pacific had proposed in 2022 to replace an onboard conductor with an off-train "expediter" role, a move opposed by a union representing conductors. An agreement was eventually reached that would preserve all conductor positions through the next round of collective bargaining negotiations (beginning in 2025) and allow Union Pacific to establish expediter positions in certain areas on a trial basis.[35]

Confidential Close Call Reporting System

FRA and the National Aeronautics and Space Administration cosponsor a voluntary program for anonymously reporting close calls or safety lapses, modeled after a preexisting system in the aviation industry. Although Class I railroads have generally chosen not to participate, all Class I railroads signaled their intention to join the program following the East Palestine derailment.[36] The Class I railroads received some necessary approvals from FRA, but their full participation in the program stalled over a dispute about how many violations an employee may report while remaining free from discipline.[37] The first Class I railroad to join the program, Norfolk Southern, did so in January 2024 in a regional pilot program that covered workers in two labor unions.[38] A national pilot program involving a third labor union covered additional employees at Norfolk Southern and another Class I, BNSF Railway.[39]

Several bills have been introduced in recent years that would require carriers to establish confidential close call reporting systems (C3RSs) according to a single set of federal standards. In the 118th Congress, a provision of S. 1044 would have required all Class I railroads that were assessed a civil penalty for rail or hazmat safety violations within the past 15 years (i.e., all of them) to join the program. A provision of H.R. 5871 (118th Congress) would have required all Class I railroads, as well as all intercity or commuter passenger railroads and any railroads found by the Secretary of Transportation to have "inadequate safety performance," to establish their own C3RSs that comply with a set of federal standards within two years. A provision of

[34] DOT, FRA, "Train Crew Size Safety Requirements," 89 *Federal Register* 25052, April 9, 2024, https://www.federalregister.gov/documents/2024/04/09/2024-06625/train-crew-size-safety-requirements.

[35] Bill Stephens, "Union Pacific to Begin Industry-First Pilot Program Comparing Conductors to Ground-Based Positions," *Trains*, July 18, 2023, https://www.trains.com/trn/news-reviews/news-wire/union-pacific-to-begin-industry-first-pilot-program-comparing-conductors-to-ground-based-positions/.

[36] Letter from Ian N. Jefferies, President & CEO, Association of American Railroads, to Secretary of Transportation Pete Buttigieg, March 2, 2023, https://www.aar.org/wp-content/uploads/2023/03/Response-Letter-on-C3RS-FINAL_.pdf.

[37] Letter from Ian N. Jefferies, President & CEO, American Association of Railroads, to Secretary of Transportation Pete Buttigieg and FRA Administrator Amit Bose, August 24, 2023, https://www.aar.org/wp-content/uploads/2023/08/AAR-CEO-C3RS-DOT-Letter-82423.pdf.

[38] DOT, "USDOT and FRA Continue Pressing on Rail Safety, Finalizes Norfolk Southern Railway Participation into Confidential Close Call Reporting System," press release, January 29, 2024, https://www.transportation.gov/briefing-room/usdot-and-fra-continue-pressing-rail-safety-finalizes-norfolk-southern-railway.

[39] DOT, FRA, "Confidential Close Call Reporting System – C3RS," accessed January 8, 2025, https://railroads.dot.gov/railroad-safety/divisions/safety-partnerships/c3rs/confidential-close-call-reporting-system-c3rs.

H.R. 8996 (118th Congress) would have required each Class I railroad and Amtrak to enroll in C3RS for a two-year period.

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